

Task 1.6 -- Mixed Waste

Topical Report
April 1994 - September 1995

John R. Rindt
Frank A. Jones

January 1996

Work Performed Under Contract No.: DE-FC21-93MC30097

For
U.S. Department of Energy
Office of Fossil Energy
Morgantown Energy Technology Center
Morgantown, West Virginia

By
University of North Dakota
Grand Forks, North Dakota

MASTER

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**For
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Office of Fossil Energy
Morgantown Energy Technology Center
P.O. Box 880
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**By
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Energy & Environmental Research Center
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January 1996

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TASK 1.6 – MIXED WASTE

1.0 INTRODUCTION

For fifty years, the United States was involved in a nuclear arms race of immense proportions. During the majority of this period, the push was always to design new weapons, produce more weapons, and increase the size of the arsenal, maintaining an advantage over the opposition in order to protect U.S. interests. Now that the "Cold War" is over, we are faced with the imposing tasks of dismantling, cleaning up, and remediating the wide variety of problems created by this arms race. All of our technological expertise is being called into play and sometimes stretched beyond its limits by the problems presented in this cleanup effort. These problems and the history of the development of the nuclear energy industry in this country are described in detail in the Department of Energy (DOE) publication "Closing the Circle on the Splitting of the Atom," while an overview of the current status of the total remediation effort within the DOE is presented in the DOE publication "ENVIRONMENTAL MANAGEMENT 1995" (EM 1995).

The by-product of the nuclear arms race and the development of nuclear energy is radioactive waste. Not all radioactive waste is the same though; therefore, a system was devised to categorize the different types of radioactive waste. These categories are as follows: spent fuel; high-level waste; transuranic waste; low-level waste; mixed waste; and uranium-mill tailings (1). Mixed waste is defined to be material contaminated with any of these categories of radioactive material plus an organic or heavy metal component. However, for this discussion, "mixed waste" will pertain only to low-level mixed waste which consists of low-level radioactive waste mixed with organic solvents and or heavy metals (1).

The area of "mixed-waste characterization, treatment, and disposal" is listed on page 6 of the EM 1995 publication as one of five focus areas for technological development, and while no more important than the others, it has become an area of critical concern for DOE (2). Lacking adequate technologies for treatment and disposal, the DOE stockpiled large quantities of mixed waste during the 1970s and 1980s. Legislative changes and the need for regulatory compliance have now made it expedient to develop methods of achieving final disposition for this stockpiled mixed waste (1).

The ability to understand the problems encountered when dealing with radioactive waste, both from a scientific standpoint and from a legislative standpoint, requires knowledge of those subject areas. This required the accumulation of applicable information. A literature database was developed; site visits were made; and contact relationships were established. Informational databases from government agencies involved in environmental remediation were ordered or purchased, and previously established private sector relationships were used to develop an information base.

2.0 PROGRAM

The first phase of the EERC's research program was a literature search that provided a base of information about mixed waste. This information contained 482 individual records that have

been integrated into a Microsoft Access® database. See Appendix A. Appendix A includes a hardcopy of literature search entries plus the Microsoft Access® database, ACCESSDB.EXE, which includes the database plus all the necessary files. This is a self-extracting compressed file, simply run the program to unpack the database and its files. Once unpacked, the database can be run using Microsoft Access®. This allows for simplified information management and ease of handling. In addition, the information available to the EERC was expanded through the following sources:

- Two EERC databases (currently unreleased to the public)
 - Projects
 - Vendors
- Database (DB) structures from the Environmental Protection Agency (EPA)
 - Visitt DB
 - Records of Decision
- SITE program for innovative technologies
- DOE publications
- EPA publications
- Department of Defense (DOD) publications
- Technology profiles from the private sector

The available information pertinent to this research effort is considerable and continues to grow daily; therefore, because of the size of the information base available to us, efforts were made to organize the information into manageable units by integrating the various databases into larger, more inclusive units. During the period of accumulating and organizing all the information, an ongoing process of assimilation was taking place.

3.0 RESULTS

The accumulation of information, its organization, and assimilation will continue to be ongoing, but they have been completed adequately for the work effort. Databases of significance have been acquired and are available for the use of the EERC staff. Two of the databases were generated in-house: one listing remediation projects in the United States and the other listing vendors involved in remediation efforts. The remaining two databases on-site are the Visitt database and the Records of Decision database, both from the EPA. Also currently available via the Internet are the ATTIC (Alternative Treatment Technology Information Center), an information retrieval network for remediation managers about the up-to-date technical information. The DOE Energy database and the Technology database are also available in this manner.

The site visitations were completed as follows.

Frank Beaver, Associate Director of the Energy & Environmental Research Center (EERC), attended the Fifth Annual Weapons Complex Conference in Phoenix, Arizona, April 4-7, 1994. The purpose of this trip was twofold: 1) to evaluate existing obstacles between DOE agencies and laboratories and industry in the area of mixed waste and 2) to define a role for the EERC in mixed-waste research. Concerns expressed included the matching of technologies with problems and the need for innovative remediation technology development. This presented the opportunity for the

obtain better results and to serve as the link needed to develop technology and enhance communication between government and industry.

Frank Beaver also attended the U.S. DOE Stakeholder/Roundtable Meeting in Denver, Colorado on June 29, 1994. The U.S. DOE Denver Regional Office cosponsored the meeting with The Rocky Mountain Oil Field Test Center in Casper, Wyoming. The focus of the meeting was the off-the-shelf technology and near-term technology transfer programs designed to help the independent oil and gas industry producers lower their production costs. A better understanding of the problems that exist between government programs and the independent oil and gas producers was gained. Independent producers also expressed their frustration with the results of past efforts to supply the information and technologies they need.

In August 1994, John Rindt visited the Mine Waste Technology Pilot Program (MWTPP) and the (Resource Recovery Project) in Butte, Montana. He attended key meetings and talked with Thomas Malloy and other project PIs. Specific problems discussed were the flow of water through bedrock and into mineshafts resulting in contamination with metals. Their solution was to fill the mine with organic material, such as a cow manure and hay mixture. We discussed applications and John's goal was to become more knowledgeable in the technical aspects of mine technology and inorganics.

On August 14-18, 1994, John Rindt attended the 1994 Summer National Meeting of the American Institute of Chemical Engineers (AIChE) in Denver, Colorado. The theme of the conference was "Stewardship with the Environment." John attended several presentations at the conference in the areas of Environmental Bioremediation at the Field Scale, Innovative Technology for Remediation of Contaminated Soils and Solvents, Waste Minimization at Nuclear Facilities, Liquid-Phase Process for Destruction of Hazardous Organic Compounds, Pretreatment of High-Strength Aqueous Industrial Waste, Planned and Operating Mixed Treatment Facilities, Mixed Waste Treatment Technology, Research and Development, Biological Treatment of Waste Gases, Separation Processes for Nuclear and Mixed Wastes, Sections I through IV, and Human Factors.

John Rindt visited the Rocky Flats facility in Denver, Colorado, in April 1995. This visit was arranged through Cliff Brown, an Oak Ridge National Laboratory employee on assignment at the Rocky Flats facility who was also acting as the interim Technical Project Officer (TPO) at the Office of Technology Division, DOE. John Rindt and Frank Beaver spent several hours with the EG&G supervising engineer and discussed past, present, and future developmental effort areas. The general approach at Rocky Flats was to remove organics and, subsequently, encapsulate the radioactive inorganic residues. As a result, their two priority areas were 1) encapsulation and 2) separation of organics from residue. One of the greatest challenges faced by Rocky Flats was dealing with public skepticism.

The visit ended with a 2-hour tour of the facility. A substantial amount of technical information for inclusion into the database was promised from the EG&G engineering staff.

4.0 SUMMARY AND CONCLUSIONS

As a result of this work effort, the research team involved now has an understanding of the complexity inherent in cleanup and remediation of radioactive waste and in particular the area encompassing low-level mixed waste. The challenges presented by the presence of radioactive species have created an opportunity for new or revamped technologies and many opportunities for new research endeavors and partnerships.

An area of concern that became apparent during this work effort was the presence of the various government agencies in all facets of the program. Each agency, with the best of intentions, has contributed its regulatory program or compliance requirements, the cumulative results being an environment prohibitive to technological development. In order to satisfy all the regulatory constraints, the amount of time necessary for the development and introduction of an emerging technology is prolonged.

This regulatory atmosphere has had the negative result of making the private sector hesitant when proposing new technologies to the appropriate government agency. They have found it necessary to very carefully weigh the effort needed to comply with the political processes which are currently inherent within the U.S. government agencies, sometimes to the point of not pursuing opportunities which have good technological merit.

In the past, difficult technological problems and environmental issues have been addressed in a cooperative manner through partnerships between the federal government and private industry. This type of relationship would promote the best use of the technological communities in this country. An example of this type of cooperation would be the on-going cooperative agreement between the EERC and DOE. This cooperative agreement has benefitted the DOE by enhancing the DOE's monetary research investment through matching fund agreements with private industry. The realized potential of this cooperative funding was an increase of available funding of 150%-200%. This is only one of the benefits of cooperative partnering between the government agencies and private industry and shows the potential for research facilities like the EERC to act as a positive liaison between government and industry.

When the Morgantown Energy Technology Center (METC) proposed this work effort, the intent was to become knowledgeable in the area of radioactive waste remediation, specifically the area of low-level mixed waste and to determine a potential for future research areas and also for technology development. The consensus being that the EERC, METC, and the private sector would all have positive input toward solving some of the environmental and technological problems facing this country and the world and welcome the opportunity to work in partnership with the agencies of the U.S. government.

5.0 REFERENCES

1. U.S. Department of Energy. "Closing the Circle on the Splitting of the Atom," Office of Environmental Management report; Jan. 1995; pp 24, 53.

2. U.S. Department of Energy. "Environmental Management 1995: Progress and Plans of the Environmental Management Program," Environmental Management Report DOE/EM-0228; Feb. 1995; p 6.

APPENDIX A

Record - 1

<DIALOG File 6: >

1756171 NTIS Accession Number: DE94001671/XAB

Sensors in outdoor environmental monitoring and site remediation

Wise, B. M.

Battelle Pacific Northwest Labs., Richland, WA.

Corp. Source Codes: 048335000; 9512268

Sponsor: Department of Energy, Washington, DC.

Report No.: PNL-SA-23102; CONF-9309247-2

Sep 93 5p

Languages: English Document Type: Conference proceeding

Journal Announcement: GRAI9409; ERA9414

National Institute of Standards and Technology (NIST) workshop on gas sensors, Gaithersburg, MD (United States), 8-9 Sep 1993. Sponsored by Department of Energy, Washington, DC.

NTIS Prices: PC A01/MF A01

Country of Publication: United States

Contract No.: AC06-76RL01830

A special session on sensors in outdoor environmental monitoring and site remediation was held as part of the NIST Workshop on Gas Sensors. This manuscript summarizes the main points of the workshop. Application areas, issues of concern, and potentially fruitful areas for further research and development were discussed. The main conclusion of the group was that the problems and potential solutions to problems in environmental monitoring were common to other application areas of sensing as well. Of particular concern to the group were the many barriers to final development and commercialization of sensors. Barriers included lack of information on potential markets lack of support of development, (as opposed to more basic research), and difficulties in developing the final packaging for a device. The characterization and development of chemically selective materials for sensor coatings was viewed by the group as a particularly important area for future research.

Record - 2

<DIALOG File 6: >

1730108 NTIS Accession Number: AD-A269 296/0/XAB

Remediation Technologies Screening Matrix. Reference Guide. Version 1

Environmental Protection Agency, Washington, DC.

Corp. Source Codes: 031287000; 390139

Jul 93 145p

Languages: English

Journal Announcement: GRAI9401

NTIS Prices: PC A07/MF A02

Country of Publication: United States

This Reference Guide provides additional information to increase the usability of the Remediation Technologies Screening Matrix. Together, the Reference Guide and Matrix can help site remediation project managers narrow the field of remediation alternatives and identify potentially applicable technologies for more detailed assessment and evaluation prior to remedy selection. In addition, the documents can be used to guide the selection of focused technology field demonstrations and specific technologies to highlight in subsequent technical data sheets, design

manuals, and cost studies. The Reference Guide and Matrix are intended general references only. Additional information to support identification of potentially applicable technologies can be obtained by consulting published references, contacting technology experts, and conducting treatability studies. The Matrix and Reference Guide are not designed to be used as the sole basis for remedy selection.

Record - 3

<DIALOG File 6: >

1709230 NTIS Accession Number: PB93-217651/XAB
Risk Reduction Engineering Laboratory Site Remediation Technical Support
Program: FY92 Annual Report

(Final rept)

Science Applications International Corp., Cincinnati, OH.

Corp. Source Codes: 101186000

Sponsor: Environmental Protection Agency, Cincinnati, OH. Risk Reduction
Engineering Lab.

Report No.: EPA/600/R-93/133

Mar 93 19p

Languages: English

Journal Announcement: GRAI9321

Sponsored by Environmental Protection Agency, Cincinnati, OH. Risk
Reduction Engineering Lab.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

Contract No.: EPA-68-C8-0048

The Risk Reduction Engineering Laboratory is responsible for planning, implementing, and managing research, development, and demonstration programs to provide an authoritative, defensible engineering basis in support of the policies, programs, and regulations of the EPA with respect to drinking water, wastewater, pesticides, toxic substances, solid and hazardous wastes, and Superfund-related activities. The publication is one of the products of that research and provides a vital communication link between the researcher and the user community. The report summarizes the activities and accomplishments of the Laboratory in providing technical support to EPA Regional Offices and others on contaminated soil site remediation engineering problems.

Record - 4

<DIALOG File 6: >

1703310 NTIS Accession Number: AD-A266 299/7/XAB
U.S. Air Force Proposes Plan for Interim Remedial Action for PCB
Contaminated Soils

McClellan AFB, CA.

Corp. Source Codes: 107078000; 222600

Jun 93 27p

Languages: English

Journal Announcement: GRAI9320

NTIS Prices: PC A03/MF A01

Country of Publication: United States

The US Air Force is requesting public comments on this Proposed Plan for cleanup of PCB contaminated soil. This is an interim measure to address

soil contamination at McClellan Air Force Base (McAFB) located near Sacramento, California. The public comment period begins June 16, 1993 and ends July 16, 1993. A public meeting will be held on June 30, 1993 to talk about the proposal, hear public concerns, answer questions and receive public comments. The Air Force's preferred cleanup option for PCB contaminated soil is to cap the area described as Operable Unit (OU) B1. Because of limited proven technologies developed to destroy contaminants such as PCB, capping is considered to be the best solution to address this contamination. As part of the Air Force's cleanup efforts at McClellan, a search for cleanup technologies for PCB contaminated soil will continue.

Record - 5

<DIALOG File 6: >

1701717 NTIS Accession Number: PB93-205144/XAB

Alternating Current Electrocoagulation for Superfund Site Remediation
(Journal article)

Barkley, N. P. ; Farrell, C. W. ; Gardner-Clayson, T. W.

Electro-Pure Systems, Inc., Amherst, NY.

Corp. Source Codes: 099843000

Sponsor: Environmental Protection Agency, Cincinnati, OH. Risk Reduction
Engineering Lab.

Report No.: EPA/600/J-93/231

c1993 8p

Languages: English Document Type: Journal article

Journal Announcement: GRAI9319

Pub. in Jnl. of Air and Waste Management Association, 1993. See also
PB-143 652. Sponsored by Environmental Protection Agency, Cincinnati, OH.
Risk Reduction Engineering Lab.

NTIS Prices: PC A02/MF A01

Country of Publication: United States

Contract No.: EPA-R-816205

The technical and economical feasibility of alternating current electrocoagulation (ACE) was evaluated for a 2-year period. ACE is an electrochemical technology where highly-charged aluminum polyhydroxide species are introduced into aqueous media for the removal of suspended solids, oil droplets, and soluble ionic pollutants. ACE can break stable aqueous colloidal suspensions of up to 10% total solids and stable emulsions containing up to 5% oil. Major operating parameters have been defined for different classes of effluents based on experimental results using complex synthetic soil slurries and metals. Test results indicate that ACE produces aqueous and solid separations comparable to those produced by chemical flocculent additions, but with reduced filtration times and sludge volumes. The technology has application where removal of soluble and suspended pollutants from effluents is required, and in the recovery of fine-grained products from process streams. The technology however, has not yet been demonstrated at full-scale for Superfund site remediation. Summarized are the principal results of the SITE research program and results of ACE treatment on some different classes of industrial effluents, not part of the SITE Program.

Record - 6

<DIALOG File 6: >

1688175 NTIS Accession Number: PB93-185809/XAB

Program for Providing Engineering Technical Assistance to Site
Remediation Managers

Blaney, B. L.

Environmental Protection Agency, Cincinnati, OH. Risk Reduction
Engineering Lab.

Corp. Source Codes: 034122084

Report No.: EPA/600/A-93/097

1992 7p

Languages: English

Journal Announcement: GRAI9315

Proceedings for 1992 International Symposium on Environmental
Contamination in Central and Eastern Europe, Budapest, Hungary, October
12-16, 1992, p297-300. See also PB92-205657 and PB93-105591.

NTIS Prices: PC A02/MF A01

Country of Publication: United States

The Office of Research and Development (ORD) of the U.S. Environmental
Protection Agency (USEPA) provides technical support to USEPA Regional
Offices which are responsible for overseeing and/or implementing the
remediation of contaminated sites. As a result, ORD has developed a number
of effective mechanisms for providing timely, practical and high quality
technical support on such site remediation projects, and has produced a
variety of technology transfer documents on the topic. The paper describes
these activities, with particular emphasis on the program of the USEPA ORD
Risk Reduction Engineering Laboratory's program to deal with engineering
remediation problems.

Record - 7

<DIALOG File 6: >

1681514 NTIS Accession Number: PB93-865012/XAB

Leachate Recovery and Recirculation. (Latest citations from the Selected
Water Resources Abstracts Database)

(Published Search)

NERAC, Inc., Tolland, CT.

Corp. Source Codes: 103588000

Sponsor: National Technical Information Service, Springfield, VA.

Apr 93 99 citations minimum

Languages: English Document Type: Bibliography

Journal Announcement: GRAI9313

Prepared in cooperation with Office of Water Research and Technology,
Washington, DC. Sponsored in part by National Technical Information
Service, Springfield, VA.

NTIS Prices: PC N01/MF N01

Country of Publication: United States

The bibliography contains citations concerning leachates from landfill
operations. The references cover the sampling and analysis of landfill
leachate to evaluate leachate flow through landfills and to determine
levels of toxic materials. Also discussed are recirculation and recovery
systems that prevent entry of leachates into groundwater when used in
conjunction with landfill liners or other containment methods. (Contains a
minimum of 99 citations and includes a subject term index and title list.)

Record - 8

<DIALOG File 6: >

1665112 NTIS Accession Number: PB93-145696/XAB

Federal Publications on Alternative and Innovative Treatment Technologies for Corrective Action and Site Remediation. (Second Edition)

Federal Remediation Technologies Roundtable.

Corp. Source Codes: 105562000

Sponsor: Environmental Protection Agency, Washington, DC. Technology Innovation Office.

Report No.: EPA/542/B-92/001

Aug 92 36p

Languages: English Document Type: Bibliography

Journal Announcement: GRAI9308

See also PB91-921293. Sponsored by Environmental Protection Agency, Washington, DC. Technology Innovation Office.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

Contract No.: EPA-68-W2-004

The Federal Remediation Technologies Roundtable developed this bibliography to publicize the availability of Federal documents pertaining to innovative and alternative technologies to treat hazardous wastes. The first edition of the bibliography was published in 1991. This bibliography addresses technologies that provide for the treatment of hazardous wastes; therefore, it does not contain information or references for containment or other non-treatment strategies, such as landfilling and capping. This bibliography emphasizes innovative technologies for which detailed cost and performance data are not available. Information on more conventional treatment technologies, such as incineration and solidification, is not included.

Record - 9

<DIALOG File 6: >

1665079 NTIS Accession Number: PB93-144111/XAB

Synopses of Federal Demonstrations of Innovative Site Remediation Technologies

Federal Remediation Technologies Roundtable.

Corp. Source Codes: 105562000

Sponsor: Environmental Protection Agency, Washington, DC. Technology Innovation Office.

Report No.: EPA/542/B-92/003

Aug 92 233p

Languages: English

Journal Announcement: GRAI9308

See also PB91-921284. Sponsored by Environmental Protection Agency, Washington, DC. Technology Innovation Office.

NTIS Prices: PC A11/MF A03

Country of Publication: United States

The collection of abstracts, compiled by the Federal Remediation Technology Roundtable, describes field demonstrations of innovative technologies to treat hazardous waste. This document updates and expands information presented in the first edition of the collection which was published in 1991. The collection is intended to be an information resource for hazardous waste site project managers for assessing the availability

and viability of innovative technologies for treating contaminated ground water, soils, and sludge. This document represents a starting point in the review of technologies available for application to hazardous waste sites. This compendium should not be looked upon as a sole source for this information -- it does not represent all innovative technologies nor all technology demonstrations performed by these agencies. Only Federally sponsored studies and demonstrations that have tested innovative remedial technologies with site specific wastes under realistic conditions as a part of large pilot- or full-scale field demonstrations are included. Those studies included represent all that were provided to the Federal Remediation Technology Roundtable at the time of publication. Information collection efforts are ongoing.

Record - 10

<DIALOG File 6: >

1662015 NTIS Accession Number: AD-A258 757/4/XAB

Incineration of Explosive Contaminated Soil as a Means of Site Remediation

(Technical rept)

Major, M. A. ; Amos, J. C.

Army Biomedical Research and Development Lab., Fort Detrick, MD.

Corp. Source Codes: 088831000; 417130

Report No.: USABRDL-TR-9214

24 Nov 92 22p

Languages: English

Journal Announcement: GRAI9308

NTIS Prices: PC A03/MF A01

Country of Publication: United States

Large scale releases of explosive contaminated water have occurred in connection with manufacture of explosives, with load assembly and pack operations and at centers for the disassembly and recycle of munitions. The most serious contamination is at sites where explosive contaminated pink water was discarded in unlined evaporation lagoons. Sediments in pink water lagoons normally contain a high concentration of explosive and contamination of ground-water is usually the result. In an effort to remediate this hazard, the U.S. Army has chosen incineration of the contaminated soil as the best means of remediation. Although there is general agreement as to the superiority of incineration for this purpose, the process is complex and environmental, legal and financial questions remain.... Incineration, TNT, RDX, Lead, Mercury, Cadmium, RCRA, Remediation.

Record - 11

<DIALOG File 6: >

1646283 NTIS Accession Number: AD-A257 009/1/XAB

Rotary Spreaders: Section 8.3.1 US Army Corps of Engineers Wildlife Resources Management Manual

(Final rept)

Doerr, T. B.

Army Engineer Waterways Experiment Station, Vicksburg, MS. Environmental Lab.

Corp. Source Codes: 002621009; 411388

Report No.: WES/TR/EL-86-46

Jul 86 10p

Languages: English

Journal Announcement: GRAI9303

NTIS Prices: PC A02/MF A01

Country of Publication: United States

An equipment report on rotary spreaders is provided as Section 8.3.1 of the US Army Corps of Engineers Wildlife Resources Management Manual. The report is designed to assist the Corps District or project biologist with the selection and use of types of equipment and materials available for habitat development and manipulation. Topics covered include description, operation, maintenance, limitations, and availability. Rotary spreaders are applicators used to broadcast dry fertilizer, lime, herbicides, or seed over the soil surface. They are commonly used throughout the United States for reclamation and habitat improvement projects. Management objectives for using rotary spreaders are stated, and uses for developing wildlife habitat are discussed. The design and assembly of equipment are described and illustrated, and general specifications are provided. Methods of operation are described, and maintenance and safety requirements are given. Appropriate cautions and limitations are discussed. Applicator, Rotary Spreader, Equipment, Soil amendment equipment, Spreader, Site reclamation.

Record - 12

<DIALOG File 6: >

1642346 NTIS Accession Number: PB93-105617/XAB

Literature Survey of Innovative Technologies for Hazardous Waste Site Remediation, 1987-1991

Environmental Protection Agency, Washington, DC. Office of Solid Waste and Emergency Response.

Corp. Source Codes: 031287606

Report No.: EPA/542/B-92/004; ISBN-0-16-036253-9

Jul 92 50p

Languages: English Document Type: Bibliography

Journal Announcement: GRAI9301

Also available from Supt. of Docs.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

EPA's Office of Solid Waste and Emergency Response is seeking to further the use of innovative hazardous waste treatment technologies in its programs. In order to achieve more permanent remedies, the Agency is encouraging the use of new or innovative technologies that are capable of treating contaminated soils/sludges and ground water more effectively, less expensively, and in a manner more acceptable to the public than existing conventional methods. The bibliography is intended to increase the efficiency of the technology evaluation process. The document is not meant to be comprehensive in scope nor is it meant to convey an endorsement of the citations. It is meant to provide a survey of publications which could be useful when innovative technologies are investigated. As a research aid, the bibliography can help provide insights into current developments and provide references which may serve as a basis for further investigations.

Record - 13

<DIALOG File 6: >

1637909 NTIS Accession Number: PB92-231174/XAB

Radioactive Site Remediation Technologies Seminar. Speaker Slide Copies
Environmental Protection Agency, Washington, DC. Office of Research and
Development.

Corp. Source Codes: 031287457

Report No.: EPA/540/K-92/001

Jun 92 69p

Languages: English

Journal Announcement: GRAI9224

NTIS Prices: PC A04/MF A01

Country of Publication: United States

Contents: Approaches to Sampling Radioactive Heterogeneous Waste; Soil Characterization Methodology for Determining Application of Soil Washing; VORCE(Volume Reduction/Chemical Extraction) Program; Treatment of Radioactive Compounds in Water; Polymer Solidification of Low-Level Radioactive, Hazardous, and Mixed Waste; In Situ Vitrification of Soils Contaminated With Radioactive and Mixed Wastes; Decontamination of Contaminated Buildings; Incineration of Radioactive Waste; In Situ Stabilization/Solidification With Cement-Based Grouts; Environmental Restoration and Waste Management; Removal of Contaminants From Soils by Electrokinetics; and Treatment, Compaction, and Disposal of Residual Radioactive Waste.

Record - 14

<DIALOG File 6: >

1634073 NTIS Accession Number: PB92-208370/XAB

Definitional Mission Report: Hazardous Waste Site Remediation, Czech Republic, Republic of Czechoslovakia

(Export trade information)

Ellis, R. A.

Advanced Waste Management Systems, Inc., Chattanooga, TN.

Corp. Source Codes: 104244000

Sponsor: Trade and Development Program, Rosslyn, VA.

Oct 90 48p

Languages: English

Journal Announcement: GRAI9223

See also PB92-208388, PB92-208396, PB92-208404, and PB92-208412.

Sponsored by Trade and Development Program, Rosslyn, VA.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

The report documents the findings of a U.S. Trade and Development Program (TDP)-funded definitional mission to examine the need for hazardous waste disposal site remediation in the Czech Republic, Republic of Czechoslovakia. Four sites were studied. They were: Kbely Army Airfield, Spolana Chemical Works, Neratovice, and Milovice Former Soviet Army Base. Each of these presented quite different problems, complexities, and needs. Each is therefore treated as a subreport.

Record - 15

<DIALOG File 6: >

1631966 NTIS Accession Number: DE92012332/XAB

Database of information on technologies for hazardous waste site remediation

Holter, G. M. ; White, M. K. ; Bryant, J. L.

Battelle Pacific Northwest Labs., Richland, WA.

Corp. Source Codes: 048335000; 9512268

Sponsor: Department of Energy, Washington, DC.

Report No.: PNL-SA-19814; CONF-920466-12

Apr 92 9p

Languages: English Document Type: Conference proceeding

Journal Announcement: GRAI9223; ERA9246

Engineering and technology conference on waste management and environmental restoration, San Juan (Puerto Rico), 9-11 Apr 1992. Sponsored by Department of Energy, Washington, DC.

NTIS Prices: PC A02/MF A01

Country of Publication: United States

Contract No.: AC06-76RL01830

A personal-computer-based database and user interface has been developed for retrieving and reviewing information on technologies applicable to the environmental remediation of hazardous waste sites. This system and its information represent a useful source of technology information for people preparing, reviewing, and approving site remediation plans or evaluating remediation technologies. The system includes a variety of information for approximately 90 distinct remedial action technologies. A general text description of each technology is provided, together with basic engineering or design parameters and flowcharts. Information on applying a given technology includes the applicability of the technology to specific contaminants, associated technologies that may be required in conjunction to provide for complete remediation of a site, technical limitations and constraints on the use of the technology, and identification of information or site data needed to deploy the technology at a particular site. US federal regulatory information relating to each technology is also provided. In addition, the system identifies sources for more detailed information for these technologies (i.e., references and specific sites where these technologies have been used). Technologies to be considered can be selected from the complete list of technologies for which information is included, or can be chosen from a shorter list of technologies matching a set of user-specific remediation objectives. The technology information is compiled from a wide variety of sources. The system is designed to support the assessment of remedial alternatives at US sites, but should be readily adaptable to other environmental remediation situations throughout the world.

Record - 16

<DIALOG File 6: >

1623811 NTIS Accession Number: PB92-205657/XAB

Technical Support Services for Superfund Site Remediation and RCRA Corrective Action. Third Edition

(Final rept)

Environmental Protection Agency, Washington, DC. Office of Emergency and Remedial Response.

Corp. Source Codes: 031287614

Report No.: EPA/540/8-91/091

Mar 92 54p

Languages: English

Journal Announcement: GRAI9220

NTIS Prices: PC A04/MF A01

Country of Publication: United States

A directory of technical support services available to EPA field staff to enable them to quickly identify resources which may be useful in solving a specific hazardous waste clean-up problem. Rather than an exhaustive inventory of all sources of technical information, the publication highlights the significant EPA technical assistance programs - those that have procedures in place to process requests for assistance (e.g. answering a technical question, providing staff to work on the problem, or referring callers to the appropriate source). Categories of services advertised include technical support sources and brokers, automated information systems, publications, and a variety of other organizational sources of information.

Record - 17

<DIALOG File 6: >

1583505 NTIS Accession Number: AD-A244 010/5/XAB

Laboratory-Scale Soil Washing Test on Rocky Mountain Arsenal Basin F Material (Task Order No. 8)

(Final rept)

Balasco, A. A. ; Stevens, J. I. ; Adams, J. W. ; Cerundolo, D. L. ; Rickard, S.

Little (Arthur D.), Inc., Cambridge, MA.

Corp. Source Codes: 016223000; 208850

Sponsor: Army Toxic and Hazardous Materials Agency, Aberdeen Proving Ground, MD. Technology Div.

Report No.: AMXTH-TE-CR-88016

Aug 88 75p

Languages: English

Journal Announcement: GRAI9208

Prepared in cooperation with MTA Remedial Resources, Inc. Golden, CO.

NTIS Prices: PC A04/MF A01

Country of Publication: United States

Contract No.: DAAK11-85-D-0008

To initiate the evaluation of the soil washing process, MTARRI designed and carried out a laboratory program to determine: the applicability of the process; and the conditions that would remove both the organic and inorganic contaminants from the Basin F materials to yield a clean soil that could be placed in a fill on-site. The process was then proven by a demonstration run, at the bench-scale. MTARRI had previously shown that the soil washing process could remove organics and inorganics from soils; however, no work had been done with a material having the particular contaminants contained in Basin F. Therefore, a laboratory development program was required to establish the necessary physical and chemical conditions that would remove these contaminants from the Basin F material.

Record - 18

<DIALOG File 6: >

1563274 NTIS Accession Number: PB91-921284/XAB

Synopses of Federal Demonstrations of Innovative Site Remediation

Technologies

Environmental Protection Agency, Washington, DC. Office of Emergency and Remedial Response.

Corp. Source Codes: 031287614

Report No.: EPA/540/8-91/009; OSWER-9380.1-06

May 91 133p

Languages: English

Journal Announcement: GRAI9124

Paper copy available on Standing Order, deposit account required (minimum deposit \$200 U.S., Canada, and Mexico; all others \$400). Single copies also available in paper copy or microfiche.

NTIS Prices: PC A07/MF A02

Country of Publication: United States

A compendium of abstracts documenting the results of demonstrations of hazardous treatment technologies conducted by Federal agencies involved in Superfund Remediation and RCRA and UST Corrective Actions. The document contains abstracts from EPA (primarily from the Superfund Innovative Technology Evaluation program), DOD, and DOE. It also includes an outline of data needs to guide project managers in submitting information on new projects for future editions of the document.

Record - 19

<DIALOG File 6: >

1562011 NTIS Accession Number: DE91016705/XAB

Site remediation considerations and foundation excavation plan for the Walter Reed Army Institute of Research building, Forest Glen, Maryland
Hambley, D. F. ; Harrison, W. ; Foster, S. A. ; Schweighauser, M. J.

Argonne National Lab., IL. Energy Systems Div.

Corp. Source Codes: 001968030; 9527303

Sponsor: Department of Energy, Washington, DC.

Report No.: ANL/ESD/TM-17

Apr 91 265p

Languages: English

Journal Announcement: GRAI9124; ERA9152

Sponsored by Department of Energy, Washington, DC.

NTIS Prices: PC A12/MF A03

Country of Publication: United States

Contract No.: W-31109-ENG-38

The US Army Corps of Engineers North Atlantic Division, Baltimore District (CENAB), intends to design and construct a medical and dental research facility for the Walter Reed Army Institute of Research (WRAIR) at the Walter Reed Army Medical Center (WRAMC) at Forest Glen, Maryland. Because almost 100% of the proposed building site is located on an uncontrolled landfill that was thought to possibly contain medical, toxic, radioactive, or hazardous waste, it was assumed that remediation of the site might be necessary prior to or in conjunction with excavation. To assess (1) the need for remediation and (2) the potential hazards to construction workers and the general population, the Baltimore District contracted with Argonne National Laboratory to undertake a site characterization and risk assessment and to develop a foundation-excavation plan. The results of the site characterization and a qualitative risk assessment have been presented in a previous report. This report presents the foundation-excavation plan. 38 refs., 16 figs., 11 tabs.

Record - 20

<DIALOG File 6: >

1560777 NTIS Accession Number: PB91-921293/XAB

Bibliography of Federal Reports and Publications Describing Alternative and Innovative Treatment Technologies for Corrective Action and Site Remediation

Environmental Protection Agency, Washington, DC. Office of Emergency and Remedial Response.

Corp. Source Codes: 031287614

Report No.: EPA/540/8-91/007; OSWER-9380.1-08

May 91 29p

Languages: English Document Type: Bibliography

Journal Announcement: GRAI9123

Paper copy available on Standing Order, deposit account required (minimum deposit \$200 U.S., Canada, and Mexico; all others \$400). Single copies also available in paper copy or microfiche.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

The Federal Remediation Technologies Roundtable developed this bibliography to publicize the accessibility of Federal documents pertaining to innovative and alternative technologies to treat hazardous wastes. The bibliography contains references for documents and reports from the U.S. Environmental Protection Agency (EPA), the U.S. Army, the U.S. Army Corps of Engineers, the U.S. Navy, the U.S. Air Force, the U.S. Department of Energy (DOE), and the U.S. Department of Interior (DOI), Bureau of Reclamation. The publication contains references and order information for reports on research concerning the application of innovative and alternative hazardous waste treatment options. The bibliography is scheduled to undergo periodic revisions.

Record - 21

<DIALOG File 6: >

1560184 NTIS Accession Number: PB91-228353/XAB

Technical Support Services for Superfund Site Remediation. Interim Directory

Wilhelm, R. G.

Environmental Protection Agency, Washington, DC. Office of Emergency and Remedial Response.

Corp. Source Codes: 031287614;

Sponsor: Environmental Management Support, Silver Spring, MD.

Report No.: EPA/540/8-90/001; OERR-9380.1-09

Feb 90 34p

Languages: English

Journal Announcement: GRAI9123

Prepared in cooperation with Environmental Management Support, Silver Spring, MD.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

The Directory highlights the significant OSWER and ORD technical assistance programs that have procedures in place to process requests such as answering a technical question, providing staff to work on a problem, or

referring callers to the appropriate source.

Record - 22

<DIALOG File 6: >

1558051 NTIS Accession Number: PB91-921285/XAB
Technical Support Services for Superfund Site Remediation. Second Edition
Environmental Protection Agency, Washington, DC. Office of Emergency and
Remedial Response.

Corp. Source Codes: 031287614

Report No.: EPA/540/8-90/011; OSWER-9380.1-14

Nov 90 73p

Languages: English

Journal Announcement: GRAI9122

Paper copy available on Standing Order, deposit account required (minimum deposit \$200 U.S., Canada, and Mexico; all others \$400). Single copies also available in paper copy or microfiche.

NTIS Prices: PC A04/MF A01

Country of Publication: United States

The Directory (Second Edition) updates and highlights the significant OSWER and ORD technical assistance programs that have procedures in place to process requests such as answering a technical question, providing staff to work on a problem, or referring callers to the appropriate source.

Record - 23

<DIALOG File 6: >

1528993 NTIS Accession Number: PB91-171694/XAB
Use of Electrokinetics for Hazardous Waste Site Remediation
(Journal article)

Cabrera-Guzman, D. ; Swartzbaugh, J. T. ; Weisman, A. W.

Environmental Protection Agency, Cincinnati, OH. Risk Reduction
Engineering Lab.

Corp. Source Codes: 034122084;

Sponsor: PEER Consultants, Inc., Dayton, OH.

Report No.: EPA/600/J-90/414

c1990 9p

Languages: English Document Type: Journal article

Journal Announcement: GRAI9113

Pub. in Jnl. of Air Waste Management Association, v40 n12 p1670-1676 Dec
90. Prepared in cooperation with PEER Consultants, Inc., Dayton, OH.

NTIS Prices: PC A02/MF A01

Country of Publication: United States

The Superfund Innovative Technology Evaluation (SITE) program was authorized as part of the 1986 amendments to the Superfund legislation. It represents a joint effort between the U.S. EPA's Office of Research and Development and Office of Solid Waste and Emergency Response. The program is designed to assist and encourage the development of waste treatment technologies that would contribute to more solutions to our hazardous waste problems. Recently, EPA, through the SITE program, issued a work assignment to assess the 'state-of-the-art' of electrokinetically enhanced contaminant removal from soils. Prior research efforts, both laborator and field, have demonstrated the electro-osmosis has the potential to be effective in facilitating the removal of certain types of hazardous wastes from soils.

Particularly encouraging results have been achieved with inorganics in fine grained soils where more traditional removal alternatives are less effective. Although the results of various studies suggest that electrokinetics is a promising technology, further testing is needed at both the laboratory and field levels to fully develop this technology for site remediation. A conceptual test program is presented based on best available data which incorporates system design and operating parameters used in previous applications of this technology in the use of electrokinetics treatment as a remediation technique at hazardous waste sites. (Copyright (c) 1990--Air & Waste Management Association.

Record - 24

<DIALOG File 6: >

1524071 NTIS Accession Number: AD-A230 432/7/XAB
Post Remedial Action Report, Lansdowne Radioactive Residence Complex,
Dismantlement/Removal Project. Volume 4. Radiological Oversight and
Certification

(Report for the period 1 Aug 88-24 Jul 89)

Sholeen, C. M. ; Munyon, W. J.

Argonne National Lab., IL. Environment, Safety and Health Dept.

Corp. Source Codes: 001960027; 422521

Report No.: ANL-ESH/TS-90/010-VOL-4; CENAB-CO-HTW/90-01/EPA(S)

Jun 90 342p

Languages: English

Journal Announcement: GRAI9112

See also Volume 1, AD-A230 429.

NTIS Prices: PC A15/MF A02

Country of Publication: United States

During the period 1924-1944, a Univ. of Pennsylvania physics professor was engaged in the commercial production of radium sources for medical use. As a result of the radium enrichment activities, the entire residence, the surrounding land, and the adjoining residence became contaminated. In August 1985, this site was officially added to USEPA's list of hazardous sites targeted for cleanup (Superfund). Onsite radiological overview was provided to the U.S. Army Corps of Engineers for the remediation activities. The oversight included radiological surveying, laundry/waste water sampling, air sampling and logging of contamination in the soil. Additional oversight responsibility included verification that the soil remaining on the site, adjacent to the site and under the sewer line, as well as backfill soil were below the cleanup criterion of 5 pCi/g above the natural Ra-226 background level of 1.5 pCi/g. The exposure rate measurements from the restored site ranged from 8 to 11 micro-R/h, typical of background levels in this area. This report provides documentation that the cleanup criterion of 5 pCi/g of Ra-226 above background has been met. (MM)

Record - 25

<DIALOG File 6: >

1524070 NTIS Accession Number: AD-A230 431/9/XAB
Post Remedial Action Report, Lansdowne Radioactive Residence Complex,
Dismantlement/Removal Project. Volume 3. Radiological Closeout
Documentation

(Final rept. 2 Jun 88-12 Oct 89)

Trujillo, P.

Chem-Nuclear Systems, Inc., Columbia, SC.

Corp. Source Codes: 099735000; 422523

Report No.: CENAB-CO-HTW/90-01/EPA(S)-VOL-3

Jun 90 306p

Languages: English

Journal Announcement: GRAI9112

See also Volume 4, AD-A230 432.

NTIS Prices: PC A14/MF A02

Country of Publication: United States

Contract No.: DACW45-88-C-0213

The radiological closeout report was prepared to document the successful completion of final remediation of a radium contaminated duplex residence and associated properties located in Lansdowne, Pennsylvania. This report addresses the efforts to provide radiological coverage of the project from initial award through final verification. The report includes plan preparation, training, personnel monitoring, air sampling, environmental compliance, radiological surveys, verification of cleanup to allowable limits, radiological techniques, soil sampling and verification methods utilized. The report is formatted by major task, with associated data provided for each major task or division of work. (MM)

Record - 26

<DIALOG File 6: >

1524069 NTIS Accession Number: AD-A230 430/1/XAB

Post Remedial Action Report, Lansdowne Radioactive Residence Complex, Dismantlement/Removal Project. Volume 2. Contractor Operations

(Final rept. 2 Jun 88-12 Oct 89)

Huston, R. L.

Chem-Nuclear Systems, Inc., Columbia, SC.

Corp. Source Codes: 099735000; 422523

Report No.: CENAB-CO-HTW/90-01/EPA(S)-VOL-2

Jun 90 151p

Languages: English

Journal Announcement: GRAI9112

See also Volume 3, AD-A230 431. Includes maps.

NTIS Prices: PC A08/MF A01

Country of Publication: United States

Contract No.: DACW45-88-C-0213

The operations closeout report was prepared to document the successful completion of final remediation of the USEPA Superfund Cleanup of a radium-contaminated duplex residence and associated properties located in Lansdowne, Pennsylvania. This report addresses the efforts to perform the residence dismantlement, soil remediation, and restoration of the site to a useable condition. It covers the period from contract award through all stages of project conduct, including plan preparation, mobilization, initial site preparation, site clearing and security arrangements, dismantlement of structures, excavation of contaminated soils, transportation and disposal of radioactively contaminated and hazardous wastes, final verification of compliance to release criteria, site restoration and demobilization. Pertinent data such as final waste volumes, results of testing, and site configuration prior to, during and post

remediation are included. The site organizational structure, individual responsibilities and subcontractors utilized are provided. (MM)

Record - 27

<DIALOG File 6: >

1524068 NTIS Accession Number: AD-A230 429/3/XAB
Post Remedial Action Report, Lansdowne Radioactive Residence Complex,
Dismantlement/Removal Project. Volume 1. Government Operations
(Final rept. 1 Aug 88-24 Jul 89)

Wickboldt, W. C.

Corps of Engineers North Atlantic, Baltimore, MD. Construction Div.

Corp. Source Codes: 099737001; 422522

Report No.: CENAB-CO/HTW/90-1/EPA(S)-VOL-1

Jun 90 289p

Languages: English

Journal Announcement: GRAI9112

See also Volume 2, AD-A230 430.

NTIS Prices: PC A13/MF A02

Country of Publication: United States

Contract No.: DACW-45-88-C-0213

The Lansdowne radioactive residence complex and 250' of municipal sewer became contaminated during the period 1924-1944 by radium processing. Clean-up of the site necessitated the removal of contaminated rubble generated by building and sewer dismantlement, and of radioactive soil that became contaminated because waste products from the radium processing activity were buried in the ground around the site. Prior to remediation, radium levels in the soil ranged as high as 700 pCi/g; following remediation, radium levels had been reduced to no greater than 5 pCi/g above the local background of 2.5 pCi/g. Following removal of contamination, the site was backfilled to near original grade and restored as a grassed lot. A replacement sewer line was constructed. (MM)

Record - 28

<DIALOG File 6: >

1493612 NTIS Accession Number: DE90006310/XAB

Long-term climate change assessment task of the protective barrier development program for low-level waste site remediation at the Hanford Site, Washington

Petersen, K. L.

Westinghouse Hanford Co., Richland, WA.

Corp. Source Codes: 040415000; 9500104

Sponsor: Department of Energy, Washington, DC.

Report No.: WHC-SA-0808; CONF-900406-22

Jan 90 6p

Languages: English Document Type: Conference proceeding

Journal Announcement: GRAI9014; ERA9026

International conference for high-level radioactive waste management, Las Vegas, NV (USA), 8-12 Apr 1990. Sponsored by Department of Energy, Washington, DC.

Portions of this document are illegible in microfiche products.

NTIS Prices: PC A02/MF A01

Country of Publication: United States

Contract No.: AC06-87RL10930

A study plan is being developed to guide a multiyear program to assess long-term climate change and optimize the design of protective barriers. A protective barrier alternative is being considered for the disposal of some low-level radioactive defense waste stored near the surface at the Hanford Site, Washington. These barriers are being designed to limit movement of radionuclides and other contaminants to the accessible environment for at least 1000 years and possibly as long as 10,000 years. A stepwise approach to climatic data acquisition will be relied on in obtaining needed information for concurrent barrier tasks, and in developing a local climate forecast model. This model will need to couple past climate patterns with models of regional and global climate drivers to provide bounding conditions for barrier performance assessment analyses. 9 refs., 3 figs.

Record - 29

<DIALOG File 6: >

1486116 NTIS Accession Number: PB90-271867/XAB

Evaluation of Treatment Technologies in the Natural Gas Industry: Production Water/Waste Management and Site Remediation. Volume 3. Topical Report September 1988-October 1989

Tallon, J. T. ; Fillo, J. P. ; Bratina, J. E. ; Peach, L. A. ; Halapin, T.

ENSR, Pittsburgh, PA.

Corp. Source Codes: 095280000;

Sponsor: Remediation Technologies, Inc., Pittsburgh, PA.; Gas Research Inst., Chicago, IL.

Report No.: GRI-89/0263.3

May 90 395p

Languages: English

Journal Announcement: GRAI9023

See also Volume 2, PB90-271859. Prepared in cooperation with Remediation Technologies, Inc., Pittsburgh, PA. Sponsored by Gas Research Inst., Chicago, IL.

Also available in set of 3 reports PC E99/MF E99, PB90-271834.

NTIS Prices: PC A17/MF A03

Country of Publication: United States

Contract No.: GRI-5084-253-1117; GRI-5086-254-1334

The report examines the technologies that can potentially be applied to treating production waters and wastes from natural gas industry operations, and those that may be suitable for remediating sites affected by former operations. The information provided in the report is intended to assist the natural gas industry to select appropriate environmental management strategies. Candidate technologies were considered in the evaluation for their applicability to treatment of specific production water/waste streams, ground water and soil, and/or the constituents known or suspected to be present in the media. Where available, performance and economic data directly related to the use of the technology application within the gas industry are identified and compiled for referencing. Performance and economic data from closely related technology application are also selectively included. Information identified from the evaluation is compiled on a computer data base system (Paradox) in two levels of detail. Level I presents a general overview of each technology examined, and Level II presents performance and economic information.

Record - 30

<DIALOG File 6: >

1486115 NTIS Accession Number: PB90-271859/XAB

Evaluation of Treatment Technologies in the Natural Gas Industry:

Production Water/Waste Management and Site Remediation. Volume 2. Topical Report September 1988-October 1989

Tallon, J. T. ; Fillo, J. P. ; Bratina, J. E. ; Peach, L. A. ; Halapin, T.

ENSR, Pittsburgh, PA.

Corp. Source Codes: 095280000;

Sponsor: Remediation Technologies, Inc., Pittsburgh, PA.; Gas Research Inst., Chicago, IL.

Report No.: GRI-89/0263.2

May 90 196p

Languages: English

Journal Announcement: GRAI9023

See also Volume 1, PB90-271842 and Volume 3, PB90-271867. Prepared in cooperation with Remediation Technologies, Inc., Pittsburgh, PA. Sponsored by Gas Research Inst., Chicago, IL.

Also available in set of 3 reports PC E99/MF E99, PB90-271834.

NTIS Prices: PC A09/MF A02

Country of Publication: United States

Contract No.: GRI-5084-253-1117; GRI-5086-254-1334

The report examines the technologies that can potentially be applied to treating production waters and wastes from natural gas industry operations, and those that may be suitable for remediating sites affected by former operations. The information provided in the report is intended to assist the natural gas industry to select appropriate environmental management strategies. Candidate technologies were considered in the evaluation for their applicability to treatment of specific production water/waste streams, ground water and soil, and/or the constituents known or suspected to be present in these media. Where available, performance and economic data directly related to the use of the technology application within the gas industry are identified and compiled for referencing. Information identified from the evaluation is compiled on a computer data base system (Paradox) in two levels of detail.

Record - 31

<DIALOG File 6: >

1486114 NTIS Accession Number: PB90-271842/XAB

Evaluation of Treatment Technologies in the Natural Gas Industry:

Production Water/Waste Management and Site Remediation. Volume 1. Topical Report September 1988-October 1989

Tallon, J.T. ; Fillo, J. P. ; Bratina, J. E. ; Peach, L. A. ; Halapin, T.

ENSR, Pittsburgh, PA.

Corp. Source Codes: 095280000;

Sponsor: Remediation Technologies, Inc., Pittsburgh, PA.; Gas Research Inst., Chicago, IL.

Report No.: GRI-89/0263.1

May 90 243p

Languages: English

Journal Announcement: GRAI9023

See also Volume 2, PB90-271859. Prepared in cooperation with Remediation Technologies, Inc., Pittsburgh, PA. Sponsored by Gas Research Inst., Chicago, IL.

Also available in set of 3 reports PC E99/MF E99, PB90-271834.

NTIS Prices: PC A11/MF A02

Country of Publication: United States

Contract No.: GRI-5084-253-1117; GRI-5086-254-1334

The report examines the technologies that can potentially be applied to treating production waters and wastes from natural gas industry operations, and those that may be suitable for remediating sites affected by former operations. The information provided in the report is intended to assist the natural gas industry to select appropriate environmental management strategies. Candidate technologies were considered in the evaluation for their applicability to treatment of specific production water/waste streams, ground water and soil, and/or the constituents known or suspected to be present in these media. Where available, performance and economic data directly related to the use of the technology application within the gas industry are identified and compiled for referencing. Information identified from the evaluation is compiled on a computer data base system (Paradox) in two levels of detail.

Record - 32

<DIALOG File 6: >

1486113 NTIS Accession Number: PB90-271834/XAB

Evaluation of Treatment Technologies in the Natural Gas Industry: Production Water/Waste Management and Site Remediation. Topical Reports September 1988-October 1989

ENSR, Pittsburgh, PA.

Corp. Source Codes: 095280000;

Sponsor: Remediation Technologies, Inc., Pittsburgh, PA.; Gas Research Inst., Chicago, IL.

May 90 834p-in 3v

Languages: English

Journal Announcement: GRAI9023

Set includes PB90-271842-PB90-271867. Prepared in cooperation with Remediation Technologies, Inc., Pittsburgh, PA. Sponsored by Gas Research Inst., Chicago, IL.

NTIS Prices: PC E99/MF E99

Country of Publication: United States

No abstract available.

Record - 33

<DIALOG File 6: >

1449007 NTIS Accession Number: DE90003635/XAB

Observational Approach for Site Remediation at Federal Facilities

Myers, R. S. ; Gianti, S. J.

Battelle Pacific Northwest Labs., Richland, WA.

Corp. Source Codes: 048335000; 9512268

Sponsor: Department of Energy, Washington, DC.

Report No.: PNL-SA-17455; CONF-8911152-1

25

Nov 89 14p

Languages: English Document Type: Conference proceeding

Journal Announcement: GRAI9011; NSA0000

10. HMCRI's national conference and exhibition, Washington, DC, USA, 27-29 Nov 1989, Portions of this document are illegible in microfiche products.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

Contract No.: AC06-76RL01830

The observational approach, developed by geotechnical engineers to cope with the uncertainty associated with subsurface construction such as tunnels and dams, can be applied to hazardous waste site remediation. During the last year, the observational approach has gained increasing attention as a means of addressing the uncertainties involved in site remediation. In order to evaluate the potential advantages and constraints of applying the observational approach to site restoration at federal facilities, a panel of scientists and engineers from Pacific Northwest Laboratory and CH2M Hill was convened. Their review evaluated potential technical and institutional advantages and constraints that may affect the use of the observational approach for site remediation. This paper summarizes the panel's comments and conclusions about the application of the observational approach to site remediation at federal facilities. Key issues identified by the panel include management of uncertainty, cost and schedule, regulations and guidance, public involvement, and implementation. 5 refs.

Record - 34

<DIALOG File 6: >

1382283 NTIS Accession Number: DE89004907/XAB

Low-Level Liquid Waste Disposal Site Remediation Technology Development at the Hanford Site

Phillips, S. J. ; Relyea, J. F.

Westinghouse Hanford Co., Richland, WA.

Corp. Source Codes: 040415000, 9500104

Sponsor: Department of Energy, Washington, DC.

Report No.: WHC-SA-0039; CONF-870859-32

Oct 87 12p

Languages: English Document Type: Conference proceeding

Journal Announcement: GRAI8912; NSA1400

Annual low-level radioactive waste management program conference, Denver, CO, USA, 25 Aug 1987.

Portions of this document are illegible in microfiche products.

NTIS Prices: PC A03/MF A01

Country of Publication: United States

Contract No.: AC06-87RL10930

Westinghouse Hanford Company is developing technologies supporting long-term physical stabilization and isolation of liquid waste materials in underground waste disposal crib and caisson structures. Prototype equipment and methodologies are being developed to dynamically consolidate and/or inject durable materials into and proximal to these structures. To date, testing, development, and demonstration of a mobile in situ waste treatment system for site remediation of liquid waste disposal sites has been completed. Continued testing and development activities are in progress for

in situ treatment of contaminated, industrial, solid low-level waste materials. Conceptual design activities have also been initiated to develop an injection system for application to low-level waste underground tank and vault remediation. 10 refs., 2 figs. (ERA citation 14:014424)

Record - 35

<DIALOG File 6: >

1236760 NTIS Accession Number: PB87-142121/XAB
Reclamation and Redevelopment of Contaminated Land. Volume 1. U.S. Case Studies

(Final rept. Oct 83-Jun 85)

Kingsbury, G. L. ; Ray, F. M.

Research Triangle Inst., Research Triangle Park, NC.

Corp. Source Codes: 045968000

Sponsor: Environmental Protection Agency, Cincinnati, OH. Hazardous Waste Engineering Research Lab.

Report No.: EPA/600/2-86/066

Dec 86 199p

Languages: English

Journal Announcement: GRAI8709

Sponsored by Environmental Protection Agency, Cincinnati, OH. Hazardous Waste Engineering Research Lab.

NTIS Prices: PC A09/MF A01

Country of Publication: United States

Contract No.: EPA-68-03-3149

The principal objective of the study was to document with case studies relationships between site remediation methods, cleanliness criteria, and redevelopment land uses. Sixteen uncontrolled hazardous waste sites were selected for detailed study. For each of these sites, remedial actions have been undertaken or are planned with some upgraded redevelopment of the property in mind. Redevelopments include single- and multi-family residential, recreational, commercial, institutional, and light industrial land uses. Two distinctly different types of redevelopment efforts were encountered--public-initiated projects and developer-initiated projects.

Record - 36

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03799466 E.I. No: EIP94021203976

Title: Importance of biological testing in the assessment of metal contamination and site remediation: A case study

Author: Lee, Charles R.; Simmers, John W.; Brandon, Dennis L.; Folsom, Bobby L. Jr.

Corporate Source: United States Army Engineer Waterways Experiment Station, Vicksburg, MS, USA

Conference Title: Proceedings of the Symposium on Environmental Toxicology and Risk Assessment: Aquatic, Plant, and Terrestrial

Conference Location: Pittsburgh, PA, USA

Sponsor: ASTM

E.I. Conference No.: 18159

Source: ASTM Special Technical Publication n 1216 1993. Publ by ASTM, Philadelphia, PA, USA. p 681-687

Publication Year: 1993

CODEN: ASTTA8 ISSN: 0066-0558 ISBN: 0-8031-1485-0

Language: English

Document Type: CA; (Conference Article) Treatment: G; (General Review); X; (Experimental)

Journal Announcement: 9403W4

Abstract: The nature and extent of heavy metal contamination was assessed using plant, earthworm, and clam bioassays in conjunction with soil sample analyses. The study site consisted of terrestrial uplands, transition zones and wetlands in both freshwater and brackishwater environments contaminated with arsenic, cadmium, copper, lead, zinc, and selenium as a result of uncontrolled discharges of chemical wastes. Test data from the bioassays were used in conjunction with soil chemical analyses to determine the specific areas of contamination and the need for remedial action.

Laboratory plant and earthworm bioassay results and field clam bioassay results indicated potential migration of hazardous chemicals from soil into foodwebs associated with the site. Field collected mice confirmed bioassay test results and showed bioaccumulation of cadmium and lead in some of those areas implicated by laboratory bioassay test results. Bioassays gave a good indication of the nature and extent of chemical migration into foodwebs associated with the site. (Author abstract) 7 Refs.

Record - 37

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03777014 E.I. No: EIP93121145992

Title: Demonstrating novel processes for remediation in the field

Author: Tucker, Philip M.

Corporate Source: UWE, Bristol, Engl

Source: Nuclear Engineering International v 38 n 469 Aug 1993. p 30-31

Publication Year: 1993

CODEN: NEINBF ISSN: 0029-5507

Language: English

Document Type: JA; (Journal Article) Treatment: G; (General Review)

Journal Announcement: 9402W5

Abstract: Bradtec has recently developed several new technologies,

including the ACTDECON and MAGSEP processes, for decontaminating water and land. They have been demonstrated in conjunction with RUST Remedial Services and Argonne National Laboratory in the USA, and the US Government, through the Office of Technology Development, has sponsored Treatability and Proof of Process Tests for laboratory and pilot scale testing. These technologies are now being optimized for field demonstrations at several sites in the USA in readiness for full-scale operations anticipated to begin in 1994. (Author abstract)

Record - 38

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03728662 E.I. No: EIP93081055770

Title: Methodology for managing remediation of sites containing soil contamination

Author: Rutz, Eugene E.; Ijaz, Talaat; Wood, Raymond P.; Eckart, Roy E.

Corporate Source: Univ of Cincinnati, Cincinnati, OH, USA

Conference Title: Energy-Sources Technology Conference and Exhibition

Conference Location: Houston, TX, USA

E.I. Conference No.: 18672

Source: American Society of Mechanical Engineers (Paper) 1993. Publ by ASME, New York, NY, USA. p 1-6 93-PET-19

Publication Year: 1993

CODEN: ASMSA4 ISSN: 0402-1215

Language: English

Document Type: CA; (Conference Article) Treatment: G; (General Review)

Journal Announcement: 9312W2

Abstract: A methodology for evaluating various alternatives possible for site remediation is presented. Site characterization, soil cleaning considerations, restoration alternatives, and potential site is assessed using pathway analysis. Pathway analysis can be used to guide the remediation strategy to minimize costs while obtaining an acceptable cleanup level. (Author abstract) Refs.

Record - 39

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03705404 E.I. No: EIP93091080744

Title: Modelling studies of gas venting and steam injection for NAPL site remediation

Author: Forsyth, Peter A.

Corporate Source: Univ of Waterloo, Waterloo, Ont, Can

Conference Title: Proceedings of the Symposium on Engineering Hydrology

Conference Location: San Francisco, CA, USA

Sponsor: Hydraulics Division of the ASCE

E.I. Conference No.: 18947

Source: Proceedings of the Symposium on Engineering Hydrology Proc Symp Eng Hydrol 1993. Publ by ASCE, New York, NY, USA, Ont. p 958-963

Publication Year: 1993

ISBN: 0-87262-921-X

Language: English

Document Type: CA; (Conference Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 9311W1

Abstract: A fully coupled, fully implicit method for simulating gas injection and steam injection for in situ remediation of sites contaminated with volatile NAPL is presented. Numerical results are given for some two dimensional axisymmetric scenarios. (Author abstract) refs.

Record - 40

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03671580 E.I. No: EIP93061012371
Title: Roadmapping: a management tool
Author: Blalock, Larry; McAllister, Audrey; Noblett, Patrick
Corporate Source: U.S. Dep of Energy, Germantown, MD, USA
Conference Title: Proceedings of the 4th Annual International Conference
on High Level Radioactive Waste Management
Conference Location: Las Vegas, NV, USA
Sponsor: ASCE; ANS
E.I. Conference No.: 18620
Source: High Level Radioactive Waste Management Proc 4 Annu Int Conf High
Level Radioact Waste Manage 1993. Publ by ASCE, New York, NY, USA. p
1633-1637
Publication Year: 1993
ISBN: 0-87262-950-3
Language: English
Document Type: CA; (Conference Article) Treatment: A; (Applications)
Journal Announcement: 9309W2
Abstract: Roadmapping is a process used by the U.S. Department of Energy (DOE) Office of Environmental Restoration and Waste Management (EM) to illustrate issue-based planning activities necessary for achieving final waste disposal, completing site remediation, and bringing waste operations into compliance with applicable regulations. Roadmaps are developed by following a systematic planning process that focuses on issues identification, root-cause analysis, and issue resolution. Initially, roadmaps were developed at the installation level to provide the site and headquarters with a common planning tool. In 1992, 36 sites participated in the roadmap process. Review of these roadmaps has highlighted areas that need improvement. The Director of Planning, EM-14, transmitted a memo to the sites highlighting areas for improvement. One of these areas was incorporation of transportation activities. DOE's Transportation Management Division (TMD) issued a Headquarters (HQ) Transportation Roadmap in September 1992. This document was the first Headquarters Programmatic Roadmap to be developed. The Headquarters Transportation Roadmap is a 'living' document, which will be updated annually to reflect changes in the organization, and factors influencing TMD's program. The goals in developing the HQ Transportation Roadmap included: providing an avenue to raise transportation issues; a baseline for TMD planning; assisting site transportation personnel to become involved with the EM Roadmap Process; and integrating transportation planning across program lines. (Author abstract) 2 Refs.

Record - 41

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03668347 E.I. No: EIP93040758036
Title: Exposure/risk-based corrective action approach for

petroleum-contaminated sites

Corporate Source: Shell Development Co

Conference Title: Proceedings of the SPE/EPA Exploration and Production Environmental Conference

Conference Location: San Antonio, TX, USA

E.I. Conference No.: 18306

Source: Proceedings of the SPE/EPA Exploration and Production

Environmental Conference Proc SPE EPA Explore Prod Environ Conf 1993. Publ by Society of Petroleum Engineers (SPE), P.O. Box 833836, Richardson, TX, USA. p 403-415

Publication Year: 1993

Language: English

Document Type: CA; (Conference Article) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9309W1

Abstract: A practical and easy to use exposure/risk-based methodology for guiding corrective action activities at petroleum contaminated sites has been developed. In this approach, site characterization, assessment of potential beneficial uses, exposure/risk characterization, site prioritization, and selection of corrective action alternatives are integrated into a series of worksheets. These worksheets guide the user through the necessary steps to derive site-specific target clean-up levels and the corresponding appropriate corrective action. The risk characterization activities discussed here focus on exposure to groundwater, which is expected to be the pathway of greatest concern at the majority of petroleum contaminated sites. However, it is not difficult to see how this worksheet based approach can be extended to other pathways. The worksheets comprise a final document that is a valuable tool for regulators, contractors, and responsible parties to consistently prioritize sites and develop corrective action plans. This approach is currently being reviewed by several state agencies. In addition, the approach has been presented to the United States Environmental Protection Agency (EPA), and the American Society for Testing in Materials (ASTM). (Author abstract) refs.

Record - 42

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03659169 E.I. No: EIP93071018203

Title: Fiber optic chemical sensors - an overview

Author: Grey, Alan E.; Partin, Judy K.

Corporate Source: Idaho Natl Engineering Lab, Idaho Falls, ID, USA

Conference Title: Symposium on Leak Detection for Underground Storage Tanks

Conference Location: New Orleans, LA, USA

Sponsor: ASTM

E.I. Conference No.: 18644

Source: ASTM Special Technical Publication n 1161 1993. Publ by ASTM, Philadelphia, PA, USA. p 105-114

Publication Year: 1993

CODEN: ASTTA8 ISSN: 0066-0558 ISBN: 0-8031-1858-9

Language: English

Document Type: CA; (Conference Article) Treatment: G; (General Review)

Journal Announcement: 9308W3

Abstract: In a span of approximately 20 years, fiber optic sensing has grown from a laboratory oddity to a viable analytical field technique for the detection and monitoring of a wide variety of analytes. One of the reasons for this rapid growth is the range of techniques that can be used for the detection of species. These include changes in absorption, reflection, refraction, phase, polarization, and fluorescence. In general, any chemical or physical reaction that will perturb the light transmission through the optical fiber can be used as the basis for a fiber optic detector. Examples of fiber optic chemical sensors are presented and their advantages over conventional devices are discussed. (Author abstract) 14 Refs.

Record - 43

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03659167 E.I. No: EIP93071018201

Title: Analysis of UST leak vapor diffusion and liquid build-up

Author: Schreiber, Robert P.; Rosenberg, Myron S.

Corporate Source: Camp Dresser & McKee Inc, Cambridge, MA, USA

Conference Title: Symposium on Leak Detection for Underground Storage Tanks

Conference Location: New Orleans, LA, USA

Sponsor: ASTM

E.I. Conference No.: 18644

Source: ASTM Special Technical Publication n 1161 1993. Publ by ASTM, Philadelphia, PA, USA. p 73-89

Publication Year: 1993

CODEN: ASTTA8 ISSN: 0066-0558 ISBN: 0-8031-1858-9

Language: English

Document Type: CA; (Conference Article) Treatment: A; (Applications); T; (Theoretical)

Journal Announcement: 9308W3

Abstract: The need for improved leak detection and corrective action has prompted research into the movement of hydrocarbon vapors from leaking underground storage tanks (USTs) as well as the build-up of liquid hydrocarbon on the water table. This research has included the development of two evaluation techniques, one for simulating vapor diffusion from an UST leak and another for simulating the mounding of leaked hydrocarbon liquid. Both techniques are designed to produce approximate estimates of hydrocarbon movement and build-up, and as such are intended to be used in the early stages of site remediation planning and monitoring. The result of the research is a set of response curves and analytical techniques that can be used in designing monitoring systems and in performing site clean-ups. (Author abstract) 12 Refs.

Record - 44

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03631676 E.I. No: EIP93050797788

Title: Experimental comparisons in petroleum site remediation

Author: Blackburn, J.W.; Robbins, W.K.; Prince, R.C.; Harner, E.J.; Clark, J.R.; Atlas, R.M.; Wilkinson, J.B.

Corporate Source: Exxon Research and Engineering Co, Annandale, NJ, USA

Conference Title: Symposium on Bioremediation and Bioprocessing presented

at the 205th National Meeting of the American Chemical Society
Conference Location: Denver, CO, USA
E.I. Conference No.: 18432
Source: Preprints - Division of Petroleum Chemistry, American Chemical Society v 38 n 2 Mar 1993. Publ by ACS, Books & Journals Division, Washington, DC, USA. p 254-259
Publication Year: 1993
CODEN: ACPCAT ISSN: 0569-3799
Language: English
Document Type: CA; (Conference Article) Treatment: A; (Applications); G; (General Review); X; (Experimental)
Journal Announcement: 9307W1
Abstract: Environmental remediation technology has evolved into one of the Nation's major enterprises in scarcely more than a decade. Cost projections for site remediation in this country have exceeded one trillion dollars distributed over decades into the future. Citizens have demanded a clean environment along with economic prosperity and scientists, engineers and other technologists have risen to the challenge - accelerating technology transfer and development with a significant number of successes at field-scale, but with a related number of activities where something less than complete success was achieved. (Edited author abstract) 4 Refs.

Record - 45

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03623495 E.I. No: EIP93030742238
Title: Horizontal systems technology for shallow-site remediation
Author: Karisson, Haraldum
Corporate Source: Eastman Christensen Environmental Systems, Houston, TX, USA
Source: JPT, Journal of Petroleum Technology v 45 n 2 Feb 1993. p 160-165
Publication Year: 1993
CODEN: JPTJAM ISSN: 0149-2136
Language: English
Document Type: JA; (Journal Article) Treatment: G; (General Review)
Journal Announcement: 9306W4
Abstract: Innovations in drilling and completion technology for horizontal wellbores maximize the hydrologic benefits of horizontal wells for aquifer remediation. In many hydrologic scenarios, horizontal wells exhibit groundwater flow characteristics, drawdown distribution, and contaminant capture capabilities superior to those of vertical wells. In addition, comparison of installation, operation, and maintenance costs for vertical and horizontal groundwater-recovery systems reveals substantial savings engendered by horizontal wells, despite higher drilling costs. Development of a casing drilling and completion system, described in detail in this paper, has allowed the environmental industry to begin reaping the benefits of horizontal wells, which include safer, more efficient remediation operations. (Author abstract) 4 Refs.

Record - 46

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03620002 E.I. No: EIP92120656123
Title: New apparatus for the evaluation of electro-kinetic processes in

hazardous waste management

Author: Yeung, Albert T.; Sadek, Salah M.; Mitchell, James K.

Corporate Source: Texas A&M Univ, College Station, TX, USA

Source: Geotechnical Testing Journal v 15 n 3 Sep 1992. p 207-216

Publication Year: 1992

CODEN: GTJODJ ISSN: 0149-6115

Language: English

Document Type: JA; (Journal Article) Treatment: G; (General Review); T; (Theoretical)

Journal Announcement: 9306W3

Abstract: Possible uses of electro-kinetics for hazardous waste site remediation are being investigated. This paper describes a new apparatus which has been specifically designed, fabricated, and assembled to evaluate the viability, feasibility, practicality, and potential costs of these conceivable techniques experimentally. Results of studies on the existence of electro-osmotic flow in compacted clay and the electro-kinetic barrier to contaminant transport are used to illustrate the types of information that can be obtained by the apparatus. (Author abstract) 12 Refs.

Record - 47

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03618152 E.I. No: EIP92100607909

Title: Potential costs to utilities for hazardous waste site remediation

Author: Emmert, Michael; Sieracki, Richard; Egan, Joseph

Corporate Source: Peterson Consulting Ltd Partnership, Chicago, IL, USA

Conference Title: Proceedings of the 54th Annual Meeting of the American Power Conference

Conference Location: Chicago, IL, USA

Sponsor: Illinois Inst of Technology

E.I. Conference No.: 16838

Source: Proceedings of the American Power Conference v 54 pt 2 1992. Publ by Illinois Inst of Technology, Chicago, IL, USA. p 1159-1163

Publication Year: 1992

CODEN: PAPWA2 ISSN: 0097-2126

Language: English

Document Type: CA; (Conference Article) Treatment: A; (Applications); G; (General Review); M; (Management Aspects)

Journal Announcement: 9306W2

Abstract: Environmental legislation and regulations have added increased business and financial risks to public utilities and corporations in general. The presence of such risks has become increasingly apparent to utility management and other business leaders over the last several years in a variety of different ways. The interpretation of the various federal and state regulations, together with existing contract and other laws, can pose uncertainty as to what amount of environmental liability and cleanup costs will be allocated to the parties involved with hazardous waste sites. In response, many companies are redefining business cultures, re-examining production and other operating methods, and reviewing past activities in an attempt to respond to and comply with present, as well as anticipated future, environmental standards and requirements. In this climate of change and uncertainty, it is of paramount importance for corporations to minimize both the consequences of current environmental challenges and future environmental liability exposure while continuing to effectively operate

their businesses. 20 Refs.

Record - 48

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03608240 E.I. Monthly No: EIM9305-029731

Title: Application of probabilistic cost risk analysis in economic decision making for hazardous waste site remediation.

Author: Schultz, M.; Pavlou, S.

Corporate Source: Ebasco Environmental, Bellevue, WA, USA

Conference Location: Denver, CO, USA

E.I. Conference No.: 17896

Source: Risk Assessment/Management Issues in the Environmental Planning of Mines Risk Assess Manage Issues Environ Plann Min. Publ by Soc for Mining, Metallurgy & Exploration Inc, Littleton, CO, USA. p 137-141

Publication Year: 1992

ISBN: 0-87335-115-0

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications); G; (General Review); T; (Theoretical)

Journal Announcement: 9305

Abstract: The cost of remediation often drives the selection of the preferred remedial alternative at hazardous waste sites. The use of probabilistic cost/risk analyses can aid in predicting costs of remedial alternatives. Three types of information are discussed in performing cost/risk analyses: (1) data on the quantity of contamination versus the contaminant concentration; (2) unit costs of remediation for the remedial alternatives; and (3) risk to contaminant concentration relationships.

Cost/risk evaluations are performed on a site-by-site basis, to account for combined risks of different contaminants and differences in quantity to be remediated versus contaminant concentration. The cost/risk analysis produces a graph of risk versus cost for each of the remedial alternatives. These costs are then compared to facilitate selection of a preferred alternative. An example of comparison of alternatives is illustrated for a historic coal gasification site. (Author abstract)

Record - 49

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03590339 E.I. Monthly No: EIM9304-021108

Title: Update on the use of transportable circulating bed combustors for site remediation.

Author: Diot, Harold, R.

Corporate Source: Ogden Environmental Services

Conference Title: Proceedings of the 36th Annual Technical Meeting of the Institute of Environmental Sciences

Conference Location: New Orleans, LA, USA Conference Date: 1990 Apr 23-27

E.I. Conference No.: 16762

Source: Proceedings, Annual Technical Meeting - Institute of Environmental Sciences. Publ by Inst of Environmental Sciences, Mount Prospect, IL, USA. p 49-53

Publication Year: 1990

CODEN: IESPAF ISSN: 0073-9227 ISBN: 1-877862-00-2

Language: English

Document Type: PA; (Conference Paper) Treatment: G; (General Review)

Journal Announcement: 9304

Abstract: During 1989, Ogden Environmental Services Inc. provided full-service hazardous waste site remediation services to clients throughout the U.S. and Canada. The company is conducting site remediation projects that will thermally treat over 100,000 tons of contaminated soil, using the proprietary transportable circulating bed combustor (CBC), an advanced fluidized bed incinerator. Two transportable CBC units are currently involved in major site remediation projects. One unit is thermally cleaning soil contaminated by a leaking underground fuel oil tank at a site in central California, while the other unit is purifying PCB-contaminated soils in the Kenai Wildlife Refuge in Alaska.

Record - 50

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03590329 E.I. Monthly No: EIM9304-021098

Title: Coping with remedial compliance.

Author: Rozmus, Gary, A.

Corporate Source: Eder Associates

Conference Title: Proceedings of the 36th Annual Technical Meeting of the Institute of Environmental Sciences

Conference Location: New Orleans, LA, USA Conference Date: 1990 Apr 23-27

E.I. Conference No.: 16762

Source: Proceedings, Annual Technical Meeting - Institute of Environmental Sciences. Publ by Inst of Environmental Sciences, Mount Prospect, IL, USA. p 1-4

Publication Year: 1990

CODEN: IESPAF ISSN: 0073-9227 ISBN: 1-877862-00-2

Language: English

Document Type: PA; (Conference Paper) Treatment: E; (Economic/Cost Data/Market Survey)

Journal Announcement: 9304

Abstract: SARA Section 121 (b) indicates a Federal preference for remedial actions at Superfund sites that incorporate treatment to permanently and significantly reduce the volume, toxicity or mobility of hazardous substances and contaminants to the maximum extent possible. Along with this preference, SARA indicates that remedial actions should satisfy the often mutually exclusive criteria of cost-effectiveness and permanence through the vehicle of alternative treatment or resource recovery technologies. SARA 121 requirements have compounded the problem facing the CERCLA 106 respondent, because they have reduced the possibility of eliminating virtually all high-technology remedial actions on the basis of costs. Various studies have estimated the 'permanent solutions' cost multiplier at between 3 to 10 compared to pre-SARA remedial costs. A streamlining policy would reduce the cost of the typical RI/FS by limiting the study to the essential elements needed to select a remedy. Streamlining would focus the remedial analysis on the collection of the data needed to develop and evaluate alternatives and would limit the alternative development and screening step in the FS to include only potentially effective and implementable alternatives.

Record - 51

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03585465 E.I. Monthly No: EI9304045469

Title: EPA's Superfund technical support project.

Author: Scalf, Marion R.

Corporate Source: U.S. Environmental Protection Agency, Ada, OK, USA

Source: Journal of Hazardous Materials v 32 n 2-3 Dec 1992 p 313-319

Publication Year: 1992

CODEN: JHMAD9 ISSN: 0304-3894

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); G; (General Review); X; (Experimental)

Journal Announcement: 9304

Abstract: Remediation of hazardous waste sites, especially the subsurface component, is a relatively new, extremely complex, interdisciplinary science. Success is determined more by experience than by hardware. The Technical Support Project of the U.S. Environmental Protection Agency (EPA) has been very successful in minimizing the time between development of the science and application of that scientific knowledge to decision making in the field. The Technical Support Project not only transfers knowledge from research to the field but acts as a critical feedback mechanism for focusing research efforts on the highest priority and most productive areas. Requests for technical support to the Superfund program have increased dramatically through the years as Regional staff have become more familiar with the system and how to access the program. In 1991, EPA's Office of Solid Waste started an effort to extend the Technical Support Project to the RCRA corrective action program. RCRA corrective action may affect almost 4000 facilities and, although administrative efforts may differ, technical questions will be very similar to those addressed by Superfund. (Author abstract)

Record - 52

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03585460 E.I. Monthly No: EI9304046896

Title: Organic substances in the subsurface: Delineation, migration, and remediation.

Author: Murarka, Ishwar; Neuhauser, Edward; Sherman, Michael; Taylor, Barbara B.; Mauro, David M.; Ripp, John; Taylor, Terry

Corporate Source: Electric Power Research Inst, Palo Alto, CA, USA

Source: Journal of Hazardous Materials v 32 n 2-3 Dec 1992 p 245-261

Publication Year: 1992

CODEN: JHMAD9 ISSN: 0304-3894

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical); X; (Experimental)

Journal Announcement: 9304

Abstract: The Electric Power Research Institute (EPRI) and Niagara Mohawk Power Corporation are sponsoring a research program concerning the release, transformation, and migration of organic compounds at a site where coal tar from former manufactured gas plant (MGP) operations was disposed nearly thirty years ago. Work at this site, referred to as EBOS Site 24, has included: determination of the location and chemical content of the tarry

source material, delineation of the groundwater contaminant plume, evaluation and implementation of innovative methods for sampling and analysis, and the remediation and restoration of the site. The results of the initial phase of research provided several important insights into the mechanisms of contaminant release and migration. For example, the shape of the groundwater contaminant plume at EBOS Site 24 was dominated by longitudinal advection with little contribution from transverse or vertical dispersion. A long-term monitoring program at EBOS Site 24 was initiated prior to the removal of the source material. The results of the baseline groundwater monitoring along the plume centerline were similar to the values predicted using EPRI's MYGRT**T**M model for migration of contaminants. After the baseline monitoring was completed, all of the tarry source material was removed in 1991 and used in the production of asphalt and portland cement. The groundwater monitoring program will continue for several years and the field results generated during this time will be used to evaluate and/or calibrate the MYGRT**T**M model. (Author abstract) 12 Refs.

Record - 53

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03573855 E.I. Monthly No: EIM9303-013968
Title: Recovery of metals from water using ion exchange.
Author: Hickey, Thomas A.; Stevens, David K.
Corporate Source: B&V Waste Science and Technology Corp, Kansas City, MO,
USA
Conference Title: 1992 National Conference on Environmental Engineering -
Water Forum '92
Conference Location: Baltimore, MD, USA Conference Date: 1992 Aug 2-6
Sponsor: ASCE
E.I. Conference No.: 16970
Source: Saving a Threatened Resource-In Search of Solutions National
Conference on Environmental Engineering. Publ by ASCE, New York, NY, USA. p
510-515
Publication Year: 1992
CODEN: NCEEDO ISSN: 0731-1516
Language: English
Document Type: PA; (Conference Paper) Treatment: X; (Experimental); A;
(Applications)
Journal Announcement: 9303
Abstract: Ion exchange technology is being used to treat ground and storm
water at a wood treatment facility in California as part of a comprehensive
site remediation program. Wood treating chemicals (inorganic metals
chromium and copper) recovered from the site waters through ion exchange
regeneration are reused in the wood treating operation. Offsite waste
disposal is minimized and resource recovery is maximized. (Author abstract)

Record - 54

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03558772 E.I. Monthly No: EIM9302-007201
Title: Numerical results of calculated 3D vertical circulation flows
around wells with two screen sections for in situ or on-site aquifer
remediation.

Author: Herrling, B.; Stamm, J.
Corporate Source: Univ of Karlsruhe, Karlsruhe, Germany
Conference Title: Proceedings of the 9th International Conference on Computational Methods in Water Resources
Conference Location: Denver, CO, USA Conference Date: 1992 Jun
E.I. Conference No.: 16972
Source: Finite Elements in Water Resources, Proceedings of the International Conference v 1. Publ by Computational Mechanics Publ, Southampton, Engl. p 483-493
Publication Year: 1992
CODEN: FEWRDB
Language: English
Document Type: PA; (Conference Paper) Treatment: T; (Theoretical); A; (Applications)
Journal Announcement: 9302
Abstract: Three-dimensional vertical circulation flows around wells with two screen sections in one aquifer. so called 'groundwater circulation wells' (GZB), are an important subject of numerical investigation. Normally, the two screen sections are placed at the bottom and top of an aquifer. When on-site remediation techniques should be used, e.g. for the elimination of dissolved heavy metals from the groundwater, the same technique of a GZB can be utilized: The groundwater entering the well is pumped above ground, treated, and infiltrated into the same well using the other well screen. 2 Refs.

Record - 55

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03558014 E.I. Monthly No: EIM9302-006443
Title: Trace metal soil quality criteria to protect groundwater.
Author: Lee, J.; Chen, B.; Allen, H. E.; Huang, C. P.; Sparks, D. L.; Sanders, P.
Corporate Source: Univ of Delaware, Newark, DE, USA
Conference Title: Proceedings of the 16th Biennial Conference of the International Association on Water Pollution Research and Control - Water Quality International '92
Conference Location: Washington, DC, USA Conference Date: 1992 May 24-30
E.I. Conference No.: 17578
Source: Water Science and Technology v 26 n 9-11 1992. p 2327-2329
Publication Year: 1992
CODEN: WSTED4 ISSN: 0273-1223
Language: English
Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical); X; (Experimental)
Journal Announcement: 9302
Abstract: A major problem in site remediation is frequently the lack of appropriate standards for pollutants in soil. Lack of standards for an exposure route can result in subjective judgments regarding the extent of remediation needed. These problems are particularly important when considering the potential for groundwater contamination by inorganic materials. The partitioning of trace metals is highly dependent on the nature of the soil and on the solution pH. The maximum level of metal in soil for which the equilibrium soluble metal does not exceed the drinking

water standard can be computed, at any pH, from the measured partition coefficient for any metal and soil. (Edited author abstract) Refs.

Record - 56

<IALOG File 8: (c) 1994 Engineering Info. Inc.>

03546547 E.I. Monthly No: EIM9301-002547

Title: Horizontal systems technology for shallow site remediation.

Author: Karlsson, Haraldur

Corporate Source: Eastman Christensen Environmental Systems

Conference Title: SPE Annual Technical Conference and Exhibition - 1992

Conference Location: Washington, DC, USA Conference Date: 1992 Oct 4-7

Sponsor: Soc of Petroleum Engineers

E.I. Conference No.: 17308

Source: Drilling Proceedings - SPE Annual Technical Conference and Exhibition v Delta. Publ by Soc of Petroleum Engineers of AIME, Richardson, TX, USA, SPE 24600. p 583-595

Publication Year: 1992

CODEN: PSAEE3

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications); G; (General Review)

Journal Announcement: 9301

Abstract: Innovations in drilling and completion technology for horizontal wellbores maximize the hydrological benefits of horizontal wells for aquifer remediation. Horizontal wells exhibit groundwater flow characteristics, drawdown distribution and contaminant capture capabilities superior to those of vertical wells in many hydrological scenarios.

Comparison of installation, operation and maintenance costs of vertical and horizontal groundwater recovery systems reveals substantial savings engendered by horizontal wells, despite higher drilling costs. Development of a casing drilling and completion system, described in detail in this paper, has allowed the environmental industry to begin reaping the benefits of horizontal wells, which include safer, more efficient remediation operations. (Author abstract) 5 Refs.

Record - 57

<IALOG File 8: (c) 1994 Engineering Info. Inc.>

03535686 E.I. Monthly No: EI9301005116

Title: Numerical simulation of gas venting for NAPL site remediation.

Author: Forsyth, P. A.; Shao, B. Y.

Corporate Source: Univ of Waterloo, Waterloo, Ont, Can

Source: Advances in Water Resources v 14 n 6 Dec 1991 p 354-367

Publication Year: 1991

CODEN: AWREDI ISSN: 0309-1708

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); T; (Theoretical)

Journal Announcement: 9301

Abstract: A control volume, finite element method is used to discretize the three phase, three component equations for simulation of gas venting. The discrete equations are solved using full Newton iteration. Any combinations of phases can exist, and variable substitution is used to take

into account phase appearance and disappearance. Some example computations are presented for two dimensional axisymmetric geometry. Several different scenarios for gas venting are examined. High rate air injection can be effective at removing NAPL both in the unsaturated and saturated zones. The numerical techniques can handle problems having node pore volume gas throughputs (in a timestep) of the order of 10^{**6} , which greatly exceeds the maximum stable explicit timestep size. (Author abstract) 29 Refs.

Record - 58

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03529495 E.I. Monthly No: EIM9212-062628

Title: Towards the fourth generation site remediation technology.

Author: Mischgofsky, F. H.

Corporate Source: Delft Geotechnics, Delft, Neth

Conference Title: Proceedings of the 12th International Conference on
Soil Mechanics and Foundation Engineering

Conference Location: Rio de Janeiro, Br Conference Date: 1989 Aug 13-18

E.I. Conference No.: 16765

Source: Proceedings of the International Conference on Soil Mechanics and
Foundation Engineering v 3. Publ by A.A. Balkema, Rotterdam, Neth. p
1895-1898

Publication Year: 1989

CODEN: PCSMB2 ISBN: 90-6191-893-6

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications); G;
(General Review)

Journal Announcement: 9212

Abstract: Within a decade soil remediation developed in the leading countries (USA, the Netherlands, FRG) from an ad hoc reaction on public pressure to a systematic soil protection policy. For the USA and the European Community (EC), estimated remediation costs exceed 430 billion USDLR@. Soil quality standards and legislation force industry into large scale soil remediation of present and former sites and dumps. This incites large (petro)chemical companies to the development of more specific and cheaper remediation technologies, specifically suited for their own types of contamination: i.e. in-situ and off-site treatment of contaminated soil.

This may bring sophisticated chemistry and microbiology in this traditionally civil engineering field, and might cut remediation costs down to 50%, but might also reduce considerably the market share of the building industry. Early R & D cooperation of contractors with chemical industry could benefit both, but particularly the contractors. (Author abstract)
Refs.

Record - 59

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03516960 E.I. Monthly No: EI9212162540

Title: Operating issues in groundwater extraction and treatment.

Author: Doherty, Richard E.

Corporate Source: GeoSystems Inc, Westwood, MA, USA

Source: Pollution Engineering v 24 n 3 Feb 1 1992 p 61-64

Publication Year: 1992

CODEN: PLENBW ISSN: 0032-3640

41

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications)

Journal Announcement: 9212

Abstract: Technical and regulatory factor considerations lead to the conclusion that all groundwater treatment systems require an operator, but the operator's duties, responsibilities and level of effort vary widely. In a fully-automated, remotely-monitored system, operator attention is still required for periodic monitoring, maintenance and responding to alarm conditions. Also, to obtain permits, it is often necessary to designate some person or entity as the operator. Finally, the operator is a key player in reaching the ultimate goal that the assessment, design and construction activities are intended to reach - that of completing remediation of the site. This article discusses operator responsibilities, common operating problems, and design considerations.

Record - 60

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03458960 E.I. Monthly No: EIM9207-037759

Title: Grouting for hazardous waste site remediation at Necco Park, Niagara Falls, New York.

Author: Weaver, K. D.; Coad, R. M.; McIntosh, K. R.

Corporate Source: Woodward-Clyde Consultants, Oakland, CA, USA

Conference Title: Proceedings of the 1992 ASCE Specialty Conference on Grouting, Soil Improvement and Geosynthetics

Conference Location: New Orleans, LA, USA Conference Date: 1992 Feb 25-28

Sponsor: ASCE, Geotechnical Engineering Div

E.I. Conference No.: 16347

Source: Geotechnical Special Publication v 2 n 30. Publ by ASCE, New York, NY, USA. p 1332-1343

Publication Year: 1992

CODEN: GSPUER ISSN: 0895-0563

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications)

Journal Announcement: 9207

Abstract: A single-line grout curtain was constructed along three sides of a 10 hectare industrial landfill located on dolomitic bedrock in Niagara Falls, New York. The objective of this curtain was to reduce the volume of underflow that was being removed by down-gradient extraction wells in order to prevent off-site migration of organic contaminants dissolved from materials that had been placed in the landfill during its 40 year operating life. Construction of the grout curtain was preceded by grout testing program. Conduct of the grouting operations was complicated by the need to employ special safety, precautions related to drilling in contaminated materials and a need to avoid creating a ground water mound that might rise into an up-gradient landfill. Preliminary results of geohydrologic monitoring subsequent to completion of the grouting operations indicate that the grout curtain is functioning as designed and that the efficiency of ground water recovery operations have substantially improved. (Author abstract) 3 Refs.

Record - 61

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<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03427467 E.I. Monthly No: EIM9205-022053

Title: Process development for remediation of phenolic waste lagoons.

Author: Arands, Rolf; Kuczykowski, David; Kosson, David

Corporate Source: Rutgers Univ, Piscataway, NJ, USA

Conference Title: Characterization and Cleanup of Chemical Waste Sites

Conference Location: Washington, DC, USA Conference Date: 1990 Aug 29

E.I. Conference No.: 16071

Source: Journal of Hazardous Materials v 29 n 1 Dec 1991. p 97-125

Publication Year: 1991

CODEN: JHMAD9 ISSN: 0304-3894

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications)

Journal Announcement: 9205

Abstract: Aqueous phenolic wastes from a phenolic resin production process were disposed in lagoons on the production site. Groundwater contamination in the area has exceeded state limits and thus mandated remedial action. Representative core samples from within and around the highly contaminated soil regions were collected. These samples were physically and chemically characterized to better determine the extent and nature of contamination. Both in situ and on-site remediation scenarios were considered. The most promising scenario was in situ forced leaching with above-ground aerobic microbial treatment of the leachate. The treatment could be carried out with six months operation at a cost of approximately DLR@170 per ton of treated soil, with the capability of reaching a final residual soil phenol concentration less than 20 mg/kg dry soil. (Author abstract) 23 Refs.

Record - 62

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03382363 E.I. Monthly No: EIM9202-006758

Title: On-site remediation of organically impacted soils on oilfield properties.

Author: Hildebrandt, W. W.; Wilson, S. B.

Corporate Source: Groundwater Technology Inc

Conference Title: Proceedings - 1990 California Regional Meeting

Conference Location: Ventura, CA, USA Conference Date: 1990 Apr 4-6

E.I. Conference No.: 13198

Source: Proc 90 Calif Reg Meet. Publ by Soc of Petroleum Engineers of AIME, Richardson, TX, USA. p 401-406 20061

Publication Year: 1990

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications)

Journal Announcement: 9202

Abstract: Degraded soil on oilfield property is frequently associated with oil wells, sumps, pits, storage tanks, pipeline headers and pump stations. Soil found in these areas is often considered either hazardous waste or designated waste under regulatory guidelines. Oilfield properties are frequently transferred to new operators, are abandoned, or are converted to other uses such as real estate. There is increasing concern about an owner's liabilities and the costs to remediate soil which has been contaminated with crude oil. Modern soil bioremediation systems are cost-effective for the treatment of crude oil contamination and can

eliminate an owner's subsequent liabilities. Compared to traditional landfarming practices, a modern on-site bioremediation system (a) requires significantly less surface area, (b) results in lower operating costs, and (c) provides more expeditious results. Case studies indicate that on-site bioremediation systems have been successful at reducing the crude oil contamination in soil to levels which are acceptable to regulatory agencies in less than 10 weeks. Total costs for the on-site bioremediation ranged from DLR@35 to DLR@40 per cubic yard of treated soil, including excavation. (Author abstract) 10 Refs.

Record - 63

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03374188 E.I. Monthly No: EI9202020427

Title: MOTCO superfund site cleanup and restoration.

Author: Aident, Michael; Foster, Michael; Stolte, William

Corporate Source: IT/McGill Pollution Control Systems, Knoxville, TN, USA

Source: Waste Management v 11 n 3 1991 p 135-146

Publication Year: 1991

CODEN: WAMAE2 ISSN: 0956-053X

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications)

Journal Announcement: 9202

Abstract: The MOTCO hazardous waste site is located in LaMarque Texas approximately 72 km southeast of Houston. There are approximately 38,000 Mg (42,000 tons) of hazardous and toxic waste materials in eight pits on the MOTCO site. Additionally, 36,000 Mg (40,000 tons) of lightly contaminated soil are associated with the pits. The wastes are primarily high heat content organic liquids, sludges, and solids, some containing PCB concentrations in excess of 50 mg/kg (50 ppm). The remediation project includes site preparation, excavation, equipment mobilization and erection, trial burn, incineration, demobilization, and site closure. The project is currently underway with site preparation activities, equipment erection, and one of two trial burns completed. Remediation is progressing with one of the eight waste pits completed. (Author abstract) 10 Refs.

Record - 64

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03367189 E.I. Monthly No: EIM9201-002189

Title: In situ remediation of hazardous wastes.

Author: Ayer, Elizabeth A.

Corporate Source: Univ of Houston, Houston, TX, USA

Conference Title: Proceedings of the 1991 Specialty Conference on Environmental Engineering

Conference Location: Reno, NV, USA Conference Date: 1991 Jul 8-10

Sponsor: ASCE, Environmental Engineering Div; Univ of Nevada-Reno, Civil Engineering Dep; American Acad of Environmental Engineers; Canadian Soc for Civil Engineering; Truckee Meadows Branch of ASCE; et al

E.I. Conference No.: 15165

Source: Environmental Engineering Proc 91 Spec Conf Environ Eng. Publ by ASCE, New York, NY, USA. p 557-566

Publication Year: 1991

ISBN: 0-87262-810-8

44

Language: English

Document Type: PA; (Conference Paper) Treatment: G; (General Review)

Journal Announcement: 9201

Abstract: Numerous releases of hazardous substances have occurred at uncontrolled sites all around the United States. These sites pose toxic threats to public health and our environment, and potential loss of natural resources. The traditional approaches of site isolation or excavation and disposal of the contaminated soil or both do not provide a permanent solution. The challenge facing us is to restore the land to an environmentally safe and reusable state with minimal amounts of hazardous wastes to ultimately be disposed. In situ soil remediation offers the attractive alternative of leaving the soil in-place, thereby reducing the amount of hazardous material to be destroyed. We must actively investigate this option and continue to develop the technology to implement it. (Author abstract)

Record - 65

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03367185 E.I. Monthly No: EIM9201-002185

Title: Observational approach in environmental restoration.

Author: Smyth, J. D.; Quinn, R. D.

Corporate Source: Pacific Northwest Lab, Richland, WA, USA

Conference Title: Proceedings of the 1991 Specialty Conference on Environmental Engineering

Conference Location: Reno, NV, USA Conference Date: 1991 Jul 8-10

Sponsor: ASCE, Environmental Engineering Div; Univ of Nevada-Reno, Civil Engineering Dep; American Acad of Environmental Engineers; Canadian Soc for Civil Engineering; Truckee Meadows Branch of ASCE; et al

E.I. Conference No.: 15165

Source: Environmental Engineering Proc 91 Spec Conf Environ Eng. Publ by ASCE, New York, NY, USA. p 528-533

Publication Year: 1991

ISBN: 0-87262-810-8

Language: English

Document Type: PA; (Conference Paper) Treatment: G; (General Review)

Journal Announcement: 9201

Abstract: The U.S. Department of Energy (DOE) has committed to completing environmental restoration of its facilities within the next 28 years (DOE 1990). To achieve this, DOE must ensure that its restoration activities are both effective and efficient. A key aspect of fulfilling this commitment is recognition and management of the uncertainty that is inherent in waste-site cleanup actions. The DOE Office of Environmental Restoration (DOE-ER) requested Pacific Northwest Laboratory (PNL) to investigate the applicability and implementation of what is known as the 'observational approach' to address these issues. PNL's initial investigation resulted in the positive conclusion that the observational approach could potentially benefit DOE's environmental restoration. In a follow-on effort, PNL, supported by CH2M HILL, has been providing guidance to DOE field offices on observational approach fundamentals, implementation, and application to waste-site remediation. This paper outlines the fundamentals of the observational approach and discusses the progress that has been made in integrating the observational approach in DOE's environmental restoration efforts. (Author abstract)

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Record - 66

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03367183 E.I. Monthly No: EIM9201-002183
Title: Performance analysis of remedial alternatives.
Author: Wilson, David S.
Corporate Source: Environmental Resources Management, Inc, Exton, PA, USA
Conference Title: Proceedings of the 1991 Specialty Conference on
Environmental Engineering
Conference Location: Reno, NV, USA Conference Date: 1991 Jul 8-10
Sponsor: ASCE, Environmental Engineering Div; Univ of Nevada-Reno, Civil
Engineering Dep; American Acad of Environmental Engineers; Canadian Soc for
Civil Engineering; Truckee Meadows Branch of ASCE; et al
E.I. Conference No.: 15165
Source: Environmental Engineering Proc 91 Spec Conf Environ Eng. Publ by
ASCE, New York, NY, USA. p 517-522
Publication Year: 1991
ISBN: 0-87262-810-8
Language: English
Document Type: PA; (Conference Paper) Treatment: G; (General Review)
Journal Announcement: 9201
Abstract: This paper demonstrates how remedial action alternatives for a
Superfund site can be evaluated using a health-risk basis. The case history
for this demonstration is a Feasibility Study (FS) for a site in central
Delaware performed by Environmental Resources Management, Inc. (ERM) of
Exton, Pennsylvania. This study enabled comparison between risk reduction
and cost for various levels of remediation. (Author abstract)

Record - 67

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03367182 E.I. Monthly No: EIM9201-002182
Title: Development of effective remediation criteria.
Author: Block, Robert N.; Genes, Benjamin R.; Finkel, Debra J.
Corporate Source: Remediation Technologies, Inc, Concord, MA, USA
Conference Title: Proceedings of the 1991 Specialty Conference on
Environmental Engineering
Conference Location: Reno, NV, USA Conference Date: 1991 Jul 8-10
Sponsor: ASCE, Environmental Engineering Div; Univ of Nevada-Reno, Civil
Engineering Dep; American Acad of Environmental Engineers; Canadian Soc for
Civil Engineering; Truckee Meadows Branch of ASCE; et al
E.I. Conference No.: 15165
Source: Environmental Engineering Proc 91 Spec Conf Environ Eng. Publ by
ASCE, New York, NY, USA. p 511-516
Publication Year: 1991
ISBN: 0-87262-810-8
Language: English
Document Type: PA; (Conference Paper) Treatment: G; (General Review)
Journal Announcement: 9201
Abstract: Clean-up criteria for remediation of hazardous waste sites take
several forms. These vary from simple sensory parameters, e.g., visual
evidence of contamination to specific numerical criteria to methodological
criteria. The specific form of the criteria has a significant effect upon

the successful implementation of a remedial action. This paper explores the various types and forms of clean-up criteria and discusses the impact of these types of criteria on achieving compliance. (Author abstract)

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<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03367181 E.I. Monthly No: EIM9201-002181

Title: Redevelopment of remediated Superfund sites. Problems with current approaches in providing long-term public health protection.

Author: Lee, G. Fred; Jones, R. Anne

Corporate Source: G. Fred Lee & Associates, El Macero, CA, USA

Conference Title: Proceedings of the 1991 Specialty Conference on Environmental Engineering

Conference Location: Reno, NV, USA Conference Date: 1991 Jul 8-10

Sponsor: ASCE, Environmental Engineering Div; Univ of Nevada-Reno, Civil Engineering Dep; American Acad of Environmental Engineers; Canadian Soc for Civil Engineering; Truckee Meadows Branch of ASCE; et al

E.I. Conference No.: 15165

Source: Environmental Engineering Proc 91 Spec Conf Environ Eng. Publ by ASCE, New York, NY, USA. p 505-510

Publication Year: 1991

ISBN: 0-87262-810-8

Language: English

Document Type: PA; (Conference Paper) Treatment: G; (General Review)

Journal Announcement: 9201

Abstract: The normal primary objective of Superfund site remediation is the control of hazardous chemicals so that they do not represent a significant threat to public health and the environment on adjacent properties. The remediation of many federal and state Superfund sites involves leaving potentially significant amounts of hazardous chemicals in the soil and groundwaters of the area. This approach has significant long-term public health implications for redevelopment of a remediated site. A situation of this type is the potential problems associated with the degree of investigation and remediation compared to proposed plans for redevelopment of the Southern Pacific Railyard site located near downtown Sacramento, California. This 220 acre site's soils are contaminated with lead and other heavy metals, PNAs, and petroleum hydrocarbons. The groundwaters are contaminated by chlorinated solvents, some of which have been converted to vinyl chloride. Because of its location in downtown Sacramento in the waterfront area, the site is a prime candidate for redevelopment. Plans have been developed for intensive redevelopment involving commercial and residential uses. This paper discusses a number of potential redevelopment problems for this Superfund site as an example of problems that could occur with the redevelopment of many Superfund sites and suggests approaches that should be considered in developing deed and other restrictions on future property use for those properties that were contaminated by Priority Pollutants and remediated in accord with current Superfund guidelines. (Edited author abstract)

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<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03367129 E.I. Monthly No: EIM9201-002129

Title: Remedial planning for the former EXPO 86 site.
Author: Reis, Richard
Corporate Source: Harding Lawson Associates, Seattle, WA, USA
Conference Title: Proceedings of the 1991 Specialty Conference on Environmental Engineering
Conference Location: Reno, NV, USA Conference Date: 1991 Jul 8-10
Sponsor: ASCE, Environmental Engineering Div; Univ of Nevada-Reno, Civil Engineering Dep; American Acad of Environmental Engineers; Canadian Soc for Civil Engineering; Truckee Meadows Branch of ASCE; et al
E.I. Conference No.: 15165
Source: Environmental Engineering Proc 91 Spec Conf Environ Eng. Publ by ASCE, New York, NY, USA. p 185-190
Publication Year: 1991
ISBN: 0-87262-810-8
Language: English
Document Type: PA; (Conference Paper) Treatment: G; (General Review)
Journal Announcement: 9201
Abstract: This paper describes the site characterization and remedial action planning effort that is being undertaken at the former EXPO 86 site in downtown Vancouver, B.C. The 200 acre site on the north shore of False Creek has a 100-year history of heavy industrial use. A phased approach to site characterization and remedial planning has been undertaken to meet the specific requirements of different areas of the site. (Author abstract)

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<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03365255 E.I. Monthly No: EIM9201-000255
Title: Environmental Engineering.
Author: Krenkel, Peter A. (Ed.)
Corporate Source: Univ of Nevada-Reno, Reno, NV, USA
Conference Title: Proceedings of the 1991 Specialty Conference on Environmental Engineering
Conference Location: Reno, NV, USA Conference Date: 1991 Jul 8-10
Sponsor: ASCE, Environmental Engineering Div; Univ of Nevada-Reno, Civil Engineering Dep; American Acad of Environmental Engineers; Canadian Soc for Civil Engineering; Truckee Meadows Branch of ASCE; et al
E.I. Conference No.: 15165
Source: Environmental Engineering Proc 91 Spec Conf Environ Eng 1991.
Publ by ASCE, New York, NY, USA. 801p
Publication Year: 1991
ISBN: 0-87262-810-8
Language: English
Document Type: CP; (Conference Proceedings) Treatment: G; (General Review)
Journal Announcement: 9201
Abstract: These proceedings contain 128 papers from the conference all of which are abstracted and indexed individually. These papers were presented in the following sessions: landfill design and management; water reclamation and reuse; toxic air emissions; mixed wastes; collection systems; toxicity bioassays; hazardous waste bioremediation; toxic compounds removal by adsorption; water treatment; sludge management and disposal; nutrient removal; emission control and air stripping; waste minimization; engineered aquatic treatment systems; wastewater treatment

plant emissions; radiation management; water pollution; site remediation; environmental risk assessments; disinfection; and environmental impact of drought.

Record - 71

<IALOG File 8: (c) 1994 Engineering Info. Inc.>

03350384 E.I. Monthly No: EIM9112-062068

Title: Effect of surfactants on the sorption partition coefficients of naphthalene on aquifer soils.

Author: Brickell, J. L.; Keinath, T. M.

Corporate Source: United States Air Force Acad, CO, USA

Conference Title: Proceedings of the 15th Biennial Conference of the International Association on Water Pollution Research and Control

Conference Location: Kyoto, Jpn Conference Date: 1990 Jul 29-Aug 3

E.I. Conference No.: 15243

Source: Water Science and Technology v 23 n 1-3 1991. p 455-463

Publication Year: 1991

CODEN: WSTED4 ISSN: 0273-1223 ISBN: 0-08-040774-9

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9112

Abstract: The efficiency of removing organic contaminants from groundwater aquifers by the pump and treat process is adversely affected by the retardation of the contaminant's mobility due to adsorption onto aquifer material. The use of surfactants in conjunction with the pump and treat process has the potential for improving contaminant mobility by solubilizing the adsorbed contaminant. An experimental program was conducted to screen various types of commercially available nonionic and anionic surfactants for solubilizing adsorbed naphthalene from one type of aquifer soil. Two additional types of aquifer soils were obtained, and the surfactant mixture, Tween 20 and Aerosol AY-65, selected during the screening process was used at various concentrations for equilibrium desorption studies to quantify surfactant effects on naphthalene desorption. Equilibrium desorption studies showed that a 0.125 percent surfactant solution decreased the partition coefficient 65 percent compared with water alone for one soil type, while greater surfactant concentrations resulted in less effective mobilization. However, the same surfactant mixture markedly increased the partition coefficient when used with another soil type, and had negligible effects for the third soil type. It was shown that the clay mineralogy significantly influenced the effect of the surfactant solution. (Author abstract) 10 Refs.

Record - 72

<IALOG File 8: (c) 1994 Engineering Info. Inc.>

03350378 E.I. Monthly No: EIM9112-062062

Title: Methods to set soil cleanup goals to protect surface and ground water quality at hazardous waste sites.

Author: Huggins, A.; LaGrega, M. D.

Corporate Source: Environmental Resources Management, Inc, Exton, PA, USA

Conference Title: Proceedings of the 15th Biennial Conference of the International Association on Water Pollution Research and Control

Conference Location: Kyoto, Jpn Conference Date: 1990 Jul 29-Aug 3

E.I. Conference No.: 15243

Source: Water Science and Technology v 23 n 1-3 1991. p 405-412

Publication Year: 1991

CODEN: WSTED4 ISSN: 0273-1223 ISBN: 0-08-040774-9

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9112

Abstract: Hazardous waste management programs in the U.S. have focused on the cleanup of sites so that environmental standards are met and environmental and human health risks will be mitigated. The programs involve the cleanup of abandoned sites as well as existing industrial facilities. In many cases the criteria for cleanup at these sites are based on the protection of ground or surface water resources. Criteria can be based on 1) background levels in the surrounding environment, 2) national or state standards set to protect surface and ground water uses, and/or 3) site-specific standards based on risk assessment techniques. Methodologies for the derivation of cleanup goals in the U.S. vary between regulatory programs. Media-protection standards or trigger levels are the simplest to manage, but their appeal can be diminished if they lead to unnecessary cleanup activities. Such simple systems also fail to deal with any unique site characteristics or exposure patterns. Partly in response to such concerns, some U.S. programs depend upon risk assessment to set site-specific cleanup goals. This paper provides several case studies where various approaches to developing cleanup goals have been applied, and discusses the advantages and disadvantages of the different approaches.

(Author abstract) 10 Refs.

Record - 73

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03341384 E.I. Monthly No: EI9112152053

Title: Storage, disposal, remediation, and closure.

Author: Millano, Elsie F.; Ball, Roy O.

Source: Research Journal of the Water Pollution Control Federation v 63 n 4 Jun 1991 p 518-525

Publication Year: 1991

CODEN: RJWFE7 ISSN: 1047-7624

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); L; (Literature Review/Bibliography); X; (Experimental)

Journal Announcement: 9112

Abstract: The paper is part of the 1991 WPCF Literature Review, which covers 49 separate review topics. Subjects covered here include site evaluation, site design, migration of compounds, environmental regulations, selection of remedial action, and others. 154 Refs.

Record - 74

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03318713 E.I. Monthly No: EIM9110-050157

Title: Identification, remediation and control of contaminated sites and landfills.

Author: Schwyn, B.; Scheiwiller, T.
Corporate Source: SIMULTEC Ltd, Zurich, Switzerland
Conference Title: Proceedings of International Conference on Environmental Pollution - ICEP-1
Conference Location: Lisbon, Port Conference Date: 1991 Apr
E.I. Conference No.: 14710
Source: International Conference on Environmental Pollution Proc Int Conf Environ Pollut. Publ by InderScience Enterprises Ltd, World Trade Center Bldg, Geneva Aeroport 15, Switz. p 291-298
Publication Year: 1991
Language: English
Document Type: PA; (Conference Paper) Treatment: A; (Applications); X; (Experimental)
Journal Announcement: 9110

Abstract: A modular methodology was developed to deal systematically with contaminated sites and landfills. From the time the site identified, during its remediation, and until it is dropped from the list of hazardous sites, all activities are managed by three sets of tools: data collection, analysis, and remediation. To begin the investigation of a suspicious site, data collection and analysis are performed alternately until the acquired knowledge about the site is sufficient to take the necessary remedial measures. By the alternate use of data collection and analysis the site is monitored. Experience has indicated that applying the methodology is the best way to develop it. (Author abstract) 10 Refs.

Record - 75

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03308075 E.I. Monthly No: EI9110128049
Title: Use of electrokinetics for hazardous waste site remediation.
Author: Cabrera-Guzman, D.; Swartzbaugh, J. T.; Weisman, A. W.
Corporate Source: U.S. Environmental Protection Agency, Cincinnati, OH, USA
Source: Journal of the Air & Waste Management Association v 40 n 12 Dec 1990 p 1670-1676
Publication Year: 1990
CODEN: JAWAEB ISSN: 1047-3289
Language: English
Document Type: JA; (Journal Article) Treatment: A; (Applications); X; (Experimental)
Journal Announcement: 9110

Abstract: Recently, EPA, through the Superfund Innovative Technology Evaluation (SITE) program, issued a work assignment to assess the 'state-of-the-art' of electrokinetically enhanced contaminant removal from soils. Prior research efforts, both laboratory and field, have demonstrated that electroosmosis has the potential to be effective in facilitating the removal of certain types of hazardous wastes from soils. Particularly encouraging results have been achieved with inorganics in fine-grained soils where more traditional removal alternatives are less effective. Although the results of various studies suggest that electrokinetics is a promising technology, further testing is needed at both the laboratory and field levels to fully develop this technology for site remediation. A conceptual test program is presented based on best available data which incorporates system design and operating parameters used in previous

applications of this technology in the use of electrokinetics treatment as a remediation technique at hazardous waste sites. (Edited author abstract)
10 Refs.

Record - 76

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03106520 E.I. Monthly No: EIM9108-038550

Title: Major remediation. Removal and recovery of TCE from soil and groundwater.

Author: Lindhult, Eric C.; Tischuk, Michael D.; Moose, Roger D.

Corporate Source: Dames & Moore, Willow Grove, PA, USA

Conference Title: Proceedings of the 22nd Mid-Atlantic Industrial Waste Conference

Conference Location: Philadelphia, PA, USA Conference Date: 1990 Jul 24-27

Sponsor: Bucknell Univ; Univ Delaware; Drexel Univ; Howard Univ; Johns Hopkins Univ; et al

E.I. Conference No.: 14481

Source: Hazardous and Industrial Wastes Hazardous and Industrial Wastes - Proceedings of the Mid-Atlantic Industrial Waste Conference. Publ by Technomic Publ Co Inc, Lancaster, PA, USA. p 303-320

Publication Year: 1990

CODEN: HIWAEB ISSN: 1044-0631

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9108

Abstract: During a pre-transfer property investigation at an industrial facility, significant TCE contamination was detected in the subsurface. Further investigation detected a free-product TCE perched on a silt layer within the shallow overburden aquifer. Additional investigation indicated that the thickness of this free-product layer was as great as 6 feet. The quantity of free-product TCE perched on the silt layer has been estimated at several thousand gallons. After review of the pumping test data and the ground water and soil laboratory analyses, a preliminary treatment design was prepared and submitted to the regulatory agency. Regulatory approval was received for the installation of a treatment system to remediate the on-site contamination. The system includes groundwater extraction from the bedrock, shallow, and confined overburden wells using pneumatic and electrical pumps. (Edited author abstract)

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<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03063350 E.I. Monthly No: EIM9105-019670

Title: Treatment of phenol and cresol contaminated soil.

Author: Evangelista, Robert A.; Allen, Harry L.; Mandel, Robert M.

Corporate Source: CH2M, Sacramento, CA, USA

Conference Title: 197th National Meeting on Characterization and Cleanup of Chemical Waste Sites

Conference Location: Dallas, TX, USA Conference Date: 1989 Apr 10

E.I. Conference No.: 14458

Source: Journal of Hazardous Materials v 25 n 3 Dec 1990. p 343-360

Publication Year: 1990
CODEN: JHMAD9 ISSN: 0304-3894

Language: English
Document Type: JA; (Journal Article) Treatment: X; (Experimental)
Journal Announcement: 9105

Abstract: Bench-scale experiments investigated the technical feasibility of innovative treatment options to remediate soil contaminated with phenol and cresols. These experiments resulted in full-scale operations which were followed by an additional bench-scale test to remove residuals. The bench-scale treatments explored were passive evaporation, soil washing, and biodegradation. Passive evaporation reduced concentrations of phenol, ortho-cresol, and meta- and para-cresol 58 to 66%, 55 to 80%, and 36 to 43%, respectively, after 3 weeks. In the soil washing tests, alkaline water adjusted to pH 11.5 and hot water at 50 degree C both showed relative cleaning efficiencies of approximately 100%. Shake-flask biotreatment experiments found that *Alcaligenes eutrophus* JMP134 degraded phenol and cresol in untreated soil. After bench-scale experiments, a full-scale soil leaching process using water as an extractant removed more than 99.9% of the phenol and 99.7% of the cresols. To degrade oil and grease remaining in the leached soil, soil column biodegradation studies were performed on washed soil from the leach field. In the presence of a nutrient solution, oil and grease degraded rapidly, and residual phenol and cresols were further reduced. (Author abstract) 24 Refs.

Record - 78

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
03050339 E.I. Monthly No: EIM9104-014256

Title: Procedures for conducting air pathway analyses at superfund sites.
Author: Garrison, Mark E.; Cimorelli, Alan J.
Corporate Source: U.S. Environmental Protection Agency, Philadelphia, PN,
USA

Conference Title: Proceedings - 82nd A&WMA Annual Meeting
Conference Location: Anaheim, CA, USA Conference Date: 1989 Jun 25-30
E.I. Conference No.: 13687
Source: Proceedings - A&WMA Annual Meeting v 8. Publ by Air & Waste
Management Assoc, Pittsburgh, PA, USA. 16p

Publication Year: 1989

CODEN: PAMEE5

Language: English

Document Type: PA; (Conference Paper) Treatment: G; (General Review)
Journal Announcement: 9104

Abstract: This paper has outlined and summarized technical procedures that the Environmental Protection Agency (EPA) has developed to conduct air pathway analyses (APAs) at Superfund sites. The two basic approaches to APA - namely, modeling and monitoring, have been described and compared in terms of their relative strengths and weaknesses. The objective of the technical procedures and the companion Volume I, is to provide a site manager with the information necessary to better understand and control APAs that he or she may choose to conduct at a site. As follow-up work to these technical procedures, EPA has either initiated or is planning to initiate efforts to evaluate and possibly improve model algorithms such as area source algorithms and dispersion in the near-field (less than 100 meters from a source), to provide for screening techniques for long-term

averages, and to evaluate the potential usefulness of new monitoring techniques such as long-path optical techniques. 1 Ref.

Record - 79

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03045264 E.I. Monthly No: EI9104041113

Title: Application of observational method to hazardous waste engineering.

Author: Brown, Stuart M.; Lincoln, David R.; Wallace, William A.

Corporate Source: CH2M HILL, Inc, Portland, OR, USA

Source: Journal of Management in Engineering v 6 n 4 Oct 1990 p 479-500

Publication Year: 1990

CODEN: JMENEA ISSN: 0742-597X

Language: English

Document Type: JA; (Journal Article) Treatment: M; (Management Aspects)

Journal Announcement: 9104

Abstract: Uncertainty is a key technical factor in hazardous waste site remediations. It can lead to unreasonable data gathering exercises if the point of diminishing information returns is not recognized. Engineering under uncertainty, however, is not unique to hazardous waste site remediation. Approaches have been used elsewhere to recognize and respond to substantial uncertainty. The observational method, traditionally applied in geotechnical engineering, has a number of key elements applicable to hazardous waste site remediation. The key contributions of the observational method are: (1) Remedial design based on most probable site conditions; (2) identification of reasonable deviations from those conditions; (3) identification of parameters to observe so as to detect deviations during remediation; and (4) preparation of contingency plans for each potential deviation. This paper describes an approach for incorporating the observational method into the current USEPA Superfund process and provides a detailed discussion of that process in the context of ground-water remediation. Explicitly recognizing uncertainty in a proper application of the observational method offers the opportunity to reduce project time and costs as well as risks. (Author abstract) 2 Refs.

Record - 80

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03031308 E.I. Monthly No: EI9103027802

Title: Guide to controlling site remediation costs.

Author: Fender, Ron

Source: Pollution Engineering v 22 n 12 Nov 1990 p 86-91

Publication Year: 1990

CODEN: PLENBW ISSN: 0032-3640

Language: English

Document Type: JA; (Journal Article) Treatment: E; (Economic/Cost Data/Market Survey); G; (General Review)

Journal Announcement: 9103

Abstract: Site remediation can be simply described as the study and cleanup of hazardous waste sites. Under Superfund, Congress sought to punish people for unintended harm (or potential harm) caused by actions that were, in many cases, lawful at the time. It made companies financially liable for waste disposal problems created in the past - even if their

disposal practices were perfectly legal at the time. During the 1980s, site remediation grew to include sites identified under the Resource Conservation and Recovery Act (RCRA), various state Superfund laws and problems discovered during financial transactions such as property transfer. For the purposes of this article, site remediation is examined in the context of Superfund - with applications to the other areas mentioned.

Record - 81

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03031305 E.I. Monthly No: EI9103027801

Title: Methods of site Remediation.

Author: Patel, Yogesh B.; Shah, Mahabal K.; Cheremisinoff, Paul N.

Source: Pollution Engineering v 22 n 12 Nov 1990 p 58-64,66

Publication Year: 1990

CODEN: PLENBW ISSN: 0032-3640

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9103

Abstract: The article discusses superfund legislation requirements and cleanup technologies. Initially, the presumption was that sites could be cleaned up with conventional technologies. The high cost estimates for such cleanups along with public objections resulted in a system for developing new cleanup methods, the Superfund Innovative Technology Evaluation (SITE) program. Technologies discussed include soil washing/extraction, stabilization and solidification, deep and shallow soil mixing, thermal desorption, landfilling, and others.

Record - 82

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03021582 E.I. Monthly No: EIM9102-004239

Title: Site remediation of contaminated wetlands. Chemical characterization, biotreatment, waste minimization, and rapid toxicity assay development.

Author: Portier, Ralph J.; Shane, Barbara S.; Overton, Edward B.; Irvin, T. Rick; Martin, John E.

Corporate Source: Louisiana State Univ, Baton Rouge, LA, USA

Conference Title: Proceedings of the Gulf Coast Hazardous Substance Research Center Second Annual Symposium: Mechanisms and Applications of Solidification/Stabilization

Conference Location: Beaumont, TX, USA Conference Date: 1990 Feb 15-16
E.I. Conference No.: 13954

Source: Journal of Hazardous Materials v 24 n 2-3 Sep 1990. p 299-300

Publication Year: 1990

CODEN: JHMAD9 ISSN: 0304-3894

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9102

Abstract: National attention has focussed on the need for feasible technologies to permit on-site remediation of hazardous waste sites. To address this need, we are developing a biodegradation-based hazardous waste

site remediation system in which an innovative analytical technology, thermal chromatography-mass spectrometry (TC-MS), in concert with short term genotoxicity and teratogenicity assays is being used to monitor the progress of degradation of the wastes. The Pab Oil site, located near Abbeville, LA, has been chosen as the hazardous waste site for the study. This site was originally established to recycle oil from oil-based muds generated from numerous sources. A series of remediation tests using liquids/solids contact (LSC) reactors were conducted on produced water sludges similar to those at the Pab Oil site. Total organic carbon was reduced from 9,800 mg/kg dry weight to 321 mg/kg dry weight after 14 days in the reactors. Residuals are undergoing further remediation in a modified land farm approach. TC-MS analysis showed significant reductions of both aliphatic and asphaltine fractions. A new reactor for the suspension of up to 40 percent solids in an aqueous slurry, which is present at this site, has been designed to improve remediation kinetics and minimize upsets. Preliminary studies using polymer chelation of metals from standing water from the Pab Oil site, has shown that 74 to 97 percent of arsenic, chromium, nickel, and zinc were removed in a fixed bed reactor. Six microbial strains, including two isolated during a recent cruise in the Gulf of Mexico where deep ocean petroleum seep communities in the Green Canyon were explored, show great promise for anaerobic degradation of polycyclic aromatic hydrocarbons/petroleum mixtures. Four toxicity assays have been validated to monitor the toxicity of the oil wastes during the bioremediation process. (Author abstract)

Record - 83

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

03012590 E.I. Monthly No: EIM9101-002590

Title: Seed germination and root elongation toxicity tests in hazardous waste site evaluation. Methods development and applications.

Author: Linder, Greg; Greene, Joseph C.; Ratsch, Hilman; Nwosu, Julius; Smith, Sheila; Wilborn, David

Corporate Source: NSI Technology Services Corp, Corvallis, OR, USA

Conference Title: First Symposium on Use of Plants for Toxicity

Assessment

Conference Location: Atlanta, GA, USA Conference Date: 1989 Apr 19-20

Sponsor: ASTM Committee E-47 on Biological Effects & Environmental Fate; ASTM Committee E-47, Subcommittee E47.11 on Plant Toxicity

E.I. Conference No.: 13709

Source: ASTM Special Technical Publication v STP n 1091. Publ by ASTM, Customer Service Department, Philadelphia, PA, USA. p 177-187

Publication Year: 1990

CODEN: ASTTA8 ISSN: 0066-0558

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9101

Abstract: In the seed germination toxicity test, site soil is mixed with a reference soil to yield a logarithmic series of exposure concentrations into which test seeds are planted. Germination is evaluated after a five-day exposure, and effective concentrations associated with a 50% reduction in seed germination are calculated. Contrasted to this direct test of soil toxicity, the root elongation test evaluates soil eluates that

are prepared from site samples and contain water-soluble soil constituents potentially available to plants on-site and off-site. For the root elongation test, seeds are placed onto moistened filter paper that lines petri dish exposure chambers. Then, the exposure chambers are covered and incubated in complete darkness for five days; inhibition of root elongation is calculated as an EC₅₀ (exposure concentration that yields a 50% reduction in root length relative to controls) upon termination of the test. By using a variety of plant species and developing a comparative toxicity database, both seed germination and root elongation toxicity tests may be applied on a site-specific basis and contribute to the toxicity assessment required as part of an ecological assessment for a hazardous waste site. (Edited author abstract) 43 Refs.

Record - 84

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02985274 E.I. Monthly No: EIM9011-045817

Title: Remediation of the couchville pike superfund site to facilitate airport expansion.

Author: Higgins, Charles Sumner Jr.; Schecter, Rebecca Fricke

Corporate Source: ERC Environmental and Energy Services, Nashville, TN, USA

Conference Title: Proceedings of the 1990 Specialty Conference

Conference Location: Arlington, VA, USA Conference Date: 1990 Jul 8-11

Sponsor: ASCE, Environmental Engineering Div, New York, NY, USA

E.I. Conference No.: 13427

Source: National Conference on Environmental Engineering. Publ by ASCE, New York, NY, USA. p 748-755

Publication Year: 1990

CODEN: NCEEDO ISSN: 0731-1516

Language: English

Document Type: PA; (Conference Paper) Treatment: A; (Applications); G; (General Review)

Journal Announcement: 9011

Abstract: During the planning of an expansion of the main airport in Nashville, Tennessee, a 34-acre abandoned waste dump was discovered in the path of the proposed new runway. ERC Environmental and Energy Services (ERCE) investigated the potential presence of hazardous constituents, developed closure design criteria and monitored closure operations. The complexity of the airport construction, the 30-year age of the site and the lack of historical data resulted in the use of creative approaches to the project. Over 300,000 cubic yards of solid waste was excavated, screened for the presence of hazardous materials and relocated in an environmentally beneficial manner while maintaining the runway construction schedule.

(Author abstract)

Record - 85

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02985251 E.I. Monthly No: EIM9011-045794

Title: Feasible alternatives for remediation of a low-level radioactive waste site.

Author: Whitlock, Carol J.; Hutchinson, Clyde L.

Corporate Source: B & V Waste Science and Technology Corp, Overland, KS,

USA

Conference Title: Proceedings of the 1990 Specialty Conference
Conference Location: Arlington, VA, USA Conference Date: 1990 Jul 8-11
Sponsor: ASCE, Environmental Engineering Div, New York, NY, USA
E.I. Conference No.: 13427
Source: National Conference on Environmental Engineering. Publ by ASCE, New York, NY, USA. p 576-583

Publication Year: 1990
CODEN: NCEEDO ISSN: 0731-1516
Language: English
Document Type: PA; (Conference Paper) Treatment: G; (General Review)
Journal Announcement: 9011

Abstract: Groundwater contamination by both radionuclides and organic compounds has been identified at the site. Five alternatives for remedial action were evaluated. Four of these alternatives represent the actions which will, at least partially, meet the goals of the remedial activities.

Alternative 2 address the problems related to direct contact through activities on site such as farming or installation of drinking water wells but does not address the potential contacts resulting from intruders to the site or contamination carried off site by the groundwater. Alternative 3 provides added protection against onsite direct contact with contaminated materials and, by reducing the amount of infiltration and leaching through the site, reducing the amount of contaminated groundwater leaving the site. Alternative 4 would meet the remedial action objectives, but could require the disposal onsite of sludge containing radionuclides and organic compounds. Alternative 5 would also meet the remedial action objectives and would also potentially produce a sludge byproduct which must be disposed onsite.

Record - 86

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02944769 E.I. Monthly No: EIM9008-033505

Title: Long-term climate change assessment task of the protective barrier development program for low-level waste site remediation at the Hanford Site.

Author: Petersen, K. L.
Corporate Source: Westinghouse Hanford Co, Richland, WA, USA
Conference Title: Proceedings of the 1st Annual International Topical Meeting on High Level Radioactive Waste Management. Part 2
Conference Location: Las Vegas, NV, USA Conference Date: 1990 Apr 8-12
Sponsor: ASCE, New York, NY, USA; American Nuclear Soc, USA
E.I. Conference No.: 13232
Source: Proc 1st Annu Int Top Meet High Level Radioact Waste Manage Part 2. Publ by ASCE, Boston Society of Civil Engineers Sect, Boston, MA, USA. p 1235-1239

Publication Year: 1990
ISBN: 0-87262-751-9
Language: English
Document Type: PA; (Conference Paper) Treatment: T; (Theoretical)
Journal Announcement: 9008
Abstract: A study plan is being developed to guide a multiyear program to assess long-term climate change and optimize the design of protective barriers. A protective barrier alternative is being considered for the

disposal of some low-level radioactive defense waste stored near the surface at the Hanford Site, Washington. These barriers are being designed to limit movement of radionuclides and other contaminants to the accessible environment for at least 1,000 years and possibly as long as 10,000 years. A stepwise approach to climatic data acquisition will be relied on in obtaining needed information for concurrent barrier tasks, and in developing a local climate forecast model. (Edited author abstract) 9 Refs.

Record - 87

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02924945 E.I. Monthly No: EI9007080559

Title: Application of surface geophysics for location of buried hazardous wastes.

Author: Siegrist, Robert L.; Hargett, David L.

Corporate Source: Ayres Associates, Madison, WI, USA

Source: Waste Management & Research v 7 n 4 Dec 1989 p 325-335

Publication Year: 1989

CODEN: WMARD8 ISSN: 0734-242X

Language: English

Document Type: JA; (Journal Article) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 9007

Abstract: Surface geophysical techniques represent powerful tools for investigations involving the delineation of buried hazardous wastes. An investigation to assess an 8 hectare (20 acres) manufacturing plant site for the presence of buried waste material is described. Electromagnetic (EM) conductivity and magnetometry data were collected along continuous profiles and within rectangular systematic grids. The results of this work dispelled concern over several areas rumored to contain buried wastes, but indicated the potential presence of buried materials at three areas. The EM quadrature-phase conductivity data proved to be most definitive as conductivity anomalies were distinct and readily apparent. In an area suspected to contain an abandoned seepage pit, the measured EM conductivities exceeded 25 milli mhos/meter (mmho m** minus **1), more than twice as high as background levels (sandy loam soil/till profile). In two areas suspected of containing buried metal drums, EM conductivity values approached 70 mmho m** minus **1. In all three areas, the buried waste boundaries as predicted by the geophysical anomalies matched very well with the boundaries actually encountered during waste exhumation and clean up. (Edited author abstract) 4 Refs.

Record - 88

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02822943 E.I. Monthly No: EIM8911-042941

Title: Practical approach for evaluating environmental risk.

Author: Mikeska, Gretchen; Baldwin, Andrew

Corporate Source: C-E Environmental Inc, Portland, ME, USA

Conference Title: Environmental Engineering: Proceedings of the 1989 Specialty Conference

Conference Location: Austin, TX, USA Conference Date: 1989 Jul 10-12

Sponsor: ASCE, Environmental Engineering Div, USA; Univ of Texas at Austin, Civil Engineering Dep, Austin, TX, USA; ASCE, Texas Sect, Austin,

TX, USA; American Acad of Environmental Engineers, USA
E.I. Conference No.: 12545
Source: Environ Eng Proc 1989 Spec Conf. Publ by ASCE, New York, NY, USA.
p 264-272

Publication Year: 1989
ISBN: 0-87262-711-X
Language: English
Document Type: PA; (Conference Paper) Treatment: A; (Applications)
Journal Announcement: 8911

Abstract: Risk management and assessment techniques are increasingly being used to project public health risks at hazardous wastes sites. Few studies have quantitatively evaluated the environmental risk at a site and what role that risk plays in specifying site remediation plans. Such a study, referred to as a biota study, was performed for a Superfund Site, where PCBs (polychlorinated biphenyls) are the primary compound of concern. The biota study was conducted using a four-phased approach that combined a small data base of field results with a food web depicting organism interactions. It was then possible to assess the relative concentration of PCBs at each trophic level and determine if site conditions presented a significant environmental risk to the ecosystem. The biota study demonstrated that environmental risk concerns would be addressed if site remediation plans were based on public health risks alone. The integration of a literature review with a focused field program, proved to be a cost-effective approach for evaluating environmental risk. (Author abstract) 9 Refs.

Record - 89

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
02801111 E.I. Monthly No: EI8910110818
Title: Remediation through groundwater recovery and treatment.
Author: Ziegler, Gary J.
Corporate Source: W.C. Services Inc, Woodbury, NJ, USA
Source: Pollution Engineering v 21 n 7 Jul 1989 p 75-79
Publication Year: 1989
CODEN: PLENBW ISSN: 0032-3640
Language: English
Document Type: JA; (Journal Article) Treatment: A; (Applications); G;
(General Review)

Journal Announcement: 8910
Abstract: Alternative methods (to landfills) of site remediation if not mandated by regulations, must be investigated for economic reasons. This article proposes methods to collect the additional data necessary to sufficiently quantify and qualify the needs of the site remediation plan. Various methods of site remediation are discussed with specific emphasis on the use of groundwater as a remediation technique. Subjects covered include geophysical surveys, pumping tests, soil borings, evaluation of alternative remediation methods, and treatment techniques.

Record - 90

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
02659617 E.I. Monthly No: EIM8810-053350
Title: COMPREHENSIVE CLEANUP OF SOIL AND GROUNDWATER USING IN SITU

BIOREMEDIATION-AN INTRODUCTION.

Author: Fournier, Louis B.

Corporate Source: Technical & Business Development, Chadds Ford, PA, USA

Conference Title: TAPPI Proceedings - 1988 Environmental Conference.

Conference Location: Charleston, SC, USA Conference Date: 1988 Apr 18-20

Sponsor: TAPPI, Atlanta, GA, USA

E.I. Conference No.: 11479

Source: Environmental Conference, Proceedings of the Technical Association of the Pulp and Paper Industry 1988. Publ by Tappi Press, Atlanta, GA, USA p 221-226

Publication Year: 1988

CODEN: TECPDP ISSN: 0364-2755

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8810

Abstract: In contrast with conventional waste treatment approaches, in situ treatment allows groundwater and soil to be decontaminated to acceptable levels in relatively short time periods, with minimum site disruption, and with absolute destruction of organic contaminants, to carbon dioxide, water, and halide salts. In situ biodegradation (ISB) has been practiced with petroleum hydrocarbons for over a decade and is now being extended to chlorinated solvents and complex industrial wastes. The technology cannot, however, be used in all locations, and each project must be specifically designed to maximize effectiveness and minimize costs.

(Edited author abstract) 13 refs.

Record - 91

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02641731 E.I. Monthly No: EI8809085146

Title: PROCEEDINGS - 8TH CANADIAN WASTE MANAGEMENT CONFERENCE.

Author: Anon

Corporate Source: Environment Canada, Hull, Que, Can

Publication Year: 1986

ISBN: 0-662-54631-8

Language: English

Document Type: CP; (Conference Proceedings) Treatment: A;
(Applications); T; (Theoretical); X; (Experimental)

Journal Announcement: 8809

Abstract: The volume contains 30 papers presented at the meeting, one of which is in French. The papers are ground under general topics that include building public acceptance, waste disposal and the marine environment, regulatory initiatives, waste reduction, and site remediation. Specific subjects covered include siting of hazardous waste management facilities, incinerator at sea, mobile PCB disposal, generation of electricity from landfill gas, half-rate anaerobic treatment of landfill leachate, and others. Technical and professional papers from this conference are indexed and abstracted with the conference code no. 11022 in the Ei Engineering Meetings (TM) database produced by Engineering Information, Inc.

Record - 92

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02628783 E.I. Monthly No: EIM8808-045963

Title: PROCEEDINGS - 8TH CANADIAN WASTE MANAGEMENT CONFERENCE.

Author: Anon

Conference Title: Proceedings - 8th Canadian Waste Management Conference.

Conference Location: Halifax, NS, Can Conference Date: 1986 Sep 3-5

Sponsor: Environment Canada, Hull, Que, Can; Ontario Waste Management Assoc, Ont, Can; Natl Solid Waste Management Assoc, Washington, DC, USA; Nova Scotia Dep of the Environment, NS, Can; Newfoundland Dep of the Environment, Newfoundl, Can; et al

E.I. Conference No.: 11022

Source: Publ by Environment Canada, Hull, Que, Can 377p

Publication Year: 1986

ISBN: 0-662-54631-8

Language: English

Document Type: CP; (Conference Proceedings)

Journal Announcement: 8808

Abstract: The volume contains 30 papers presented at the meeting, one of which is in French. The papers are grouped under general topics that include building public acceptance, waste disposal and the marine environment, regulatory initiatives, waste reduction, and site remediation. Specific subjects covered include siting of hazardous waste management facilities, incineration at sea, mobile PCB disposal, generation of electricity from landfill gas, high-rate anaerobic treatment of landfill leachate, and others.

Record - 93

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02349933 E.I. Monthly No: EIM8711-075793

Title: IMPACTS OF CERCLA, RCRA AND STATE PROGRAMS ON SITE REMEDIATION: A CASE STUDY.

Author: Siet, Kenneth; Davies, Kathryn L.

Corporate Source: NJDEP, Trenton, NJ, USA

Conference Title: Detection, Control, and Renovation of Contaminated Ground Water. (Proceedings of a Symposium Held in Conjunction with the ASCE Convention.)

Conference Location: Atlantic City, NJ, USA Conference Date: 1987 Apr 27-28

Sponsor: ASCE, Environmental Engineering Div, Committee on Water Pollution Management, New York, NY, USA; US EPA, Office of Ground Water Protection, Washington, DC, USA

E.I. Conference No.: 10305

Source: Publ by ASCE, New York, NY, USA p 197-206

Publication Year: 1987

ISBN: 0-87262-595-8

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8711

Abstract: The major federal programs requiring ground water remedial response actions include RCRA and CERCLA. On the state level New Jersey law makers have enacted a number of statutes which regulate ground water. The various state and federal programs are evolving as distinct programs with separate goals. While all of these programs include requirements for ground water remedial actions, each has developed separate approaches to deal with

the problem in response to each programs distinct statutory limits or goals. The case study presented is of a complex facility with ground water contamination problems from numerous sources. The case study demonstrates how regulatory requirements drive technical decision making for ground water remedial actions. It also points out the dilemma of having overlapping and conflicting regulatory programs at the same site. (Edited author abstract)

Record - 94

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02072580 E.I. Monthly No: EIM8602-009916

Title: DESIGNING AIR MONITORING PROGRAMS FOR REMEDIATION AT HAZARDOUS WASTE SITES.

Author: Schmidt, C. E.; Gordy, D. L.

Corporate Source: Radian Corp, Sacramento, CA, USA

Conference Title: Proceedings - 78th APCA Annual Meeting.

Conference Location: Detroit, MI, USA Conference Date: 1985 Jun 16-21

Sponsor: APCA, Pittsburgh, PA, USA

E.I. Conference No.: 07333

Source: Proceedings, Annual Meeting - Air Pollution Control Association 78th v 6. Publ by APCA, Pittsburgh, PA, USA Pap 85-72. 2, 15p

Publication Year: 1985

CODEN: PRAPAP ISSN: 0099-4081

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8602

Abstract: This paper presents methodology for developing site specific air monitoring programs for hazardous waste site remediation. Air monitoring programs developed for a Superfund site in southern California are used as an example for the discussion. General considerations involved in formulating specific air monitoring programs are presented. Example programs are used to show how monitoring objectives can be realized using several approaches while understanding the advantages and limitations to these approaches. The monitoring program information presented focuses on fugitive gas phase air contaminants. However, the general methodology and technical approach described would include fugitive particulate matter. 8 refs.

Record - 95

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01658489 E.I. Monthly No: EIM8406-044937

Title: COAL TAR REMEDIATION AND ROADWAY CONSTRUCTION.

Author: Sevee, John; Maher, Peter

Corporate Source: Perkins Jordan Inc, Reading, Mass, USA

Conference Title: Proceedings of the 1st Annual Hazardous Materials Management Conference.

Conference Location: Philadelphia, Pa, USA Conference Date: 1983 Jul 12-14

Sponsor: Pollution Engineering Magazine

E.I. Conference No.: 04277

Source: Publ by Tower Conference Management Co, Wheaton, Ill, USA p 530-535

63

Publication Year: 1983
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8406

Record - 96

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
01273437 E.I. Monthly No: EIM8301-006587
Title: RISK ASSESSMENT AS A MEANS OF EVALUATING REMEDIAL ACTION
ALTERNATIVES.
Author: Dawson, G. W.; Brown, S. M.
Corporate Source: Battelle, Pac Northwest Lab, Richland, Wash, USA
Conference Title: Preprints - ASCE Convention & Exposition (October,
1981).
Conference Location: St. Louis, Mo, USA Conference Date: 1981 Oct 26-31
Sponsor: ASCE, New York, NY, USA
E.I. Conference No.: 00917
Source: Preprints - ASCE Convention & Exposition Publ by ASCE, New York,
NY, USA Prepr 81-534, 15p
Publication Year: 1981
CODEN: ACEXE7
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8301

Record - 97

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

197044 94-00993

Radioolytic decomposition of environmental contaminants and site remediation using an electron accelerator

Matthews, S.M.; Boegel, A.J.; Loftis, J.A.

Lawrence Livermore Natl. Lab.

REMEDIATION VOL. 3, NO. 4, pp. 459-481, Publ.Yr: 1993

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V025N01

Halogenated and nonhalogenated hydrocarbon contaminants are currently found in natural waterways, groundwater, and soils as a result of spills and careless disposal practices. The development of proper treatment methodologies for the waste streams producing this environmental damage is now a subject of growing concern. This article is divided into two sections. First, we present data on experimentally measured, radioolytically induced decomposition of hazardous wastes and toxic substances using accelerator-generated bremsstrahlung sources and gamma radiation from cobalt-60. The second section of this article describes the technical aspects of a field-scale radioolytic decomposition site cleanup demonstration using an electron accelerator.

Record - 98

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

196051 93-09000

An integrated chemical and biological treatment (CBT) system for site remediation

Kelley, R.L.; Srivastava, V.; Barkley, N.P.

Inst. Gas Technol., 3424 South State St., Chicago, IL 60616, USA

19. Annual Risk Reduction Engineering Laboratory Hazardous Waste Research

Symposium Cincinnati, OH (USA) 13-15 Apr 1993

19. ANNUAL RISK REDUCTION ENGINEERING LABORATORY HAZARDOUS WASTE RESEARCH

SYMPOSIUM pp. 202-205, Publ.Yr: 1993

U.S. ENVIRONMENTAL PROTECTION AGENCY, CINCINNATI, OH 45268 (USA)

Languages: ENGLISH

Journal Announcement: V024N06

Institute of Gas Technology (IGT) has developed treatment technologies which enhance bioremediation by integrating chemical and biological treatment (CBT) processes for remediation of contaminated soil and sludge. The treatment system combines two remedial techniques: 1) chemical oxidation as the pre-treatment, and 2) biological treatment using aerobic and anaerobic biosystems either in sequence or alone, depending on the waste. The CBT process uses mild chemical treatment to produce intermediates that are biologically degraded, reducing both the cost and risk associated with the more severe process. The CBT process can be applied to a wide range of organic pollutants, including alkenes, chlorinated alkenes, aromatics, substitute aromatics, and complex aromatics. Applicable matrices include soil, sludge, groundwater, and surface water.

Record - 99

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

186381 92-08330

Bioventing and vapor extraction: Innovative technologies for contaminated site remediation

Long, G.

ENSR Consul. and Eng., 1 Executive Dr., Somerset, NJ 08873, USA

J. AIR WASTE MANAGE. ASSOC VOL. 42, NO. 3, pp. 345-348, Publ.Yr: 1992

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V23N6

Bioventing and Vapor Extraction are two technologies which are finding increasing use in performing soil cleanup at hazardous and nonhazardous waste sites. Both processes are characterized by the controlled use of air as a carrier to either remove contaminants from soil or to supply oxygen for aerobic bioremediation of the compounds in the unsaturated zone into less toxic materials.

Record - 100

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

186272 92-08221

Integrated site remediation combining groundwater treatment, soil vapor recovery, and bioremediation

Dey, J.C.; Brown, R.A.; McFarland, W.E.

HAZARDOUS MATER. CONTROL VOL. 4, NO. 2, pp. 32-39, Publ.Yr: 1991

Languages: ENGLISH

Journal Announcement: V23N6

In October 1988, an apparent act of vandalism caused a large gasoline spill at a bulk petroleum storage plant in southern New Jersey. Approximately 8,400 gallons of premium unleaded gasoline were spilled onto the ground around four underground storage tanks used for bulk petroleum storage. Plant personnel responded immediately with measures to protect groundwater and assure safety of workers in the area. Approximately 700 yd super(3) of soil was removed from the spill area to a depth of 18-24 inches and stockpiled on 6-mil polyethylene sheeting. The excavated area was covered with polyethylene sheeting and clean fill material to cap the spill area. This temporary response provided a safer work area for remediation workers and plant employees and allowed the bulk plants to be reopened for normal operation during further cleanup operation.

Record - 101

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

184985 92-06934

Tax assessment of contaminated property: Tax breaks for polluters?

Keen, B.H.

Univ. Michigan Law Sch., Ann Arbor, MI, USA

BOSTON COLL. ENVIRON. AFF. LAW REV VOL. 19, NO. 4, pp. 885-927, Publ.Yr: 1992

Languages: ENGLISH

Journal Announcement: V23N5

Contaminated property is worth less than similar "clean" property because the costs and uncertainties involved in complying with federal and state environmental laws adversely affect the fair market value of contaminated property. All property tax assessment should reflect the decline in market value due to the presence of hazardous substances regardless of the owners' culpability. Courts and administrative tax boards have been unable to develop a methodology for measuring the impact of contamination on value. Therefore, to ensure uniform tax assessments and minimize uncertainty, each state should enact a statute or administrative rule that sets forth a specific methodology for valuing contaminated property.

Record - 102

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

181902 92-03851

Innovative technologies for contaminated site remediation: Focus on bioremediation

Gabriel, P.F.

SEA Consult., Inc., Cambridge, MA, USA

J. AIR WASTE MANAGE. ASSOC VOL. 41, NO. 12, pp. 1657-1660, Publ.Yr: 1991

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V23N3

Bioremediation, the process by which hazardous substances are degraded by microorganisms, is at the forefront of a larger group of innovative remediation technologies being applied at hazardous waste sites worldwide. Although the process of bioremediation has been utilized for decades in the field of wastewater engineering, its application to soils and groundwater at hazardous waste sites is fairly new and still undergoing intensive development. This article is intended to provide both an overview of the state of practice of bioremediation in hazardous waste remediation operations, and an inventory of issues to consider when evaluating the use of this technology for a contaminated site.

Record - 103

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

179024 92-00973

Implications of the upper bound and average exposure scenario on risk management decisions for contaminated site remediation

Kindzierski, W.B.; Hrudey, S.E.

Stearns and Conrad Eng., 789 W. Pender St., Suite 1200, Vancouver, B.C. V6C 1H2, Canada

84. Annual Meeting of the Air and Waste Management Association Vancouver, B.C. (Canada) 16-21 Jun 1991

p. 256, Publ.Yr: 1991

AIR AND WASTE MANAGEMENT ASSOCIATION, PITTSBURGH, PA (USA)

SUMMARY LANGUAGE - ENGLISH; Summary only.

Languages: ENGLISH

Journal Announcement: V23N1

Incorporating the average exposure to a risk assessment will allow a range of estimates, average to upper bound, to represent the upper limits of the health risk. This practice can provide an improved characterization

of risk information and allow risk managers to more-effectively assess risk reduction methods where other balancing factors (e.g. costs) must also be considered. This practice considered together with an improved understanding of biological plausibility factors are necessary to ensure that practical and effective risk reduction measures are achieved. The approach described here offers risk managers greater opportunities to more fully utilize their knowledge and responsibilities towards the goal of reducing the overall health risks arising from contaminated sites.

Record - 104

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

177719 91-08668

Challenges when using the moving lake method for site remediation

Fleming, J.W.

8381 Post Rd., Allison Park, PA 15101, USA

84. Annual Meeting of the Air and Waste Management Association

Vancouver, B.C. (Canada) 16-21 Jun 1991

p. 30, Publ.Yr: 1991

AIR AND WASTE MANAGEMENT ASSOCIATION, PITTSBURGH, PA (USA)

SUMMARY LANGUAGE - ENGLISH; Summary only.

Languages: ENGLISH

Journal Announcement: V22N6

Remediation processes including in situ, excavation, and Moving Lake are reviewed. Operational problems are described when these types of processes are called upon for remediation of large contaminated sites, and where there is a natural high water table. The Moving Lake Method of site remediation causes all contaminated soil at the site to be exposed to biological action and other processing if necessary. This is accomplished by causing a biologically active lake to move through the contaminated area. Lowcost dragline methods are employed for earthmoving, and this cost is usually the largest cost when remediating by excavation or Moving Lake methods. The MOVING LAKE METHOD will be cost-competitive with other remediation methods.

Record - 105

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

177666 91-08615

Ambient air toxic monitoring and analysis during a Superfund site remediation utilizing an on-site field laboratory

Sherman, W.E.; Camp, H.; Fitzpatrick, M.E.; Weiss, B.

Enesco Inc., 2200 Cottontail Lane, Somerset, NJ 08875, USA

84. Annual Meeting of the Air and Waste Management Association

Vancouver, B.C. (Canada) 16-21 Jun 1991

p. 124, Publ.Yr: 1991

AIR AND WASTE MANAGEMENT ASSOCIATION, PITTSBURGH, PA (USA)

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V22N6

Enesco performed real-time analysis of dimethyl mercury during the remediation of a Superfund site using a mobile laboratory. Due to the toxic nature of DMM, samples were collected every 30 minutes on Tenax tubes using low-flow Gilian pumps. The mobile lab received the samples and analyzed

them by GC/MS within 30 minutes. A positive result required additional measures to be taken by the consulting engineers to ensure the safety of the workers and surrounding community. The mobile lab was set-up and mobilized in less than 2 weeks, equipped with 3 HP GC/MS's, and staffed full-time by 5 Enesco scientists. Due to the recent development of the statement of work for the analysis of air toxics at Superfund sites under the USEPA Contract Lab program, air pathway analysis will now become an integral part of site remediation. The use of a mobile laboratory facilitates the real-time analysis of samples to ensure on-going safety as remediation continues.

Record - 106

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

174482 91-05431

Chromium-contaminated site remediation for POTW expansion

Hagarty, E.P.; Gruninger, R.M.; Balog, G.G.; Patel, M.A.; Sokhey, A.S.

WATER ENVIRON. TECHNOL VOL. 3, NO. 4, pp. 53-57, Publ.Yr: 1991

Languages: ENGLISH

Journal Announcement: V22N4

Record - 107

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

157452 90-07462

A case study of site remediation or lightning strikes twice

Tone, M.J.

Nixon Hargrave Devans and Doyle, 990 Stewart Ave., Garden City, NY 11530,
USA

83. Annual Meeting of the Air & Waste Management Association
Pittsburgh, PA (USA) 24-29 Jun 1990

83. ANNUAL MEETING OF THE AIR & WASTE MANAGEMENT ASSOCIATION p. 1,
SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V21N5

A warehouse containing wild birdseed and various agricultural products was destroyed by a fire that started when lightning struck the warehouse roof. Water from the firefighting efforts ran off the property, dispersing fertilizers and pesticides with it into the yards of neighboring residents.

Although local health officials and a contractor determined that there was no health hazard at the site, EPA issued an administrative order, under CERCLA 106, demanding that the Company investigate and remediate the property and neighborhood. After completing the investigation and remediation, the Company asserted the Act of God defense and sought reimbursement from the Fund. The presentation discusses the regulatory and judicial ramifications of site remediation that was required because of an Act of God, and EPA's response to a claim for reimbursement from the Fund.

Record - 108

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

156428 90-06438

A marine biotechnological approach for coastal and estuarine site remediation and pollution control

Portier, R.J.; Ahmed, S.I.

Inst. Environ. Stud., Louisiana State Univ., Baton Rouge, LA 70806, USA

MAR. TECHNOL. SOC. J VOL. 22, NO. 2, pp. 6-14, Publ.Yr: 1988

SUMMARY LANGUAGE - ENGLISH; Special issue: Sea Grant research -- NOAA.

Languages: ENGLISH

Journal Announcement: V21N5

Recent advances in treatment using marine-source microorganisms and surfaces are briefly described in current efforts in addressing both industrial effluents and abandoned hazardous wastes, research funded by state and federal agencies and the private sector. A biological treatment process employing immobilized microbial populations was field-tested on contaminated ground waters and industry effluent having elevated concentrations of volatile organics, semi-volatile organics and organic pesticides, respectively. The process, consisting of a packed bed biological reactor, containing specific adapted microbial strains immobilized on a porous diatomaceous earth support has operated in a plug flow configuration over an extended period at several coastal zone locations.

Record - 109

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

155392 90-05402

Site remediation of heavy metals contaminated soils and groundwater at a former battery reclamation site in Florida

Trnovsky, M.; Oxer, J.P.; Rudy, R.J.; Hanchak, M.J.; Hartsfield, B.; Abbou, (ed.)

Ecology and Environment, Inc., 2574 Seagate Dr., Tallahassee, FL 32301, USA

World Conference on Hazardous Waste Budapest (Hungary) 25-31 Oct 1987

HAZARDOUS WASTE: DETECTION, CONTROL, TREATMENT. PART B pp. 1581-1590,

Publ.Yr: 1988

ELSEVIER PUBLISHING COMPANY, NEW YORK, NY (USA)

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V21N4

Heavy metals contamination of soils, surface water, sediments, and groundwater was investigated and feasible remedial alternatives were evaluated for the Sapp Battery Superfund site in northern Florida. High lead concentrations were found in all four media. The upper soil horizons contained up to 135,000 ppm lead. Contaminated groundwater in the surficial and intermediate aquifers was found to be migrating into the deeper Floridan Aquifer as a result of the karst characteristics of the site. Remedial alternatives were evaluated for the removal and treatment of 95,000 m super(3) (124,250 yd super(3)) of soil and sediments and the treatment of 2.63 m super(3)/min (1.0 MGD) of groundwater.

Record - 110

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

153944 90-03954

Palmerton Zinc Superfund site remediation strategy

Tan, P.M.; Hemphill, D.D. (ed.)

U.S. Environ. Prot. Agency, Hazardous Waste Manage. Div., Philadelphia,

PA 19107, USA

University of Missouri's 22. Annual Conference on Trace Substances in Environmental Health St. Louis, MO (USA) 23-26 May 1988

TRACE SUBSTANCES IN ENVIRONMENTAL HEALTH -- XXII pp. 296-305,

Publ.Yr: 1988

UNIVERSITY OF MISSOURI, COLUMBIA, MO (USA)

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V21N3

The Palmerton Zinc Superfund Site is a former zinc smelting operation located in Palmerton, PA. Operation of this plant since the turn of the century has caused large quantities of zinc, cadmium, lead and copper to be emitted into the atmosphere in the vicinity of the plant. As a result of these emissions significant concentrations of these heavy metals in the soil have been measured within a large area surrounding the plant. Public health concerns related to these concentrations has, in part, caused the EPA to list this area as a superfund site on the National Priorities List (NPL). To perform an efficient Remedial Investigation/Feasibility Study at this site EPA needed to determine the extent and magnitude of the problem. In addition to soil sampling, other media including groundwater and surface water were also analyzed. Also, studies which documented the chronic effects of heavy metal contamination on aquatic and terrestrial animals were initiated.

Record - 111

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

153666 90-03676

The role of risk assessment in the U.S. hazardous waste site remediation program

Abbau, R. (ed.); Huggins, A.; Nilsson, R.; DeFilippi, J.A.

ERM Inc., 999 West Chester Pike, West Chester, PA 19380, USA

World Conference on Hazardous Waste Budapest (Hungary) 25-31 Oct 1987

HAZARDOUS WASTE: DETECTION, CONTROL, TREATMENT. PART A pp. 149-159,

Publ.Yr: 1988

ELSEVIER PUBLISHING COMPANY, NEW YORK, NY (USA)

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V21N3

Risk assessment methods are being used quite extensively in evaluating hazardous waste sites in the US. Under Superfund, EPA seeks to quantify risks posed by abandoned sites and to compare remedial alternatives for these sites in terms of risk, cost and other factors. This paper will describe the authors' experiences in applying the EPA guidance for Superfund Risk Assessments at a series of sites.

Record - 112

<DIALOG File 41: (c) 1993 Cambridge Scientific Abstracts>

131351 87-06858

Application of risk assessment to selection among site remediation alternatives

Bell, J.M. (ed.); Salmon, E.J.; Brown, R.A.

Health, Saf. and Risk Manage., Intellus Corp., Irvine, CA 92715, USA

41. Industrial Waste Conference West Lafayette, IN (USA) 13-15 May
1986

PROCEEDINGS OF THE 41st INDUSTRIAL WASTE CONFERENCE. MAY 13, 14, 15,
1986, PURDUE UNIVERSITY pp. 261-271, Publ.Yr: 1987

LEWIS PUBLISHERS, CHELSEA, MI (USA)

SUMMARY LANGUAGE - ENGLISH

Languages: ENGLISH

Journal Announcement: V18N5

The Environmental Protection Agency (EPA) mandated, that any remedial decisions and strategies related to hazardous substances be scientifically and technologically sound, economically efficient, and socially equitable. This calls for application of risk assessment/management methodologies which the EPA's Administrator recognized as the most important and most difficult role emerging in the 1980's. It becomes necessary to develop well founded and consistent procedures as well as uniform and coordinated approaches that enable deciding if, when, and how remediation of risks arising from hazardous waste sites should be undertaken.

Record - 113

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03623868 EDB-94-039834

Title: Modeling studies of gas venting and steam injection for NAPL Site remediation

Author(s): Forsyth, P.A. (Univ. of Waterloo, Ontario (Canada))

Title: Engineering hydrology

Conference Title: Symposium on engineering hydrology

Conference Location: San Franicsco, CA (United States) Conference Date: 25-30 Jul 1993

Publisher: New York, NY (United States) American Society of Civil Engineers

Publication Date: 1993 p 958-963 (1252 p)

Report Number(s): CONF-9307147--

Language: English

Availability: American Society of Civil Engineers, 345 East 47th Street, New York, NY 10017-2398

Abstract: A fully coupled, fully implicit method for simulating gas injection and steam injection for in situ remediation of sites contaminated with volatile NAPL is presented. Numerical results are given for some two dimensional axisymmetric scenarios.

Record - 114

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03616896 EDB-94-026889

Title: Subsurface cutoff walls still valuable in site remediation role

Author(s): Mutch, R.D. Jr. (Eckenfelder Inc., Mahwah, NJ (United States));

Ash, R.E. IV (Eckenfelder Inc., Mahwah, NJ (United States). Waste Management Div.)

Source: Hazmat World (United States) v 6:2. Coden: HMWOED ISSN: 0898-5685

Publication Date: Feb 1993 p 37-45

Language: English

Abstract: In this age of RCRA, SARA and clean closures, many people have called into question the continuing value of subsurface cutoff walls as a remediation tool. Critics say cutoff walls are a containment rather than a treatment technology, and that they are ineffective, because even the most well-built leak. They are substantially correct.

Subsurface cutoff walls are a containment technology, and they do leak to some degree. Why then do cutoff walls continue to be an integral part of many Superfund and other remediation efforts? The need for cutoff walls stems from the limited capabilities of available soil and waste treatment technologies, especially when considering the complexity and size of many contaminated sites. Permanent disposal rarely is feasible at: large landfills; sites containing dense, non-aqueous-phase liquids (DNAPLs); and large industrial complexes. Over the last eight or nine years, DNAPL chemicals have come to be recognized as perhaps the most intractable problem of subsurface site remediation. This class of chemicals, also referred to as sinkers, primarily includes chlorinated solvents, such as trichloroethylene (TCE), methylene chloride, tetrachloroethylene and PCBs. DNAPL chemicals entering the subsurface tend to sink vertically through groundwater systems.

Record - 115

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03599115 EDB-94-015081

Title: Fundamentals of soil science needed for site remediation

Author(s): Grube, W.E. Jr. (Environmental Protection Agency, Cincinnati, OH
(United States))

Title: Proceedings of national research and development conference on the
control of hazardous materials

Conference Title: National research and development conference on the
control of hazardous materials

Conference Location: Anaheim, CA (United States) Conference Date: 20-22
Feb 1991

Publisher: Greenbelt, MD (United States) Hazardous Materials Control
Research Institute

Publication Date: 1991 p 57-64 (549 p)

Report Number(s): CONF-910287--

Language: English

Availability: Hazardous Materials Control Research Institute, 7237 Hanover
Parkway, Greenbelt, MD 20770-3602 (United States)

Abstract: This lecture is intended for the chemist, biologist, civil
engineer, chemical engineer and others who have experienced a largely
singular disciplinary education and have been thrust into research,
practical and/or regulatory issues involving soil or other earth
materials as a major component. It also will be helpful to experienced
workers who are not aware of the perspectives available from historic
data and interpretations from the soil sciences. The topics included,
and the points of detailed discussion, are provided as prompts so that
(1) the remedial site investigator may be better assured that
peripheral aspects of site characterization are not missed, and (2)
knowledge already available from soil scientists, agronomists,
geologists and soils engineers is effectively applied. 31 refs., 2
figs., 3 tabs.

Record - 116

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03598863 EDB-94-014829

Title: VOC emission control technologies for site remediation

Author(s): Chu, R.J. (Roy F. Weston, Inc., Woodland Hills, CA (United States))

Title: Proceedings of national research and development conference on the control of hazardous materials

Conference Title: National research and development conference on the control of hazardous materials

Conference Location: Anaheim, CA (United States) Conference Date: 20-22 Feb 1991

Publisher: Greenbelt, MD (United States) Hazardous Materials Control Research Institute

Publication Date: 1991 p 384-388 (549 p)

Report Number(s): CONF-910287--

Language: English

Availability: Hazardous Materials Control Research Institute, 7237 Hanover Parkway, Greenbelt, MD 20770-3602 (United States)

Abstract: Vapor extraction and air stripping are common treatment techniques used for the removal of volatile organic compounds (VOCs) from soil and groundwater. In the past, the extracted or stripped VOCs were simply discharged to the air. However, in locales such as Southern California, VOCs must be controlled and removed to nondetectable levels or health-based limits. Often, the final airstream must not pose a health risk of more than one in a million. There are several technologies available to control VOC emissions. Granular activated carbon is one of the most effective materials for use in removing VOCs. When the use of activated carbon becomes prohibitive or not feasible, other methods such as thermal oxidation, catalytic oxidation, vapor condensation and wet scrubber absorption must be employed. This paper describes the different types of feasible VOC control technologies in use today. Descriptions of process operation, limitations, applicability, advantages and disadvantages are included. A few innovative technologies are described. Finally, factors which should be considered by the remedial designer in his selection of the appropriate off-gas control technology are listed. 11 refs., 7 figs., 2 tabs.

Record - 117

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03592203 EDB-94-008169

Title: LEEP[sup SM] - low energy extraction process for on-site remediation of soil, sediment and sludges

Author(s): Steiner, W.; Rugg, B. (ART International, Inc., Denville, NJ (United States))

Title: Air Waste Management Association 85th annual meeting

Conference Title: 85. annual meeting of the Air and Waste Management Association (AWMA)

Conference Location: Kansas City, MO (United States) Conference Date: 21-26 Jun 1992

Publisher: Pittsburgh, PA (United States) Air Waste Management Association

Publication Date: 1992 p 41 (301 p)

Report Number(s): CONF-9206114--

Language: English

Availability: Air Waste Management Association, P.O. Box 2861, Pittsburgh, PA 15230 (United States)

Abstract: LEEP[sup SM] is a solvent extraction technology which uses common organic solvents to leach the contaminants from the solids and then concentrates them. The contaminants are leached from the solids with a hydrophilic leaching solvent in a continuous processor. The contaminants are then transferred to a small volume of a hydrophobic solvent in a liquid-liquid extraction operation. The leaching solvent is recycled and the hydrophobic solvent with the contaminants, is removed for off-site disposal. Large volume reductions of the contaminated stream (100-150 times) are attainable, thus reducing the disposal cost. Decontaminated solids are returned to the environment. To date, ART International has successfully completed several bench scale treatability studies including harbor sediment, industrial landfill material and subsoil contaminated with high levels of PCBs, refinery sludge containing high levels of oil grease, semi-volatile organics and heavy metals. ART International has completed a successful study with a tar contaminated soil sample from a former manufactured gas plant site. ART International offers treatability studies both at the bench scale and at the pilot scale to assess the applicability of the LEEP[sup SM] technology for the clean-up of contaminated sites. A pilot plant, capable of nominally processing 200 lb/hr of solids, has been constructed and experimental studies are underway.

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03592201 EDB-94-008167

Title: Site remediation soils handling, incineration and site closeout challenges and solutions

Author(s): Young, D.T.; Dasch, J.C. (Ogden Waste Treatment Svcs, Inc., San Diego, CA (United States)); Ives, J.A. (ARCO Alaska, Inc., Anchorage (United States))

Title: Air Waste Management Association 85th annual meeting

Conference Title: 85. annual meeting of the Air and Waste Management Association (AWMA)

Conference Location: Kansas City, MO (United States) Conference Date: 21-26 Jun 1992

Publisher: Pittsburgh, PA (United States) Air Waste Management Association

Publication Date: 1992 p 37 (301 p)

Report Number(s): CONF-9206114--

Language: English

Availability: Air Waste Management Association, P.O. Box 2861, Pittsburgh, PA 15230 (United States)

Abstract: This paper discusses some of the challenges and solutions during the remediation of various types of soils in Alaska also the closeout of the Alaska project. This soil remediation project uses the Ogden Environmental Service, Inc. (OES) proprietary transportable Circulating Bed Combustor (CBC). Key challenges involve the soil handling and feeding/incineration interface. The Trial Burn for the PCB-contaminated soil at this site was conducted with the site soils having the maximum PCB concentration, without spiking, with PCB liquids brought from off-site. The resulting PCB levels averaged only 600 ppm, the lowest value ever attempted in a trial burn trying to demonstrate 99.999% destruction removal efficiency. Trial burn results using CBC temperatures as low at 1600[degrees]F are discussed. A challenge to soil handling/pre-thawing, drying, and feeding occurred with the Alaska remediation project with the greater-than-expected fine silt in the soil. Solutions involved redesign of the soils handling/drying equipment and the soils feed equipment, and The result was a dramatic [approximately]100% increase in overall soil handling and CBC processing rate. Operating experience with the equipment through a period of rain and extreme cold indicated production [open quotes]bottle-necks[close quotes] in several areas. Upgrades which will be discussed related in production increases of about 20%. Equipment availability averaged over 86% over the 1990-1991 annual reporting period including the Alaskan winter. Alaska Project closeout involved the final incineration of all stockpiles soils and miscellaneous contaminated wastes such as liner, scrap, etc. The stockpile area had to be certified [open quotes]clean[close quotes] of the PBC

contamination. Also, buildings and equipment must be decontaminated and prepared for off-site transport and reuse. The key challenges and solutions for such a large PCB-contaminated soil site closeout will be discussed.

Record - 119

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03581288 EDB-93-160166

Title: Sensors in outdoor environmental monitoring and site remediation

Author(s)/Editor(s): Wise, B.M.

Corporate Source: Pacific Northwest Lab., Richland, WA (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Conference Title: National Institute of Standards and Technology (NIST)

workshop on gas sensors

Conference Location: Gaithersburg, MD (United States) Conference Date:

8-9 Sep 1993

Publication Date: Sep 1993 (5 p)

Report Number(s): PNL-SA-23102 CONF-9309247-2

Order Number: DE94001671

Contract Number (DOE): AC06-76RL01830

Language: English

Availability: OSTI; NTIS; GPO Dep.

Abstract: A special session on sensors in outdoor environmental monitoring

and site remediation was held as part of the NIST Workshop on Gas

Sensors. This manuscript summarizes the main points of the workshop.

Application areas, issues of concern, and potentially fruitful areas

for further research and development were discussed. The main

conclusion of the group was that the problems and potential solutions

to problems in environmental monitoring were common to other

application areas of sensing as well. Of particular concern to the

group were the many barriers to final development and commercialization

of sensors. Barriers included lack of information on potential markets

lack of support of development, (as opposed to more basic research),

and difficulties in developing the final packaging for a device. The

characterization and development of chemically selective materials for

sensor coatings was viewed by the group as a particularly important

area for future research.

Record - 120

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03565397 EDB-93-144275

Title: An industry's role in applying innovative technologies to site remediation

Author(s): Pardieck, D.L. (Ciba-Geigy Corp., Greensboro, NC (United States)); Hallett, P.D. (Ciba-Geigy Corp., McIntosh, AL (United States))

Conference Title: 1992 annual meeting of the Geological Society of America (GSA)

Conference Location: Cincinnati, OH (United States) Conference Date: 26-29 Oct 1992

Source: Geological Society of America, Abstracts with Programs (United States) v 24:7. Coden: GAAPBC ISSN: 0016-7592

Publication Date: 1992 p A72

Report Number(s): CONF-921058--

Language: English

Abstract: The use of innovative technologies in remediation activities is strongly promoted by Superfund. The Superfund site remediation process includes site characterization and remedy selection, often supplemented by treatability studies, remedial design and finally remedial action.

The initial remedy selection may utilize information derived from treatability studies conducted simultaneously with the remedy selection process. However, remedial technologies, including innovative technologies, may be tentatively selected for application without the prior laboratory or field testing often necessary to confirm the selection. In these cases, the treatability studies are performed during the Remedial Design stage and function to determine the applicability of the innovative technology, as well as, develop site-specific design parameters. Ciba-Geigy technical staff systematically assesses contaminant types and site conditions for the potential application of innovative technologies. Bioremediation, soil flushing, soil vapor extraction (SVE) coupled with thermal treatment, low temperature thermal desorption (LTTD) and dechlorination (especially base catalyzed decomposition) are being evaluated. Three of these, soil flushing, SVE and LTTD, have progressed into the Remedial Design phase treatability studies, and show reasonable promise for success under the conditions present at several Ciba-Geigy sites.

Record - 121

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03557965 EDB-93-136843

Title: Opportunities of separation technologies for cost-effective site remediation

Author(s): Sikdar, S.K. (Environmental Protection Agency, Cincinnati, OH (United States). Risk Reduction Engineering Lab.)

Title: Emerging separation technologies for metals and fuels

Author(s)/Editor(s): Lakshmanan, V.I.; Bautista, R.G.; Somasundaran, P. (eds.)

Conference Title: Symposium on emerging separation technologies for metals and fuels

Conference Location: Palm Coast, FL (United States) Conference Date: 13-18 Mar 1993

Publisher: Warrendale, PA (United States) Minerals, Metals and Materials Society

Publication Date: 1993 p 353-354 (492 p)

Report Number(s): CONF-9303107--

ISBN: 0-87339-205-1

Language: English

Availability: The Minerals, Metals and Materials Society, 420 Commonwealth Drive, Warrendale, PA 15086 (United States)

Abstract: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as the Superfund legislation, and its reauthorization called Superfund Amendments and Reauthorization Act (SARA) of 1986, provide guidance for the cleanup of abandoned contaminated sites. In this presentation the author will analyze the various Superfund problems, i.e. organic or metal contamination in all three matrices, air, water and soil in terms of their amenability to separation technologies for volume reduction. The author will critically examine the roles various techniques, such as soil vapor extraction, membrane technologies, extraction (including supercritical extraction), and adsorption methods, play. The author reviews the state of the art and speculates on future technologies that offer unusually high separation efficiencies.

Record - 122

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03549478 EDB-93-128356

Title: Integrated remediation technology provides rapid site remediation

Author(s): Keegan, J.; Bosshard, B.; Ott, D. (Terra Vac, Costa Mesa, CA
(United States))

Title: Proceedings of the seventh national outdoor action conference and
exposition

Conference Title: 7. national outdoor action conference and exposition

Conference Location: Las Vegas, NV (United States) Conference Date: 25-27
May 1993

Publisher: Dublin, OH (United States) Ground Water Management

Publication Date: 1993 p 3-13 (755 p)

Report Number(s): CONF-9305192--

Language: English

Availability: Ground Water Management, 6375 Riverside Drive, Dublin, OH
43017 (United States)

Abstract: An innovative process is being applied to the remediation of both groundwater and soil simultaneously. This process combines vacuum extraction, groundwater recovery, and enhanced bioremediation for an effective site remediation process. Dual Extraction[trademark], developed by Terra Vac, is an in situ process which recovers liquid, vaporous, dissolved and adsorbed contaminants from the subsurface while enhancing the biodegradation of contaminants in the subsurface. Dual Extraction[trademark] has successfully been utilized at a number of sites contaminated with Volatile Organic Compounds (VOC's). Some of these sites presented a low soil permeability which limited traditional recovery and bioremediation methods. Dual Extraction[trademark] has been successful in remediating such sites with increased recovery rates, increased radius of influence and decreased remediation times. Several case studies are presented demonstrating the effectiveness of the Dual Extraction[trademark] technology in each of the following areas: 1. Enhanced bioactivity due to the application of dual extraction. 2. Increased groundwater recovery rates. 3. Recovery of VOCs above and below the static water level. 4. Increased recovery rates of VOCs compared to conventional remediation techniques. A technology that demonstrates the above improvements will result in shorter remediation times frames and yield significant cost savings for a number of site cleanups. 2 refs., 7 figs., 1 tab.

Record - 123

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03547440 GRA-93-82849; EDB-93-126318

Title: Alternating current electrocoagulation for superfund site
remediation

Author(s)/Editor(s): Barkley, N.P.; Farrell, C.W.; Gardner-Clayson, T.W.

Corporate Source: Electro-Pure Systems, Inc., Amherst, NY (United States)

Publication Date: 1993 (8 p)

Report Number(s): PB-93-205144/XAB

Contract Number (Non-DOE): EPA-R-816205

Note: Pub. in Jnl. of Air and Waste Management Association, 1993. See also

PB-143-652

Language: English

Availability: NTIS

Abstract: The technical and economical feasibility of alternating current electrocoagulation (ACE) was evaluated for a 2-year period. ACE is an electrochemical technology where highly-charged aluminum polyhydroxide species are introduced into aqueous media for the removal of suspended solids, oil droplets, and soluble ionic pollutants. ACE can break stable aqueous colloidal suspensions of up to 10% total solids and stable emulsions containing up to 5% oil. Major operating parameters have been defined for different classes of effluents based on experimental results using complex synthetic soil slurries and metals. Test results indicate that ACE produces aqueous and solid separations comparable to those produced by chemical flocculent additions, but with reduced filtration times and sludge volumes. The technology has application where removal of soluble and suspended pollutants from effluents is required, and in the recovery of fine-grained products from process streams. The technology however, has not yet been demonstrated at full-scale for Superfund site remediation. Summarized are the principal results of the SITE research program and results of ACE treatment on some different classes of industrial effluents, not part of the SITE Program.

Record - 124

< DIALOG File 103: (c) format only 1994 Dialog Info. Svcs. >

03511160 GRA-93-52577; EDB-93-090035

Title: Program for providing engineering technical assistance to site
remediation managers

Author(s)/Editor(s): Blaney, B.L.

Corporate Source: Environmental Protection Agency, Cincinnati, OH (United
States). Risk Reduction Engineering Lab.

Publication Date: 1992 (7 p)

Report Number(s): PB-93-185809/XAB EPA-600/A-93/097

Note: Proceedings for 1992 International Symposium on Environmental
Contamination in Central and Eastern Europe, Budapest, Hungary, October
12-16, 1992, 297-300. See also PB-92-205657 and PB-93-105591

Language: English

Availability: NTIS

Abstract: The Office of Research and Development (ORD) of the U.S.

Environmental Protection Agency (USEPA) provides technical support to
USEPA Regional Offices which are responsible for overseeing and/or
implementing the remediation of contaminated sites. As a result, ORD
has developed a number of effective mechanisms for providing timely,
practical and high quality technical support on such site remediation
projects, and has produced a variety of technology transfer documents
on the topic. The paper describes these activities, with particular
emphasis on the program of the USEPA ORD Risk Reduction Engineering
Laboratory's program to deal with engineering remediation problems.

Record - 125

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03509467 EDB-93-088342

Title: Case history update: RCRA waste site remediation by telerobotic methods

Author(s): Yemington, C.R. (Sonsub, Inc., Houston, TX (United States)); Stone, J. (Martin Marietta Energy Systems, Oak Ridge, TN (United States))

Title: Proceedings of federal environmental restoration conference and exhibition

Conference Title: 1992 Hazardous Materials Control Research Institute (HMCRI) federal environmental restoration conference and exhibition

Conference Location: Vienna, VA (United States) Conference Date: 15-17 Apr 1992

Publisher: Greenbelt, MD (United States) Hazardous Materials Control Resources Inst.

Publication Date: 1992 p 358-360 (472 p)

Report Number(s): CONF-9204110--

Contract Number (DOE): AC05-84OR21400

ISBN: 1-56590-005-7

Language: English

Availability: Hazardous Materials Control Resources Institute, 7237 Hanover, MD 20770-3602 (United States)

Abstract: This paper presents a summary of the first 18 months of closure work at the Kerr Hollow Quarry site on the DOE reservation at Oak Ridge, Tennessee. Closure work includes recovery and processing of explosive, toxic and radioactive waste. As of January 1992, more than 10,000 items had been processed and removed from the quarry, exclusively by remotely operated equipment. Drums, buckets, tubing assemblies and other containers are being shredded to react any explosive contents. Concussion and projectiles are controlled by operating the shredder under 30 feet of water. The performance of the shredder, the effectiveness of the approach, production rates and maintenance requirements are addressed in the paper. To avoid exposing personnel to hazards, all work in the restricted area is done remotely. Two remotely operated vehicles were used to clear a pad, set a stand and install the 200-hp shredder. Some materials exposed by shredding are stable in water but react when exposed to air. In addition, radioactive items are mixed in with the other wastes. Safety considerations have therefore led to use of remote techniques for handling and examining materials after recovery. Deteriorated gas cylinders, which may contain pressurized toxic materials, are recovered and handled exclusively by remotely operated equipment. Waste retrieval work at the Kerr Hollow Quarry has proven the capability and cost-effectiveness of remotely operated equipment to deal with a wide variety of hazardous materials in an unstructured waste site

environment. A mixture of radioactive materials, toxic chemicals, explosives and asbestos has been found and processed. Remotely operated vehicles have retrieved, sorted and processed more than 10,000 items including drums, buckets, pipe manifolds, gas cylinders and other containers.

Record - 126

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03476239 CANM-93-0E5218; EDB-93-055115

Title: R, D and D [research, development and demonstration] needs and priorities for the DESRT [Development and Demonstration of Site Remediation Technology] program

Author(s): Mendonca, L.; Whiffen, B.; Pollock, T. (CH2M Engineering Ltd., Waterloo, ON (Canada))

Title: GASReP/DESRT: Proceedings [of the] 2nd annual symposium on groundwater and soil remediation

Corporate Source: Environment Canada, Ottawa, ON (Canada). Environmental Protection Service

Conference Title: 2nd annual symposium on groundwater and soil remediation

Original Conference Title: 2e symposium annuel sur la restauration des eaux souterraines et des sois contaminés

Conference Location: Vancouver (Canada) Conference Date: 25-26 Mar 1992

Publication Date: [1992] p 1-23, Paper 6 (427 p)

Report Number(s): EC/EPS-CE04274 CONF-9203248--^ MICROLOG--92-04404^ CE--04274

Language: English

Availability: PC Environment Canada Departmental Library, Att: Pierre Trudel, Acquisitions, 351 St. Joseph Blvd., 2nd Fl., Ottawa, ON, CAN K1A 0H3; MF CANMET/TID, Energy, Mines and Resources Canada, 555 Booth St., Ottawa, Ont., Canada K1A 0G1 PC

Abstract: A project was carried out to define the needs and priorities of Canadian research, development and demonstration in the DESRT (Development and Demonstration of Site Remediation Technology) program, part of the National Contaminated Sites program. The project approach consisted of two parts: defining the nature of the problems at contaminated sites in Canada, and summarizing the technologies and research needs applicable to site characterization, assessment and remediation. Research needs are identified for biological above ground and in-situ treatment, thermal treatment, soil washing, dechlorination, solvent extraction, photolysis, and in-situ aeration. Each of these technologies is ranked for its potential to solve Canadian high priority problems and orphan site problems. General bioremediation research and development needs are identified. 75 refs., 10 tabs.

Record - 127

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03474696 CANM-93-0E5216; EDB-93-053572

Title: Overview of the Development and Demonstration of Site Remediation Technology (DESRT) program

Author(s): Hill, G.H. (Environment Canada, Hull, PQ (Canada))

Title: GASReP/DESRT: Proceedings [of the] 2nd annual symposium on groundwater and soil remediation

Corporate Source: Environment Canada, Ottawa, ON (Canada). Environmental Protection Service

Conference Title: 2nd annual symposium on groundwater and soil remediation

Original Conference Title: 2e symposium annuel sur la restauration des eaux souterraines et des sols contaminés

Conference Location: Vancouver (Canada) Conference Date: 25-26 Mar 1992

Publication Date: [1992] p 1-7, Paper 2 (427 p)

Report Number(s): EC/EPS-CE04274 CONF-9203248-^ MICROLOG-92-04404^ CE-04274

Language: English

Availability: PC Environment Canada Departmental Library, Att: Pierre Trudel, Acquisitions, 351 St. Joseph Blvd., 2nd Fl., Ottawa, ON, CAN K1A 0H3; MF CANMET/TID, Energy, Mines and Resources Canada, 555 Booth St., Ottawa, Ont., Canada K1A 0G1 PC

Abstract: With funding of over \$50 million over five years, the Development and Demonstration of Site Remediation Technology (DESRT) program is a component of the National Contaminated Sites Remediation Program (NCSR), which is also concerned with remediation of contaminated sites on a polluter pays basis and providing funds for remediation of orphan sites. The principle objective of the DESRT component of the program is to accelerate the development of new and innovative technologies having the potential to resolve problems critical to the environmental remediation of contaminated sites. It covers the areas of site characterization, assessment, remediation and compliance monitoring. The first priority is demonstration, over the medium term, of promising new technologies that have been developed to the pilot plant stage but require on-site, field evaluation to verify performance and cost information. The second priority is to encourage the advancement of technologies that are in the laboratory scale of development, and offer alternative technologies for site remediation over the medium term. The technology must be unique, have potential for wide application across Canada, must involve technological risk, and the DESRT funding must bring incremental value to the project. A list is presented of DESRT projects underway.

Record - 128

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03470205 GRA-93-03340; EDB-93-049081

Title: Federal publications on alternative and innovative treatment technologies for corrective action and site remediation. (Second edition)

Corporate Source: Federal Remediation Technologies Roundtable (United States)

Publication Date: Aug 1992 (36 p)

Report Number(s): PB-93-145696/XAB

Contract Number (Non-DOE): EPA-68-W2-004

Note: See also PB-91-921293

Language: English

Availability: NTIS

Abstract: The Federal Remediation Technologies Roundtable developed this bibliography to publicize the availability of Federal documents pertaining to innovative and alternative technologies to treat hazardous wastes. The first edition of the bibliography was published in 1991. This bibliography addresses technologies that provide for the treatment of hazardous wastes; therefore, it does not contain information or references for containment or other non-treatment strategies, such as landfilling and capping. This bibliography emphasizes innovative technologies for which detailed cost and performance data are not available. Information on more conventional treatment technologies, such as incineration and solidification, is not included.

Record - 129

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03470204 GRA-93-03307; EDB-93-049080

Title: Synopses of federal demonstrations of innovative site remediation technologies

Corporate Source: Federal Remediation Technologies Roundtable (United States)

Publication Date: Aug 1992 (233 p)

Report Number(s): PB-93-144111/XAB EPA--542/B-92/003

Note: See also PB-91-921284

Language: English

Availability: NTIS

Abstract: The collection of abstracts, compiled by the Federal Remediation Technology Roundtable, describes field demonstrations of innovative technologies to treat hazardous waste. This document updates and expands information presented in the first edition of the collection which was published in 1991. The collection is intended to be an information resource for hazardous waste site project managers for assessing the availability and viability of innovative technologies for treating contaminated ground water, soils, and sludge. This document represents a starting point in the review of technologies available for application to hazardous waste sites. This compendium should not be looked upon as a sole source for this information -- it does not represent all innovative technologies nor all technology demonstrations performed by these agencies. Only Federally sponsored studies and demonstrations that have tested innovative remedial technologies with site specific wastes under realistic conditions as a part of large pilot- or full-scale field demonstrations are included. Those studies included represent all that were provided to the Federal Remediation Technology Roundtable at the time of publication. Information collection efforts are ongoing.

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Record - 130

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03469860 GRA-93-00243; EDB-93-048736

Title: Incineration of explosive contaminated soil as a means of site
remediation. Technical report

Author(s)/Editor(s): Major, M.A.; Amos, J.C.

Corporate Source: Army Biomedical Research and Development Lab., Fort
Detrick, MD (United States)

Publication Date: 24 Nov 1992 (22 p)

Report Number(s): AD-A-258757/4/XAB USABRDL-TR-9214

Language: English

Availability: NTIS

Abstract: Large scale releases of explosive contaminated water have
occurred in connection with manufacture of explosives, with load
assembly and pack operations and at centers for the disassembly and
recycle of munitions. The most serious contamination is at sites where
explosive contaminated pink water was discarded in unlined evaporation
lagoons. Sediments in pink water lagoons normally contain a high
concentration of explosive and contamination of ground-water is usually
the result. In an effort to remediate this hazard, the U.S. Army has
chosen incineration of the contaminated soil as the best means of
remediation. Although there is general agreement as to the superiority
of incineration for this purpose, the process is complex and
environmental, legal and financial questions remain.... Incineration,
TNT, RDX, Lead, Mercury, Cadmium, RCRA, Remediation.

Record - 131

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03434107 NOV-93-001044; INS-93-001651; EDB-93-012983

Title: Site remediation of three waste water surface impoundments

Author(s): Wagner, J.G.; Smith, A.C.; Crowe, R.A. (EcoTek, Inc., Erwin, TN (United States))

Title: Proceedings of the international meeting on nuclear and hazardous waste management

Conference Title: Spectrum '90: American Nuclear Society (ANS) international meeting on radioactive waste technologies, decontamination, and hazardous wastes

Conference Location: Knoxville, TN (United States) Conference Date: 30 Sep - 4 Oct 1990

Publisher: La Grange Park, IL (United States) American Nuclear Society

Publication Date: 1990 p 338-341 (510 p)

Report Number(s): CONF-900977--

ISBN: 0-89448-157-6

Language: English

Availability: American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 (United States)

Abstract: EcoTek conducted an extensive remedial action feasibility study to determine the best way to treat 86,000 cubic feet of low-level radioactive waste sediment. This paper reports on the results of this study which showed the preferred method was to excavate with a floating dredge, dewater with a filter press, and package for burial at a licensed low-level radioactive waste site. A pilot-scale operation was designed, installed and operated for two months to verify the selected methodology. Additional testing was performed to optimize certain run times and to test various chemical additives. Detailed design of the production plant followed. Equipment procurement and construction are currently underway.

Record - 132

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03427019 EDB-93-005895

Title: Site remediation: The naked truth

Author(s): Calloway, J.M.

Title: PETRO-SAFE '91 conference papers: Volume 6 (Treatment, disposal and remedial action) and Volume 7 (Fire prevention and suppression)

Conference Title: Petro-Safe '91: 2nd international environmental and safety conference and exhibition for the oil, gas, and petrochemical industries

Conference Location: Houston, TX (United States) Conference Date: 6-8 Feb 1991

Publisher: Houston, TX (United States) PennWell Conferences and Exhibitions Co.

Publication Date: 1991 p 807-813 (337 p)

Report Number(s): CONF-910242--

Language: English

Availability: PennWell Conferences and Exhibitions Company, 3050 Post Oak Boulevard, Suite 200, Houston, TX 77056 (United States)

Abstract: The objective of any company faced with an environmental site remediation project is to perform the cleanup effectively at the lowest possible cost. Today, there are a variety of techniques being applied in the remediation of sites involving soils and sludges. The most popular include: stabilization, incineration, bioremediation and off-site treatment. Dewatering may also play an integral role in a number of these approaches. Selecting the most cost-effective technique for remediation of soils and sludges can be a formidable undertaking, namely because it is often difficult to quantify certain expenses in advance of the project. In addition to providing general cost guidelines for various aspects of soil and sludge remediation, this paper will show how some significant cost factors can be affected by conditions related to specific remediation projects and the cleanup technology being applied.

Record - 133

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03425347 GRA-92-52347; EDB-93-004223

Title: Literature survey of innovative technologies for hazardous-waste-site remediation, 1987-1991.

Corporate Source: Environmental Protection Agency, Washington, DC (United States). Office of Solid Waste and Emergency Response

Publication Date: Jul 1992 (50 p)

Report Number(s): PB-93-105617/XAB EPA--542/B-92/004

Note: Also available from Supt. of Docs.

Language: English

Availability: NTIS

Abstract: EPA's Office of Solid Waste and Emergency Response is seeking to further the use of innovative hazardous waste treatment technologies in its programs. In order to achieve more permanent remedies, the Agency is encouraging the use of new or innovative technologies that are capable of treating contaminated soils/sludges and ground water more effectively, less expensively, and in a manner more acceptable to the public than existing conventional methods. The bibliography is intended to increase the efficiency of the technology evaluation process. The document is not meant to be comprehensive in scope nor is it meant to convey an endorsement of the citations. It is meant to provide a survey of publications which could be useful when innovative technologies are investigated. As a research aid, the bibliography can help provide insights into current developments and provide references which may serve as a basis for further investigations.

Record - 134

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03418240 GRA-92-12780; EDB-92-180997

Title: Radioactive-site-remediation technologies seminar. Speaker slide copies.

Corporate Source: Environmental Protection Agency, Washington, DC (United States). Office of Research and Development

Publication Date: Jun 1992 (69 p)

Report Number(s): PB-92-231174/XAB EPA--540/K-92/001

Language: In English

Availability: NTIS

Abstract: The contents of this report include the following: approaches to sampling radioactive heterogeneous waste; soil characterization methodology for determining application of soil washing; vorce (volume reduction/chemical extraction) program; treatment of radioactive compounds in water; polymer solidification of low-level radioactive, hazardous, and mixed waste; in situ vitrification of soils contaminated with radioactive and mixed wastes; decontamination of contaminated buildings; incineration of radioactive waste; in situ stabilization/solidification with cement-based grouts; environmental restoration and waste management; removal of contaminants from soils by electrokinetics; and treatment, compaction, and disposal of residual radioactive waste.

Record - 135

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03403255 GRA-92-73026; EDB-92-166012

Title: Definitional-mission report: Hazardous-waste-site remediation, Czech Republic, Republic of Czechoslovakia. Export trade information

Author(s)/Editor(s): Ellis, R.A.

Corporate Source: Advanced Waste Management Systems, Inc., Chattanooga, TN (United States)

Publication Date: Oct 1990 (48 p)

Report Number(s): PB-92-208370/XAB

Note: See also PB92-208388, PB92-208396, PB92-208404, and PB92-208412.

Sponsored by Trade and Development Program, Rosslyn, VA.

Language: In English

Availability: NTIS

Abstract: The report documents the findings of a U.S. Trade and Development Program (TDP)-funded definitional mission to examine the need for hazardous waste disposal site remediation in the Czech Republic, Republic of Czechoslovakia. Four sites were studied. They were: Kbely Army Airfield, Spolana Chemical Works, Neratovice, and Milovice Former Soviet Army Base. Each of these presented quite different problems, complexities, and needs. Each is therefore treated as a subreport.

Record - 136

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03401799 EDB-92-164556

Title: METALEEP sup sm on-site remediation of refinery waste

Author(s): Steiner, W.; Rugg, B.

Title: PETRO-SAFE '92 conference papers: Volume 7 (Processing and Refining 2), Volume 8 (Transportation and storage), Volume 9 (Spill control, disposal and remedial treatment 1) and Volume 10 (Spill control, disposal and remedial treatment 2)

Conference Title: PETRO-SAFE '92: 3rd annual environmental and safety conference for the oil, gas and petrochemical industries

Conference Location: Houston, TX (United States) Conference Date: 27-29 Jan 1992

Publisher: Houston, TX (US) PennWell Conferences and Exhibitions Co.

Publication Date: 1992 p 809-823 (328 p)

Report Number(s): CONF-920193--

Language: In English

Availability: PennWell Conferences and Exhibitions Company, 3050 Post Oak Boulevard, Suite 200, Houston, TX 77056 (United States)

Abstract: METALEEPsup sm is a process designed for the decontamination of refinery waste and other contaminated waste streams which contain both organics and metals. METALEEPsup sm is a combination of LEEPsup sm and METLEXsup sm. Leepsup sm (Low Energy Extraction Process) is a patented continuous solvent extraction process for on-site remediation in which organic contaminants are removed by a patented continuous solvent extraction process for on-site remediation in which organic contaminants are removed from solids. The process is particularly well suited to the decontamination of refinery generated wastes because it can clean the most difficult fines fraction. LEEPsup sm was originally designed to remove polychlorinated biphenyls (PCBs) from sediments, however, it has been used in tandem with LEEPsup sm to remove heavy metals contamination after organics have been extracted. Successful tests have been conducted on several types of refinery wastes including rainwater impoundment sludge and filter cake slop solids.

Record - 137

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03394688 CANM-CA92E3851; EDB-92-157445

Title: Canadian site remediation research and application programs: An overview

Author(s): Booth, R.; Wardlaw, C. (Wastewater Technology Centre, Burlington, ON (Canada))

Title: Proceedings of the 20th annual conference of the Pollution Control Association of Ontario

Corporate Source: Pollution Control Association of Ontario, North York, ON (Canada)

Conference Title: 20. annual conference of the Pollution Control Association of Ontario

Conference Location: Niagara Falls (Canada) Conference Date: 21-24 Apr 1991

Publication Date: 1991 p 1-10, Paper 6 (vp.)

Report Number(s): PCAO-CE04226 CONF-9104389--^ CE--04226

Language: In English

Availability: Pollution Control Association of Ontario, 63 Hollyberry Trail, North York, ON, CAN M2H 2N9.

Abstract: Three research and application programs for site remediation technology are now in place in Canada: the National Groundwater and Soil Remediation Program (GASReP), the National Contaminated Sites Remediation Program (NCSR), and the Contaminated Sediments Treatment Technology Program (COSTTEP). GASReP is a joint venture involving Environment Canada, Energy, Mines and Resources Canada, the U.S. Environmental Protection Agency, the Canadian Petroleum Association, the American Petroleum Institute and several Canadian provincial ministries of environment. The objective of the program is to promote and fund technology research, development and field demonstration in the area of hydrocarbon contamination of soils and groundwater. The NCSR was initiated by the Canadian Council of Ministers of the Environment to clean Canada's most severely contaminated sites, and consists of three components. The Orphan Sites Program is designed to clean up land sites for which the owner is either unwilling or unable to clean up the site. The Demonstration of Site Remediation Technology Program is designed to develop and demonstrate site remediation technology, while the Federal Sites Program serves the same purpose as the Orphan Sites Program but targets federal orphan sites. The COSTTEP is designed to assist owners of technology (mostly groundwater and soil remediation technology) in the development and demonstration of their processes. 4 tabs.

Record - 138

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03387476 EDB-92-150233

Title: Transportable thermal technologies for on-site remediation

Author(s): Nielson, R.K.

Title: American Chemical Society - Abstracts. Industrial and Engineering Chemistry Division

Conference Title: 201. American Chemical Society (ACS) national meeting

Conference Location: Atlanta, GA (United States) Conference Date: 14-19 Apr 1991

Publisher: Washington, DC (US) American Chemical Society

Publication Date: 1991 p Paper I and EC 134 (44 p)

Report Number(s): CONF-910402--

Language: In English

Availability: Industry and Engineering Chemistry Division, American Chemical Society, 1155 16th Street, NW Washington, DC 20036 (United States)

Abstract: Weston Services Inc., (WSI) is a wholly owned subsidiary of Roy F. Weston, Inc. (WESTON), responsible for site remediations. One of many technology based practices offered by WSI focuses on treatment using thermal systems. Through the Thermal System Practice, WSI currently offers two distinct systems for remediation of hazardous waste sites: the Transportable Incineration System (TIS), and the patented Low Temperature Thermal Treatment (LT^{sup} 3) System. The presentation focuses on these on-site technologies providing background on previous bench, pilot, and full scale projects and provides details on costs. A new Low Temperature Thermal Treatment project will have just been completed and a discussion of that project will be presented. The author discusses the advantages, disadvantages, and limitations of the technologies, where they can be effectively used, where problems would be encountered, and where it is appropriate to use each of them. The technologies will be contrasted with one another and relative costs for each thermal technology will be provided.

Record - 139

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03387162 GRA-92-52436; EDB-92-149919

Title: Technical-support services for Superfund site remediation and RCRA corrective action. Third edition. Final report

Corporate Source: Environmental Protection Agency, Washington, DC (United States). Office of Emergency and Remedial Response

Publication Date: Mar 1992 (54 p)

Report Number(s): PB-92-205657/XAB EPA--540/8-91/091

Language: In English

Availability: NTIS

Abstract: A directory of technical support services available to EPA field staff to enable them to quickly identify resources which may be useful in solving a specific hazardous waste clean-up problem. Rather than an exhaustive inventory of all sources of technical information, the publication highlights the significant EPA technical assistance programs - those that have procedures in place to process requests for assistance (e.g. answering a technical question, providing staff to work on the problem, or referring callers to the appropriate source).

Categories of services advertised include technical support sources and brokers, automated information systems, publications, and a variety of other organizational sources of information.

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Record - 140

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03373368 EDB-92-136125

Title: Bioventing and vapor extraction: Innovative technologies for contaminated site remediation

Author(s): Long, G. (ENSR Consulting and Engineering, Somerset, NJ (United States))

Source: Journal of the Air and Waste Management Association (United States) v 42:3. Coden: JAWAE ISSN: 1047-3289

Publication Date: Mar 1992 p 345-348

Language: In English

Abstract: Bioventing and Vapor Extraction are two technologies which are finding increasing use in performing soil cleanup at hazardous and nonhazardous waste sites. Both processes are characterized by the controlled use of air as a carrier to either remove contaminants from soil or to supply oxygen for aerobic bioremediation of the compounds in the unsaturated zone into less toxic materials. These topics are the focus of a unique Bioventing Satellite Seminar broadcast on April 15, 1992. The seminar, a joint venture between the Air and Waste Management Association (A and WMA) and the Hazardous Waste Action Coalition (HWAC), is the second in a series of satellite seminars that will deal with innovative hazardous waste remediation technologies.

Record - 141

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03370510 NOV-92-035135; EDB-92-133267

Title: Potential costs to utilities for hazardous waste site remediation

Author(s): Emmert, M.; Sieracki, R.; Egan, J. (Peterson Consulting
Limited Partnership, Chicago, IL (US))

Conference Title: 54. annual American power conference

Conference Location: Chicago, IL (United States) Conference Date: 13-15
Apr 1992

Source: Proceedings of the American Power Conference (United States) v
54:2. Coden: PAPWA ISSN: 0097-2126

Publication Date: 1992 p 1159-1163

Report Number(s): CONF-920432--

Language: In English

Abstract: Environmental legislation and regulations have added increased business and financial risks to public utilities and corporations in general. The presence of such risks has become increasingly apparent to utility management and other business leaders over the last several years in a variety of different ways. Some of these ways include: The continuing refinements or modification of agency interpretations of what constitutes regulatory compliance. The dramatic increase in environmental compliance costs. The ability of utilities to recover environmental compliance costs from state regulatory commissions. The necessary modifications to operating and compliance practices to minimize future environmental problems and waste streams. During the last several years, utilities have developed a history of responding to a number of these risks. This history is somewhat limited, as the implementation of many regulations has recently started (e.g., regulations such as regulatory agencies monitoring compliance and assessing utility operations for waste and emission minimalization opportunities). However, utilities and other businesses have been incurring substantial costs when participating in hazardous waste remediation programs for sites contaminated decades ago before environmental regulations, as we know them today, existed. In this paper, the authors explore the history of how utilities have responded to the increased business and financial risks associated with recent environmental legislation and regulation, as well as specifically how utilities have been affected by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Record - 142

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03338737 EDB-92-101494

Title: A database of information on technologies for hazardous waste site remediation

Author(s)/Editor(s): Holter, G.M.; White, M.K.; Bryant, J.L.

Corporate Source: Pacific Northwest Lab., Richland, WA (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Conference Title: Engineering and technology conference on waste management and environmental restoration

Conference Location: San Juan (Puerto Rico) Conference Date: 9-11 Apr 1992

Publication Date: Apr 1992 (9 p)

Report Number(s): PNL-SA-19814 CONF-920466--12

Order Number: DE92012332

Contract Number (DOE): AC06-76RL01830

Language: In English

Availability: OSTI; NTIS; GPO Dep.

Abstract: A personal-computer-based database and user interface has been developed for retrieving and reviewing information on technologies applicable to the environmental remediation of hazardous waste sites. This system and its information represent a useful source of technology information for people preparing, reviewing, and approving site remediation plans or evaluating remediation technologies. The system includes a variety of information for approximately 90 distinct remedial action technologies. A general text description of each technology is provided, together with basic engineering or design parameters and flowcharts. Information on applying a given technology includes the applicability of the technology to specific contaminants, associated technologies that may be required in conjunction to provide for complete remediation of a site, technical limitations and constraints on the use of the technology, and identification of information or site data needed to deploy the technology at a particular site. US federal regulatory information relating to each technology is also provided. In addition, the system identifies sources for more detailed information for these technologies (i.e., references and specific sites where these technologies have been used).

Technologies to be considered can be selected from the complete list of technologies for which information is included, or can be chosen from a shorter list of technologies matching a set of user-specific remediation objectives. The technology information is compiled from a wide variety of sources. The system is designed to support the assessment of remedial alternatives at US sites, but should be readily adaptable to other environmental remediation situations throughout the world.

Record - 143

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03335685 EDB-92-098442

Title: Alternating current electrocoagulation for Superfund site
remediation

Author(s): Farrell, C.W. (Electro-Pure Systems, Inc., Amherst, NY (United States))

Title: Remedial action, treatment, and disposal of hazardous waste

Conference Title: 17. annual hazardous waste research symposium

Conference Location: Cincinnati, OH (United States) Conference Date: 9-11
Apr 1991

Publisher: Cincinnati, OH (US) Environmental Protection Agency

Publication Date: 1991 p 404-415 (705 p)

Report Number(s): CONF-9104243--

Language: In English

Abstract: A study is being conducted by Electro-Pure Systems, Inc. (EPS) under the Emerging Technology portion of the U.S. Environmental Protection Agency's (EPA's) Superfund Innovative Technology Evaluation (SITE) Program to study alternating current electrocoagulation for Superfund site remediation. Alternating current electrocoagulation has proven to be effective in agglomerating and removing colloidal solids, metals and certain organic contaminants from surrogate soils prepared from the US EPA's Synthetic Soil Matrix. Treatments under a wide range of operating conditions have enabled the optimum parameter settings to be established for multiple phase separation. Electrocoagulation enables appreciably enhanced filtration and dewatering rates to be realized for metals- and diesel fuel-spiked surrogate soil slurries; such enhancements are prompted by growth in the mean particle size of the clays and particulates from typically < 10 microns to as much as 150 microns depending on the degree of electrocoagulation. Reduction in the total suspended solids content of clays in all slurries in excess of 90% can routinely be achieved. Bench-scale experiments of the metals-spiked surrogate soils indicate that electrocoagulation preferentially concentrates soluble metals into the sludge phase; excellent metals separation (Pb, Cr, Cu, Cd) can be realized. Experiments on surrogate wastes spiked with volatile organics suggest that this technology is not capable of effecting good volatile extractions from the aqueous phase. Reductions in excess of 80% in the total organic carbon (TOC) content of the diesel fuel-spiked surrogates can, however, be achieved.

Record - 144

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03327722 EDB-92-082020

Title: Waste site remediation: Are we doing it right

Author(s): Travis, C.C. (Oak Ridge National Lab., TN (United States))

Source: Oak Ridge National Laboratory Review (United States) v 24:1.

Coden: ORNRA ISSN: 0048-1262

Publication Date: 1991 p 28-29, 32-33

Language: In English

Abstract: Some organizations, such as ORNL, are discovering that some local groundwater is contaminated and that it cannot be completely cleaned up. To determine whether an area has contaminated groundwater, monitoring wells must be installed. At ORNL about 200 groundwater-quality monitoring wells have been installed at the perimeters of 11 waste area groupings. The procedures used in installing 170 of these wells are shown in the photographs accompanying this article.

Record - 145

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03288942 NOV-92-015328; EDB-92-051699

Title: Site closure through integrated site remediation

Author(s): Bolakas, J.F.; Brown, R.A. (Groundwater Technology, Inc.,
Trenton, NJ (US))

Title: Proceedings of the ninth annual hazardous materials management
conference/international

Conference Title: HazMat '91 Internationnal: 9th annual international
hazardous materials management conference

Conference Location: Atlantic City, NJ (United States) Conference Date:
12-14 Jun 1991

Publisher: Wheaton, IL (United States) Tower Conf. Management Company

Publication Date: 1991 p 580-598 (1135 p)

Report Number(s): CONF-910697--

Language: In English

Availability: Tower Conf. Management Company, 331 W. Wesley Street,
Wheaton, IL 60187 (United States)

Abstract: In October 1988, an apparent act of vandalism caused a large gasoline spill at a bulk petroleum storage facility in southern New Jersey. The facility is underlain by the Cohansey Aquifer, a sole source drinking water aquifer. Approximately 8,400 gallons of premium unleaded gasoline was spilled onto the ground around four underground storage tanks. It was estimated that approximately 6,000 yds³ of soil was contaminated by the spillover in an area of approximately 100 feet by 80 feet. Approximately 7,700 gallons of gasoline was adsorbed in the soil of the spill area. An additional 700 gallons of gasoline was adsorbed in soil which was excavated and stockpiled immediately following the spill. Because of the significant depth of groundwater (18 to 20 feet) and the emergency response actions, it was estimated that less than 100 gallons of gasoline reached the groundwater under the spill area. This paper describes the site remediation, which included groundwater extraction, soil vapor extraction, and bioremediation.

Record - 146

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03256223 EDB-92-018980

Title: The use of electrokinetics for hazardous waste site remediation

Author(s): Cabrera-Guzman, D. (Environmental Protection Agency, Cincinnati, OH (United States)); Swartzbaugh, J.T.; Weisman, A.W. (PEER Consultants, Dayton, OH (United States))

Source: Journal of the Air and Waste Management Association (United States) v 40:12. Coden: JAWAE ISSN: 1047-3289

Publication Date: Dec 1990 p 1670-1676

Language: In English

Abstract: The Superfund Innovative Technology Evaluation (SITE) program was authorized as part of the 1986 amendments to the Superfund legislation. It represents a joint effort between US EPA's Office of Research and Development and Office of Solid Waste and Emergency Response. The program is designed to assist and encourage the development of waste treatment technologies that would contribute to more solutions to our hazardous waste problems. Recently, EPA, through the SITE program, issues a work assignment to assess the state-of-the-art of electrokinetically enhanced contaminant removal from soils. Prior research efforts, both laboratory and field, have demonstrated that electroosmosis has the potential to be effective in facilitating the removal of certain types of hazardous wastes from soils. Particularly encouraging results have been achieved with inorganics in fine-grained soils where more traditional removal alternatives are less effective. Although the results of various studies suggest that electrokinetics is a promising technology, further testing is needed at both the laboratory and field levels to fully develop this technology for site remediation. A conceptual test program is presented based on best available data which incorporates system design and operating parameters used in previous applications of this technology in the use of electrokinetics treatment as a remediation technique at hazardous waste sites.

Record - 147

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03239483 GRA-91-12319; EDB-92-002240

Title: Synopses of federal demonstrations of innovative site-remediation technologies

Corporate Source: Environmental Protection Agency, Washington, DC (United States). Office of Emergency and Remedial Response

Publication Date: May 1991 (133 p)

Report Number(s): PB-91-921284/XAB

Language: In English

Availability: NTIS

Abstract: A compendium of abstracts documenting the results of demonstrations of hazardous treatment technologies conducted by Federal agencies involved in Superfund Remediation and RCRA and UST Corrective Actions. The document contains abstracts from EPA (primarily from the Superfund Innovative Technology Evaluation program), DOD, and DOE. It also includes an outline of data needs to guide project managers in submitting information on new projects for future editions of the document.

Record - 148

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03235359 EDB-91-162795

Title: Site remediation

Author(s): Wetzel, R.S. (Science Applications International Corp., McLean, VA (United States))

Title: Standard handbook of hazardous waste treatment and disposal

Author(s)/Editor(s): Freeman, H.M. (ed.)

Publisher: New York, NY (US) McGraw-Hill Book Company

Publication Date: 1989 p 12.51-12.61 (1036 p)

Language: In English

Abstract: Site remediation incorporates the use of specific technologies such as capping, slurry trenching, and groundwater treatment to address specific problems identified in the site-investigation process. The currently accepted practices and US EPA guidelines include remedial investigation (RI), feasibility study (FS), corrective action, and closure. The ultimate goal of the RI and FS is to develop data to support the selection of an approach for site remediation and then to use this data in a structured procedure that results in a well-supported recommended approach. The remedial investigation must establish site characteristics such as media contaminated, the extent of contamination, and the physical boundaries of the contamination. The purpose of the feasibility study is to document the problem(s) identified in the RI, determine the range of possible solutions, and select the best solution to waste-site problems. Criticisms of past RI/FS projects by the EPA have been that they take too much calendar time to complete, supporting data is insufficient or minimally adequate, key alternatives are not evaluated, and evaluation and rational for the alternatives presented are insufficient. The corrective-action program under the Resource Conservation and Recovery Act (RCRA) goes into effect when the RCRA groundwater-monitoring program identifies contaminants significantly above permitted levels. Waste-site closure consists of final design of the remedial action, implementation, and postclosure monitoring and maintenance. Postclosure monitoring and maintenance must be conducted as long as the site is considered a threat. 6 refs., 4 figs., 3 tabs.

Record - 149

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03224241 GRA-91-82689; EDB-91-151677

Title: Bibliography of federal reports and publications describing alternative- and-innovative treatment technologies for corrective action and site remediation

Corporate Source: Environmental Protection Agency, Washington, DC (United States). Office of Emergency and Remedial Response

Publication Date: May 1991 (29 p)

Report Number(s): PB-91-921293/XAB

Language: In English

Availability: NTIS

Abstract: The Federal Remediation Technologies Roundtable developed this bibliography to publicize the accessibility of Federal documents pertaining to innovative and alternative technologies to treat hazardous wastes. The bibliography contains references for documents and reports from the U.S. Environmental Protection Agency (EPA), the U.S. Army, the U.S. Army Corps of Engineers, the U.S. Navy, the U.S. Air Force, the U.S. Department of Energy (DOE), and the U.S. Department of Interior (DOI), Bureau of Reclamation. The publication contains references and order information for reports on research concerning the application of innovative and alternative hazardous waste treatment options. The bibliography is scheduled to undergo periodic revisions.

Record - 150

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03224230 GRA-91-82096; EDB-91-151666

Title: Technical-support services for Superfund-site remediation. Interim directory

Author(s)/Editor(s): Wilhelm, R.G.

Corporate Source: Environmental Protection Agency, Washington, DC (United States). Office of Emergency and Remedial Response

Publication Date: Feb 1990 (34 p)

Report Number(s): PB-91-228353/XAB

Note: Prepared in cooperation with Environmental Management Support, Silver Spring, MD.

Language: In English

Availability: NTIS

Abstract: The Directory highlights the significant OSWER and ORD technical assistance programs that have procedures in place to process requests such as answering a technical question, providing staff to work on a problem, or referring callers to the appropriate source.

Record - 151

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03194880 EDB-91-122316

Title: Organic contaminant release from a mixed waste disposal site: A computer simulation study of transport through the vadose zone and site remediation

Author(s): Baca, R.G.; Walton, J.C.; Rood, A.S.; Otis, M.D. (Idaho National Engineering Lab., Idaho Falls (USA))

Title: Proceedings of the tenth annual DOE low-level waste management conference. Session 2: Site performance assessment

Corporate Source: EG and G Idaho, Inc., Idaho Falls, ID (United States)

Conference Title: 10. annual Department of Energy (DOE) low-level waste management conference

Conference Location: Denver, CO (United States) Conference Date: 30 Aug - 1 Sep 1988

Publication Date: Dec 1988 p 113-125 (161 p)

Report Number(s): CONF-880839-Ses.2

Order Number: DE89005580

Language: In English

Availability: OSTI

Abstract: Migration of organic contaminants from mixed waste disposal sites is emerging as a increasingly significant environmental problem.

Organic contaminants, particularly in the vapor phase, can pose a health hazard to workers in the vicinity of the disposal site and can cause contamination of the underlying aquifer. Volatile organic chemicals such as carbon tetrachloride, chloroform, and trichloroethylene are frequently encountered at waste sites. These chlorinated hydrocarbons are relatively common chemicals and widely used as industrial solvents. Problems with organic vapors have been noted at waste disposal sites at a number of US Department of Energy (DOE) facilities. At the Idaho National Engineering Laboratory, for example, problems with organic vapors (Laney, et al., 1988) have occurred at the Radioactive Waste Management Complex (RWMC). Analyses of soil-gas samples and groundwater samples indicate that organic vapors are being emitted from disposal pits in the Subsurface Disposal Area (SDA) of the RWMC. The primary source of the organic vapor has been determined to be organic wastes that were disposed at the site in the mid-1960's. To address the organic problems at the RWMC, a multi-task activity was initiated. The first task involved a records search to determine the quantities and distribution of organic wastes. The second task consisted of a detailed soil-gas survey to identify the specific disposal areas that are producing the organic vapors.

Record - 152

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03188197 EDB-91-115633

Title: Site remediation considerations and foundation excavation plan for the Walter Reed Army Institute of Research building, Forest Glen, Maryland

Author(s)/Editor(s): Hambley, D.F.; Harrison, W. (Argonne National Lab., IL (United States). Energy Systems Div.); Foster, S.A.; Schweighauser, M.J. (Clement Associates, Inc., Fairfax, VA (United States))

Corporate Source: Argonne National Lab., IL (United States). Energy Systems Div.

Sponsoring Organization: DOD Department of Defense, Washington, DC (United States)

Publication Date: Apr 1991 (255 p)

Report Number(s): ANL/ESD/TM-17

Order Number: DE91016705

Contract Number (DOE): W-31109-ENG-38

Language: In English

Availability: OSTI; NTIS; GPO Dep.

Abstract: The US Army Corps of Engineers North Atlantic Division, Baltimore District (CENAB), intends to design and construct a medical and dental research facility for the Walter Reed Army Institute of Research (WRAIR) at the Walter Reed Army Medical Center (WRAMC) at Forest Glen, Maryland. Because almost 100% of the proposed building site is located on an uncontrolled landfill that was thought to possibly contain medical, toxic, radioactive, or hazardous waste, it was assumed that remediation of the site might be necessary prior to or in conjunction with excavation. To assess (1) the need for remediation and (2) the potential hazards to construction workers and the general population, the Baltimore District contracted with Argonne National Laboratory to undertake a site characterization and risk assessment and to develop a foundation-excavation plan. The results of the site characterization and a qualitative risk assessment have been presented in a previous report. This report presents the foundation-excavation plan. 38 refs., 16 figs., 11 tabs.

Record - 153

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03128283 NOV-91-004426; EDB-91-065718

Title: Update on the use of transportable circulating bed combustors for site remediation

Author(s): Diot, H.R. (Ogden Environmental Services (US))

Title: Institute of environmental sciences 1990 proceedings

Conference Title: 36. Institute of Environmental Sciences annual technical meeting: a glimpse into the 21st century

Conference Location: New Orleans, LA (USA) Conference Date: 23-27 Apr 1990

Publisher: Mt. Prospect, IL (USA) Institute of Environmental Sciences

Publication Date: 1990 p 49-53 (798 p)

Report Number(s): CONF-900479--

ISBN: 1-877862-00-2

Language: In English

Availability: Institute of Environmental Sciences, 940 East Northwest Highway, Mt. Prospect, IL 60056 (USA)

Abstract: This paper discusses how a company is conducting site remediation projects that will thermally treat over 100,000 tons of contaminated soil. Using the proprietary transportable circulating bed combustor (CBC), an advanced fluidized bed incinerator. The services helped clients reduce their liabilities on sites contaminated with a wide variety of hazardous and toxic materials. Two transportable CBC units are currently involved in major site remediation projects, and an additional project is in the preliminary engineering and facilities design stage. One unit is thermally cleaning soil contaminated by a leaking underground fuel oil tank at a site in central California. When this project is completed in 1990, OES will open California's first fixed facility dedicated to remediating oily soil at this site. A second unit is purifying PCB-contaminated soils in the Kenai Wildlife Refuge in Alaska. A third CBC will be placed at the first town gas incineration project, thermally treating coal tar wastes in early 1990. Construction of a fourth CBC will be completed early in 1990 and is available for assignment. These projects are detailed.

Record - 154

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03115937 DK-91-001212; EDB-91-053371

Title: Treatment of inorganic pollutants on-site in connection with ground water flushing or soil extraction with recirculating water

Author(s): Sund, C. (I. Krueger AS (DK))

Title: In-situ and on-site remediation of contaminated soil and groundwater

Corporate Source: Danmarks Tekniske Hoejskole, Lyngby (Denmark). Inst. for Teknisk Geologi

Conference Title: Conference on in-situ and on-site remediation of contaminated soil and groundwater

Conference Location: Lyngby (Denmark) Conference Date: 4 Apr 1990

Publication Date: 1990 p 133-144 (144 p)

Report Number(s): CONF-9004294--

ISBN: 87-88699-68-4

Language: In English

Availability: Available on loan from Risoe Library, DK-4000 Roskilde

Abstract: With the on the market available treatment technologies it is possible to treat wastewater to meet close to drinking water standards. If there is a mixture of organic and inorganic compounds it is an advantage to remove volatile compounds before performing detoxification of inorganic compounds. There will otherwise be a risk for secondary emissions due to uncontrolled evaporation of volatiles within the physical/chemical treatment plant and from secondary products as sludge produced. Air stripping connected to absorption of stripped volatiles on carbon filters is normally used. If the organic content in the wastewater should be removed either by absorption (activated carbon), chemical oxidation or biological degradation it is advisable to perform the removal of the inorganic contaminants before entering these steps in order to maximize treatment efficiency. Biological treatment has proven to be very efficient for removal of nitrogen compounds.

Biological oxidation of ammonia to nitrate (nitrification) followed by biological reduction of nitrate and nitrite to nitrogen gas (denitrification) are processes which have proven to be more cost efficient and as well technically superior to chemical oxidation and reduction of mentioned nitrogen compounds. As nitrite is rather toxic, which as well can be seen from the drinking water standard (0,03-0,1 mg NO₂-N/l) it might be necessary to perform chemical reduction or oxidation if drinking water standards should be met. Oxidation can be performed by hypochlorite or hydrogenperoxide and reduction is preferably performed with amidosulphonicacid. Treatment technologies for other forms of contamination are described. (AB).

Record - 155

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03115936 DK-91-001211; EDB-91-053370

Title: In-situ/on-site skimming of hydrocarbons from groundwater

Author(s): Greulich, R.H. (I. Krueger AS (DK)); Vedby, S. (Danish
Geotechnical Institute, ATV (DK))

Title: In-situ and on-site remediation of contaminated soil and groundwater

Corporate Source: Danmarks Tekniske Hoejskole, Lyngby (Denmark). Inst. for
Teknisk Geologi

Conference Title: Conference on in-situ and on-site remediation of
contaminated soil and groundwater

Conference Location: Lyngby (Denmark) Conference Date: 4 Apr 1990

Publication Date: 1990 p 109-132 (144 p)

Report Number(s): CONF-9004294--

ISBN: 87-88699-68-4

Language: In English

Availability: Available on loan from Risoe Library, DK-4000 Roskilde

Abstract: The paper deals with oil remedy in groundwater with emphasis on
free oil recovery using different pumping and separation techniques.

The importance of the migration in the capillary fringe and the
hydrogeological boundaries are discussed and typical remedial
procedures presented. The paper concludes with descriptions of two in
situ/on site techniques using suction with product separation in tanks,
and gravity or specific oil skimming scavenging in wells. (author).

Record - 156

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03115935 DK-91-001210; EDB-91-053369

Title: In-situ gas extraction of volatile organics from soil

Author(s): Lindhardt, B. (COWIconsult A/S (DK))

Title: In-situ and on-site remediation of contaminated soil and groundwater

Corporate Source: Danmarks Tekniske Højskole, Lyngby (Denmark). Inst. for
Teknisk Geologi

Conference Title: Conference on in-situ and on-site remediation of
contaminated soil and groundwater

Conference Location: Lyngby (Denmark) Conference Date: 4 Apr 1990

Publication Date: 1990 p 61-72 (144 p)

Report Number(s): CONF-9004294--

ISBN: 87-88699-68-4

Language: In English

Availability: Available on loan from Risoe Library, DK-4000 Roskilde

Abstract: Induced soil venting is a process for clean-up of contaminated soil utilizing a forced replacement of the soil-air. This will lead to a removal of the volatile organic contaminant present in the soil. The method is suitable for clean-up of contaminants with a relatively high vapor pressure, e.g. greater than 0.001 atm., and a relatively small water solubility, e.g. less than 2,000 mg/l, so that the contaminant will primarily be found in the gas-phase of the soil-matrix. The method is for instance suitable for clean-up of gasoline and organic solvents, e.g. trichloroethylene. Several lab-scale tests of the method are reported in the literature showing the suitability of the method. In the US the method has been tested full-scale on several occasions. Soil venting can thus be seen as a realistic in-situ method for clean-up of soil contaminated with gasoline and solvents in the unsaturated zone. Induced soil venting can also be used on-site as a simple and relatively fast method for clean-up of excavated soil contaminated by the same components. A Danish Case, utilizing in-situ gas extraction, is described. (AB).

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03115934 DK-91-001209; EDB-91-053368

Title: Sanitation of subsoil contaminated by phenol

Author(s): Sondermann, W. (GKN Keller GmbH, Offenbach (DE))

Title: In-situ and on-site remediation of contaminated soil and groundwater

Corporate Source: Danmarks Tekniske Højskole, Lyngby (Denmark). Inst. for
Teknisk Geologi

Conference Title: Conference on in-situ and on-site remediation of
contaminated soil and groundwater

Conference Location: Lyngby (Denmark) Conference Date: 4 Apr 1990

Publication Date: 1990 p 13-23 (144 p)

Report Number(s): CONF-9004294--

ISBN: 87-88699-68-4

Language: In English

Availability: Available on loan from Risoe Library, DK-4000 Roskilde

Abstract: Regarding soil sanitation measures there may not be any harmful emissions resulting from the actual procedure which could in any way adversely affect the environment or the crew working on the area, and suitable clothing and protection is required. Furthermore, the sanitized material must be in a form such that it facilitates possible recycling or reuse. A clean up procedure is presented that takes these conditions into consideration. After sinking a drill the contaminated soil is eroded and washed with the jet stream process. The jet stream method uses a medium or liquid which is shot through a nozzle at the end of a drill and thereby achieves very high pressures and speeds when it leaves the nozzle. This powerful cutting force breaks through the soil structure and therefore dissolves and washes away the contaminated substance from the contaminated earth in which it is embedded. The drain off from this process is siphoned off at the exit point on the surface of the soil and stored in an enclosed area to be used again during the treatment. After decontamination the cleaned material is separated to composition and then filtered. The liquid can then be reused in the decontamination procedure. Because of the flexibility and adaptability of the jet stream procedure it is possible to treat successfully almost any volume and size of area, even underneath an existing structure. By immediately placing all contaminated substances in an enclosed area the risk of further decontamination is reduced. No earth work, is necessary. There is no need for unnecessary transportation of contaminated material. (AB).

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03115933 DK-91-001208; EDB-91-053367

Title: In-situ and on-site technologies An overview

Author(s): Freestone, F.J. (Technical Support Branch, ORD, RREL, U.S. EPA, Edison, New Jersey (US))

Title: In-situ and on-site remediation of contaminated soil and groundwater

Corporate Source: Danmarks Tekniske Hoejskole, Lyngby (Denmark). Inst. for Teknisk Geologi

Conference Title: Conference on in-situ and on-site remediation of contaminated soil and groundwater

Conference Location: Lyngby (Denmark) Conference Date: 4 Apr 1990

Publication Date: 1990 p 1-11 (144 p)

Report Number(s): CONF-9004294--

ISBN: 87-88699-68-4

Language: In English

Availability: Available on loan from Risoe Library, DK-4000 Roskilde

Abstract: A broad analysis of and perspective on the characteristics and measured performance of in-situ and on-site treatment technologies available for remediation of contaminated soils, groundwater and associated debris at hazardous waste sites. Included in the analysis is information from U.S. and European sources. Available data are appended from nine recently completed field demonstrations from the U.S.

Environmental Protection Agency (EPA) Superfund Innovative Technology Evaluation (SITE) program. The most frequently applied technology areas appear to be on-site thermal treatment for organics, on-site and in-situ solidification/stabilization technologies for most inorganics and metals, traditional on-site water treatment techniques, and soil vapor extraction for volatile organic compounds. Rapidly developing areas include bioremediation technologies, and concentration technologies. Two of the weakest areas include materials handling for such situations as excavating buried drums and soils with volatiles safely, and performing physical and chemical site characterization using technology-sensitive parameters. An area worthy of international cooperation is that of performing benchscale screening and treatability studies, including the specification of key parameters needing measurement, techniques for such measurement and for interpretation, storage and retrieval of resulting data. We are in the process of evaluating existing treatability study data on soils and debris, and will be installing that data onto an on-line information system available to the public world-wide. (AB) 10 refs.

Record - 159

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03115932 DK-91-001207; EDB-91-053366

Title: In-situ and on-site remediation of contaminated soil and groundwater

Corporate Source: Danmarks Tekniske Hoejskole, Lyngby (Denmark). Inst. for
Teknisk Geologi

Conference Title: Conference on in-situ and on-site remediation of
contaminated soil and groundwater

Conference Location: Lyngby (Denmark) Conference Date: 4 Apr 1990

Publication Date: 1990 (144 p)

Report Number(s): CONF-9004294--

ISBN: 87-88699-68-4

Language: In English

Availability: Available on loan from Risoe Library, DK-4000 Roskilde

Abstract: The papers present methods for the decontamination of soils
and/or ground water which have been polluted by various forms of
hazardous wastes. (AB).

Record - 160

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02978497 NOV-90-044671; EDB-91-012121

Title: Consultant considerations and design of coal tar site remediation studies

Author(s): Kropp, E.L. (Robinson and McElwee (US))

Title: American Gas Association 1989 operating section proceedings

Conference Title: American Gas Association Operating Section conference

Conference Location: New Orleans, LA (USA) Conference Date: 21-24 May 1989

Publisher: Arlington, VA (USA) American Gas Association

Publication Date: 1989 p 376-378 (610 p)

Report Number(s): CONF-8905185--

Note: Technical Paper 89-DT-77

Language: In English

Availability: American Gas Association, 1515 Wilson Blvd., Arlington, VA 22209 (USA)

Abstract: This paper addresses issues of hazardous waste site remediation.

The effects of the US Comprehensive Environmental Response Compensation and Liability Act are discussed.

Record - 161

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02973295 EDB-91-006920

Title: Differences in the bioavailability of various forms of arsenic and the implications for risk assessment and site remediation

Author(s): Evans, C.G.; Funsch, J.M.; Kelly, K.E.; Tsuji, J.S.
(Environmental Toxicology International, Inc., Seattle, WA (USA))

Title: The toxicologist. Volume 10

Conference Title: 29. annual meeting of the Society of Toxicology

Conference Location: Miami Beach, FL (USA) Conference Date: 12-16 Feb 1990

Publisher: Washington, DC (US) Society of Toxicology

Publication Date: 1990 p 352 (435 p)

Report Number(s): CONF-900284--

Language: In English

Availability: Society of Toxicology, 1101 Fourteenth St., N.W., Suite 1100, Washington, DC 20005

Abstract: Consideration of potential differences in bioavailability of various chemical/physical form(s) of a chemical is an important component of the dose-response evaluation step of a health risk assessment. Arsenic is commonly a chemical of concern at mining and smelter sites and exists in a variety of forms. Two forms of arsenic which we have investigated in recent health risk assessments are arsenopyrite, associated with mining operation, and arsenic in slag, a residual produced during the smelting of copper ore. The bioavailability of these compounds in soil was found to be very limited (less than 5%) in comparison to the forms of arsenic used to develop EPA's oral and inhalation cancer potency slopes for arsenic. The bioavailability of arsenopyrite is limited by its insolubility in water and HCl. Furthermore, G.I. absorption of the more soluble oxidation products of arsenopyrite in soil is more comparable to arsenic in suspension (undissolved) than arsenic in solution (dissolved). Exposure to arsenic in slag was found to be very limited because of its low leaching potential, its particle size distribution, and its limited absorption. This evaluation of the bioavailability of arsenopyrite and arsenic in slag has had important ramifications for site remediation at several sites. Estimates of health risk were significantly lower than those based on assumptions of higher bioavailability, providing support for the establishment of higher cleanup levels.

124

Record - 162

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02959626 GRA-90-92854; EDB-90-176869

Title: Evaluation of treatment technologies in the natural gas industry:

Production water/waste management and site remediation. Volume 3.

Topical report, September 1988-October 1989

Author(s)/Editor(s): Tallon, J.T.; Fillo, J.P.; Bratina, J.E.; Peach, L.A.;
Halapin, T.

Corporate Source: ENSR, Pittsburgh, PA (USA)

Publication Date: May 1990 (395 p)

Report Number(s): PB-90-271867/XAB

Contract Number (Non-DOE): GRI-5084-253-1117; GRI-5086-254-1334

Note: See also Volume 2, PB-90-271859; Also available in set of 3 reports

PC E99/MF E99, PB-90-271834

Language: In English

Availability: NTIS, PC A17/MF A03

Abstract: The report examines the technologies that can potentially be applied to treating production waters and wastes from natural gas industry operations, and those that may be suitable for remediating sites affected by former operations. The information provided in the report is intended to assist the natural gas industry to select appropriate environmental management strategies. Candidate technologies were considered in the evaluation for their applicability to treatment of specific production water/waste streams, ground water and soil, and/or the constituents known or suspected to be present in the media. Where available, performance and economic data directly related to the use of the technology application within the gas industry are identified and compiled for referencing. Performance and economic data from closely related technology application are also selectively included. Information identified from the evaluation is compiled on a computer data base system (Paradox) in two levels of detail. Level I presents a general overview of each technology examined, and Level II presents performance and economic information.

125

Record - 163

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02959625 GRA-90-92853; EDB-90-176868

Title: Evaluation of treatment technologies in the natural gas industry:

Production water/waste management and site remediation. Volume 2.

Topical report, September 1988-October 1989

Author(s)/Editor(s): Tallon, J.T.; Fillo, J.P.; Bratina, J.E.; Peach, L.A.;

Halapin, T.

Corporate Source: ENSR, Pittsburgh, PA (USA)

Publication Date: May 1990 (196 p)

Report Number(s): PB-90-271859/XAB

Contract Number (Non-DOE): GRI-5084-253-1117; GRI-5086-254-1334

Note: See also Volume 1, PB--90-271842 and Volume 3, PB--90-271867; Also available in set of 3 reports PC E99/MF E99, PB--90-271834

Language: In English

Availability: NTIS, PC A09/MF A02

Abstract: The report examines the technologies that can potentially be applied to treating production waters and wastes from natural gas industry operations, and those that may be suitable for remediating sites affected by former operations. The information provided in the report is intended to assist the natural gas industry to select appropriate environmental management strategies. Candidate technologies were considered in the evaluation for their applicability to treatment of specific production water/waste streams, ground water and soil, and/or the constituents known or suspected to be present in these media. Where available, performance and economic data directly related to the use of the technology application within the gas industry are identified and compiled for referencing. Information identified from the evaluation is compiled on a computer data base system (Paradox) in two levels of detail.

126

Record - 164

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02959624 GRA-90-92852; EDB-90-176867

Title: Evaluation of treatment technologies in the natural gas industry:

Production water/waste management and site remediation. Volume 1.

Topical report, September 1988-October 1989

Author(s)/Editor(s): Tallon, J.; Fillo, J.P.; Bratina, J.E.; Peach, L.A.;

Halopin, T.

Corporate Source: ENSR, Pittsburgh, PA (USA)

Publication Date: May 1990 (243 p)

Report Number(s): PB-90-271842/XAB

Contract Number (Non-DOE): GRI-5084-253-1117; GRI-5086-254-1334

Note: See also Volume 2, PB-90-271859; Also available in set of 3 reports

PC E99/MF E99, PB-90-271834

Language: In English

Availability: NTIS, PC A11/MF A02

Abstract: The report examines the technologies that can potentially be applied to treating production waters and wastes from natural gas industry operations, and those that may be suitable for remediating sites affected by former operations. The information provided in the report is intended to assist the natural gas industry to select appropriate environmental management strategies. Candidate technologies were considered in the evaluation for their applicability to treatment of specific production water/waste streams, ground water and soil, and/or the constituents known or suspected to be present in these media. Where available, performance and economic data directly related to the use of the technology application within the gas industry are identified and compiled for referencing. Information identified from the evaluation is compiled on a computer data base system (Paradox) in two levels of detail.

Record - 165

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02959623 GRA-90-92851; EDB-90-176866

Title: Evaluation of treatment technologies in the natural gas industry:

Production water/waste management and site remediation. Topical
reports, September 1988-October 1989

Corporate Source: ENSR, Pittsburgh, PA (USA)

Publication Date: May 1990 (834 p)

Report Number(s): PB-90-271834/XAB

Note: Set includes PB--90-271842; PB--90-271867

Language: In English

Availability: NTIS, PC EE99/MF E99

Abstract: This three volume set evaluates waste processing methods
available to the natural gas industry for mitigation of environmental
impacts of their waste streams, especially the waste waters from
production wells. Performance and economic data are compiled into a
computer data base system, Paradox, in two levels of detail: general
overview of each technology; and performance and economic data. The
volumes have been indexed separately.

Record - 166

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02927970 NOV-90-028289; EDB-90-145213; INS-90-031969

Title: The long-term climate assessment task of the protective barrier development program for low-level waste site remediation at the Hanford site

Author(s): Petersen, K.L. (Westinghouse Hanford Co., Richland, WA (USA))

Title: High level radioactive waste management

Conference Title: 1. international topical meeting on high-level radioactive waste management

Conference Location: Las Vegas, NV (USA) Conference Date: 8-12 Apr 1990

Publisher: La Grange Park, IL (USA) American Nuclear Society

Publication Date: 1990 p 1235-1239 (1456 p)

Report Number(s): CONF-900406--

ISBN: 0-87262-751-9

Language: In English

Availability: American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 (USA)

Abstract: This paper discusses a study plan being developed to guide a multiyear program to assess long-term climate change and optimize the design of protective barriers. A protective barrier alternative being considered for the disposal of some low-level radioactive defense waste stored near the surface at the Hanford Site, Washington is described. A stepwise approach to climatic data acquisition is relied on in obtaining needed information for concurrent barrier tasks, and in developing a local climate forecast model.

Record - 167

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02922080 EDB-90-139322

Title: California seeks new technologies for site remediation

Source: Journal of the Air and Waste Management Association (USA) v 39:9.

Coden: JAWAE

Publication Date: Sep 1989 p 1164-1165

Language: In English

Abstract: Innovative new technologies for site remediation will be sought by the California Department of Health Services (Department), Toxic Substances Control Division, Alternative Technology Section, for assessment in the field as full-scale demonstration projects. The Remedial Technology Assessment Program (RTAP) fosters emerging technologies, which have been successfully tested in the laboratory, at bench scale, or at pilot scale and are ready for field or full-scale demonstration project testing. The Department will solicit interest from companies to conduct full-scale demonstrations of remedial treatment technologies for site remediation. The solicitation responses will be used to compile a list of treatment technologies which can be considered during the Remedial Action Plan (RAP) process for implementation at State-lead Bond Expenditure Plan sites and possibly responsible party sites. RTAP will attempt to match submitted remedial technologies to specific hazardous waste sites via the RAP process. A technical report, including an evaluation of the technical and economic feasibility, will be prepared after each demonstration project.

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02917010 EDB-90-134251; ERA-15-045382

Title: How to save time and money during PCB site remediation

Author(s): Marsh, D.T. (Remcor, Inc., Pittsburgh, PA (USA)); Ianniello, M.L. (General Electric Co., Schenectady, NY (USA))

Title: Superfund '88

Conference Title: Superfund '88: 9th national conference and exhibition on hazardous waste

Conference Location: Washington, DC (USA) Conference Date: 28-30 Nov 1988

Publisher: Silver Spring, MD (US) Hazardous Materials Control Research Institute

Publication Date: 1988 p 251-254 (659 p)

Report Number(s): CONF-881141--

Language: In English

Availability: Hazardous Materials Control Research Institute, 9300 Columbia Blvd., Silver Spring, MD 20910

Abstract: Screening methods can represent significant savings in time and expense during the investigation and remediation of sites contaminated with PCBs. This paper presents data from three field investigations of PCB-contaminated sites and evaluates the field performance of a quick-screen method for the analysis of PCBs in soil. The objective of each site investigation was to determine the vertical and areal extent of the PCB soil contamination preliminary to excavation and removal of soils contaminated above a prescribed concentration level. At two of the sites, the field method was also used to verify that the target cleanup criteria had been achieved once remediation was complete. The quick-screen method used was the Kwik-Skrene Analytical Testing System, manufactured by Syprotec Inc. Kwik-Skrene is a semi-quantitative colorimetric analysis capable of determining the total chlorine extracted from a variety of media (including soil) above and below a pre-selected concentration level or cleanup criterion. The field screening results were also used at two sites to target samples for additional laboratory testing. The collected samples were carefully mixed and split into two fractions. One fraction was analyzed using Kwik-Skrene in the field; if the field analysis indicated the PCB concentration on the sample was below the target level, then the split fraction was analyzed by a laboratory using conventional gas chromatography techniques for the quantitative determination of PCB concentration. This paper presents field and laboratory data from the three sites. Conventional analytical costs are compared with total PCB analytical costs using Kwik-Skrene in the field. Cost factors include sample collection and record keeping time, shipping charges, and potential cost penalties for quick turnaround time on conventional analyses, analytical costs, and labor and equipment charges waiting for results. 1 fig., 4 tabs.

Record - 169

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02917005 EDB-90-134246; ERA-15-045372

Title: Assessment of site remediation technologies in European countries

Author(s): Nunno, T.J.; Hyman, J.A. (Alliance Technologies Corp., Bedford, MA (USA)); Pheiffer, T. (Environmental Protection Agency, Washington, DC (USA))

Title: Superfund '88

Conference Title: Superfund '88: 9th national conference and exhibition on hazardous waste

Conference Location: Washington, DC (USA) Conference Date: 28-30 Nov 1988

Publisher: Silver Spring, MD (US) Hazardous Materials Control Research Institute

Publication Date: 1988 p 193-198 (659 p)

Report Number(s): CONF-881141--

Language: In English

Availability: Hazardous Materials Control Research Institute, 9300 Columbia Blvd., Silver Spring, MD 20910

Abstract: Site remediation is a pressing issue in European countries due to limited availability of land. Therefore, much progress is being made in the development of effective technologies for remediating contaminated sites. The purpose of this program was to investigate the most successful and innovative technologies for potential application into US markets. This EPA-sponsored project was based on a 9-mo. research effort which identified 95 innovative technologies in use or being researched in foreign countries. The most promising technologies were studied in-depth through personal interviews with the engineers who research and apply these technologies; and tours of laboratory models and full-scale installations were also taken. The most successful full-scale technologies investigated were developed in Holland, West Germany and Belgium. These technologies include vacuum extraction of hydrocarbons from soil, in-situ washing of cadmium-polluted soil, rotating biocontactors for treating pesticides in groundwater, high-temperature slagging incineration of low-level radioactive wastes, in situ steam stripping, and a number of land farming and soil washing operations. The paper provides descriptions of 13 site remediation techniques that have shown such promise in laboratory studies or in practice to warrant consideration of their use in the US. 9 refs., 2 figs., 6 tabs.

Record - 170

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02912587 NOV-90-024306; EDB-90-129828

Title: On-site remediation of organically impacted soils on oilfield properties

Author(s): Hildebrandt, W.W.; Wilson, S.B. (Groundwater Technology, Inc. (US))

Title: Proceedings of the SPE California regional meeting

Conference Title: 1990 Society of Petroleum Engineers (SPE) California regional meeting

Conference Location: Ventura, CA (USA) Conference Date: 4-6 Apr 1990

Publisher: Richardson, TX (USA) Society of Petroleum Engineers

Publication Date: 1990 p 401-406 (608 p)

Report Number(s): CONF-9004156--

Note: Technical Paper SPE 20061

Language: In English

Availability: Society of Petroleum Engineers, P.O. Box 833836, Richardson, TX 75083 (USA)

Abstract: This paper describes circumstances that cause soil to be contaminated by crude oil on oilfield properties. Requirements of a modern on-site bioremediation system are outlined.

Record - 171

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02866463 EDB-90-083701; ERA-15-032034

Title: Database for hydrocarbon-contaminated site remediation: Software and manual

Author(s)/Editor(s): Spear, C.E.; Worm, G.H.; Rosebrook, D.D.

Corporate Source: Electric Power Research Inst., Palo Alto, CA (USA) Mill Creek Co., Houston, TX (USA)

Sponsoring Organization: EPRI

Publication Date: Apr 1990 (50 p)

Report Number(s): EPRI-GS-6812

Note: Report includes 5 diskettes designed to operate on an IBM PC or compatible equipment

Language: In English

Availability: Research Reports Center, Box 50490, Palo Alto, CA 94303

Abstract: This document comprises both the final report for this project as well as the user's manual for the MGP Site Remediation Database. The database provides information about contractors working in environmental services. The data in the database were secured directly from each contractor by questionnaire. The database contains such information as EPA districts in which the organization works, qualifications, expertise, references, etc. The report describes the steps taken in constructing the database. 1 fig.

Record - 172

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02849655 EDB-90-066892

Title: Innovative technologies for site remediation at California State Superfund Sites

Author(s): Boggs, R.M. (Dames and Moore, Sacramento, CA (USA))

Title: Proceedings of the second national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods.

Volume III

Conference Title: 2. national outdoor action conference on aquifer restoration, ground water monitoring and geophysical methods

Conference Location: Las Vegas, NV (USA) Conference Date: 23-26 May 1988

Publisher: Dublin, OH (US) National Water Well Association

Publication Date: 1988 p 1381-1392 (448 p)

Report Number(s): CONF-8805312--

Language: In English

Availability: National Water Well Association, 6375 Riverside Dr., Dublin, OH 43017

Abstract: As more hazardous waste sites are discovered and begin the RI/FS stage of site mitigation, there is an increasing need for new and innovative technologies for remediation of these contaminated facilities. In response to this need, both federal and state laws and regulations have been adopted which promote the use of alternative technologies. In addition to regulatory incentives, federal and state agencies have been providing funding and technical assistance to technology developers in order to conduct demonstration testing of these technologies. The federal program for providing financial and technical assistance is entitled SITE (Superfund Innovative Technology Evaluation). The California Department of Health Services (DHS) has a similar program in which technology developers can receive variances and limited amounts of funding in order to conduct demonstration tests. This paper presents an overview of the regulatory requirements which promote the use of alternative technologies for remediation of contaminated sites. The federal and California technology demonstration assistance programs are described. The paper presents a demonstration test case history which involved the use of a transportable catalytic oxidation system. The results of the demonstration test are presented. This paper also presents an overview of the various technologies which are currently available or are being evaluated for cleanup of contaminated sites. A brief summary of the technologies, the type of contamination they treat (metals, PCBs, organics, etc.), and the contaminated media they treat (soil, sludge, groundwater) is also presented.

Record - 173

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02822411 EDB-90-039635; INS-90-008066; NTS-90-010838; ERA-15-019415
Title: The long-term climate change assessmenet task of the protective
barrier developoment program for low-level waste site remediation at
the Hanford Site, Washington
Author(s)/Editor(s): Petersen, K.L.
Corporate Source: Westinghouse Hanford Co., Richland, WA (USA)
Sponsoring Organization: DOE/DP
Conference Title: International conference for high-level radioactive waste
management
Conference Location: Las Vegas, NV (USA) Conference Date: 8-12 Apr 1990
Publication Date: Jan 1990 (6 p)
Report Number(s): WHC-SA-0808 CONF-900406-22
Order Number: DE90006310
Contract Number (DOE): AC06-87RL10930
Language: In English
Availability: NTIS, PC A02/MF A01; OSTI; INIS; GPO Dep.
Abstract: A study plan is being developed to guide a multiyear program to
assess long-term climate change and optimize the design of protective
barriers. A protective barrier alternative is being considered for the
disposal of some low-level radioactive defense waste stored near the
surface at the Hanford Site, Washington. These barriers are being
designed to limit movement of radionuclides and other contaminants to
the accessible environment for at least 1000 years and possibly as long
as 10,000 years. A stepwise approach to climatic data acquisition will
be relied on in obtaining needed information for concurrent barrier
tasks, and in developing a local climate forecast model. This model
will need to couple past climate patterns with models of regional and
global climate drivers to provide bounding conditions for barrier
performance assessment analyses. 9 refs., 3 figs.

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02822148 CANM-90-004459; EDB-90-039372; ERA-15-019285
Title: Comprehensive site remediation CSR sup tm anchored by
bioreclamation saves groundwater supply of small mid Atlantic community
Author(s): Yaniga, P.M.; Aceto, F.; Fournier, L.; Matson, C.
(Groundwater Technology, Inc. Chadds Ford, PA (USA))
Title: Haztech Canada Toronto '89: Environmental control/hazardous waste
management conference proceedings
Corporate Source: Haztech Canada, Edmonton, AB (Canada)
Conference Title: Haztech Canada Toronto '89: environmental
control/hazardous waste management conference
Conference Location: Mississauga (Canada) Conference Date: 16-18 May 1989
Publication Date: 1989 p 426-440 (494 p)
Report Number(s): HAZ-CE02857 CONF-8905280--^ CE--02857
Language: In English
Availability: Haztech Canada, 4936-87th St., no. 26, Edmonton, AB, CAN T6E
5W3.
Abstract: A small community in northeastern Pennsylvania used the
Comprehensive Site Remediation process to save its drinking water
supply wells from hydrocarbon contamination. The contamination occurred
in January 1985. Approximately 1,000 gal of regular leaded gasoline
leaked from a 20-year-old underground storage tank at the Borough's
Public Water Works, 50 ft from one of the supply wells. All three wells
and all water pumps were shut down after the discovery of the leak. The
first step of restoration was the removal of the tank and the
determination of the extent of the contamination. After the plume was
defined, a 6 in recovery well was installed and the pumping of the
contaminated water began; in addition, an aeration apparatus was
constructed. The water was stripped/treated for dissolved constituents
and discharged into a local surface stream. However, only less than 15%
of the total contamination could be recovered in this way. Since
excavation of the contaminated ground was not, in this case, feasible,
a biodegradation program was designed and implemented in order to
reduce soil-absorbed and dissolved hydrocarbons, using both
biodegradation and standard pump-and-treat technology. Microbiologists,
after designing and piloting the nutrient mix program, began adding
hydrogen peroxide and nutrients to the contaminated water to enhance
the natural degradation process. A July 1987 examination of dissolved
hydrocarbons showed nearly complete remediation of soil and ground
water. 4 figs., 1 tab.

Record - 175

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02811274 NOV-90-096118; EDB-90-028496

Title: Regulation and control of air contaminants during hazardous waste site remediation

Author(s): Coy, C.A. (South Coast Air Quality Management District, El Monte, CA (USA))

Conference Title: 80. annual meeting of the Air Pollution Control Association

Conference Location: New York, NY (USA) Conference Date: 21-26 Jun 1987

Source: Proceedings, Annual Meeting, Air Pollution Control Association (USA) v 1. Coden: PRAPA ISSN: 0193-9688

Publication Date: 1987 p 1-12

Report Number(s): CONF-870695--

Note: Technical Paper 87-18.1

Language: In English

Abstract: Refinery wastes have been most often identified as the problem for sites in the South Coast Air Quality Management District and the contaminants posing the greatest short term hazard from these sites have been identified as sulfur dioxide and tetrahydrothiophenes.

Without proper planning, excavation activities have the potential to cause severe public nuisance problems due to the emission of odors and potentially toxic or hazardous emissions. This paper presents two case studies of this type of excavation including site history summaries and a review of air monitoring data developed during the site remediation activities. The discussion examines the approach developed by the South Coast Air Quality Management District, a regional regulatory agency with jurisdiction encompassing the greater Los Angeles area of Southern California, to regulate control of emissions during the cleanup of abandoned or uncontrolled hazardous waste sites in order to prevent similar occurrence of public nuisance or threat to public health.

Application of this approach is illustrated by an overview of the current systematic planning involved in proposed excavation activities at major Southern California waste sites.

Record - 176

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02808840 NOV-90-096131; EDB-90-026062

Title: Waste disposal site remediation A case history

Author(s): Gallagher, M.P.; Weiss, H.J. (Texaco, Inc., Beacon, NY (USA))

Conference Title: 80. annual meeting of the Air Pollution Control
Association

Conference Location: New York, NY (USA) Conference Date: 21-26 Jun 1987

Source: Proceedings, Annual Meeting, Air Pollution Control Association
(USA) v 1. Coden: PRAPA ISSN: 0193-9688

Publication Date: 1987 p 1-19

Report Number(s): CONF-870695--

Note: Technical Paper 87-11.7

Language: In English

Abstract: The authors present a hazardous waste site remediation case history of Texaco's Beacon Disposal Site. The authors chose it because it deals with most of the problem issues: clean-up criteria, residents within 250 feet of waste excavation, the sampling and analysis of a public drinking water system, remediation conducted across property lines, citizen activist group involvement, agency consent order negotiation, identification and special handling along with proper disposal of unknown waste containers including laboratory chemicals and cylinders, installation of groundwater monitor wells along a public thoroughfare in the local residential community and finally, regulatory problems involving the simultaneous remediation of six disposal sites subject to CERCLA regulations and the closure of one RCRA permitted facility within the same area. This case is presented in light of the successful completion of the project in a timely, and cost effective manner.

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02807479 CANM-89-004083; EDB-90-024697; ERA-15-012542

Title: On-site remediation of gasoline-contaminated soil

Author(s): Smith, D.L.; Sabherwal, I.H

Title: Haztech Canada: Dangerous goods and hazardous waste management conference proceedings

Corporate Source: Haztech Canada, Edmonton, AB (Canada)

Conference Title: Haztech Canada: dangerous goods and hazardous waste management conference

Conference Location: Mississauga (Canada) Conference Date: 12-14 May 1987

Publication Date: 1987 p 481-495 (536 p)

Report Number(s): HAZ-CE-02853 CONF-8705398--^ CE--02853

Language: In English

Availability: Haztech Canada, 4936-87th St., no. 26, Edmonton, AB, CAN T6E 5W3.

Abstract: Gasoline leaking from service station tanks threatens groundwater supplies in many areas of the United States. Gasoline leaks are often difficult to detect and substantial quantities of soil, up to hundreds of msup 3, can be contaminated if the leakage is allowed to continue for years. This paper reviews on-site oxidation of gasoline contaminated soils as a remediation method. Chemical oxidation of soil contaminants may allow cleanup to be completed in several days as opposed to biodegradation or air stripping methods which may take months or years to complete the process. The advantages and disadvantages of hydrogen peroxide, which has long been known to oxidize many classes of organic compounds, as an oxidizer are discussed. Hydrogen peroxide oxidation is used in the patented Llandtreat process. Llandtreat is a synthetic polysilicate; used as a finely divided powder. The silicate matrix is expanded by a high-temperature, high-vacuum process, creating Frenkel defects; these defects become active sites where hydrogen peroxide and gasoline components can be adsorbed. The chemical reactions involved, the treatment protocol, the safety precautions, site closure and regulatory precautions are discussed. The data from two soil treatment projects performed in Southern California are presented. 2 refs., 2 figs., 6 tabs.

Record - 178

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02807469 NOV-90-096162; EDB-90-024687

Title: Leaking underground storage tank site remediation alternatives

Author(s): Preslo, L. (Roy F. Weston, Inc., Concord, CA (US)); Miller, M.;

McLearn, M. (Electric Power Research Inst., Palo Alto, CA (USA));

Suyama, W. (Southern California Edison Co., Rosemead, CA (USA));

Kostecki, P. (Massachusetts Univ., Amherst, MA (USA))

Conference Title: 80. annual meeting of the Air Pollution Control
Association

Conference Location: New York, NY (USA) Conference Date: 21-26 Jun 1987

Source: Proceedings, Annual Meeting, Air Pollution Control Association
(USA) v 1. Coden: PRAPA ISSN: 0193-9688

Publication Date: 1987 p 1-16

Report Number(s): CONF-870695--

Note: Technical Paper 87-16.2

Language: In English

Abstract: This paper summarizes the results of a jointly funded study by
the Electric Power Research Institute (EPRI) and the Utility Solid
Waste Activities Group (USWAG). The study describes and evaluates
available technologies for remediating soil and groundwater containing
petroleum products released from an underground storage tank leak or
other discharges, leaks, or spills.

Record - 179

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02789536 EDB-90-006749; NTS-90-007315; INS-90-000964; ERA-15-007041
Title: The observational approach for site remediation at federal
facilities
Author(s)/Editor(s): Myers, R.S.; Gianti, S.J. (Pacific Northwest Lab.,
Richland, WA (USA); CH2M Hill, Reston, VA (USA))
Corporate Source: Pacific Northwest Lab., Richland, WA (USA)
Sponsoring Organization: DOE/EH
Conference Title: 10. HMCRI's national conference and exhibition
Conference Location: Washington, DC (USA) Conference Date: 27-29 Nov 1989
Publication Date: Nov 1989 (14 p)
Report Number(s): PNL-SA-17455 CONF-8911152--1
Order Number: DE90003635
Contract Number (DOE): AC06-76RL01830
Language: In English
Availability: NTIS, PC A03/MF A01; OSTI; INIS; GPO Dep.
Abstract: The observational approach, developed by geotechnical engineers
to cope with the uncertainty associated with subsurface construction
such as tunnels and dams, can be applied to hazardous waste site
remediation. During the last year, the observational approach has
gained increasing attention as a means of addressing the uncertainties
involved in site remediation. In order to evaluate the potential
advantages and constraints of applying the observational approach to
site restoration at federal facilities, a panel of scientists and
engineers from Pacific Northwest Laboratory and CH2M Hill was convened.
Their review evaluated potential technical and institutional advantages
and constraints that may affect the use of the observational approach
for site remediation. This paper summarizes the panel's comments and
conclusions about the application of the observational approach to site
remediation at federal facilities. Key issues identified by the panel
include management of uncertainty, cost and schedule, regulations and
guidance, public involvement, and implementation. 5 refs.

Record - 180

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02783216 CANM-89-003164; EDB-90-000429

Title: Come-by-Chance refinery site remediation

Corporate Source: Acres International Ltd., St. John's, NF (Canada)

Publication Date: 1987 (178 p)

Report Number(s): AI/N-89-02740 MICROLOG--89-02740

Language: In English

Availability: PC Dept. of Environment and Lands, Elizabeth Towers,
Elizabeth Ave., P.O. Box 4750, St. John's, NF, CAN A1C 5T7; MF
CANMET/TID, Energy, Mines and Resources Canada, 555 Booth St., Ottawa,
Ont., Canada K1A 0G1.

Abstract: From 1973 until closure of the plant in 1976, a petroleum refinery was operated at Come-by-Chance in Newfoundland. During this time, 2 unregulated sites in the general vicinity of the plant were apparently used largely for the disposal of construction waste, while a third site was used to store full and empty drums of refinery chemicals. This report is about a hydrogeological investigation of these 3 sites conducted in order to assess pollution and the impact of pollution on the environment and in order to recommend any remedial works required to eliminate site hazards to the environment. The 5 steps of the investigation were the following: preliminary hydrogeological/geotechnical survey of each site; assessment of the extent of contamination and seepage of any chemicals from each site; chemical sampling and analysis to confirm the type, concentration and extent of any chemicals in the soil and ground water; evaluation of each site in terms of impacts in the environment in-site and off-site; and recommendations about remedial measures. The cost of the recommended remedial measures, including the monitoring of ground water, is expected to be \$400,000. 7 refs., 9 figs., 13 tabs.

Record - 181

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02385145 EDB-89-131120

Title: Development of site remediation technologies in European countries

Author(s): Nunno, T.J.; Hyman, J.A.; Pheiffer, T.

Affiliation: Alliance Technologies Corp., Bedford, MA (USA)

Title: 1988 DOE model conference proceedings. Volume 4

Corporate Source: Analysas Corp., Oak Ridge, TN (USA)

Conference Title: 4. annual DOE model conference

Conference Location: Oak Ridge, TN, USA Conference Date: 3-7 Oct 1988

Publication Date: 1988 p 1381-1392

Report Number(s): CONF-881054-Vol.4

Order Number: DE89014703

Note: Portions of this document are illegible in microfiche products

Language: English

Availability: NTIS, PC A15/MF A01; 1.

Abstract: Site remediation is a pressing issue in European countries due to limited availability of land. Therefore, much progress is being made in the development of effective technologies for remediating contaminated sites. The purpose of this program was to investigate the most successful and innovative technologies for potential application into US markets. This EPA-sponsored project was based on a 9-month research effort which identified 95 innovative technologies in use or being researched in foreign countries. The most promising technologies were studied in-depth through personal interviews with the engineers who research and apply these technologies, and tours of laboratory models and full-scale installations. The most successful full-scale technologies investigated were developed in Holland, West Germany and Belgium. These technologies include vacuum extraction of hydrocarbons from soil, in situ washing of cadmium-polluted soil, rotating biocontractors for treating pesticides in ground water, high-temperature slagging incineration of low-level radioactive wastes, in situ steam stripping, and a number of landfarming and soil washing operations. The paper provides description of 13 site remediation techniques that have shown such promise in laboratory studies or in practice to warrant consideration of their use in the US.

Record - 182

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02385140 EDB-89-131115

Title: In situ technologies for site remediation

Author(s): Ghassemi, M.

Affiliation: URS Consultants, Inc., Long Beach, CA (USA)

Title: 1988 DOE model conference proceedings. Volume 3

Corporate Source: Martin Marietta Energy Systems, Inc., Oak Ridge, TN (USA)

Analysas Corp., Oak Ridge, TN (USA)

Conference Title: 4. annual DOE model conference

Conference Location: Oak Ridge, TN, USA Conference Date: 3-7 Oct 1988

Publication Date: 1988 p 697-708

Report Number(s): CONF-881054-Vol.3

Order Number: DE89014702

Note: Portions of this document are illegible in microfiche products

Language: English

Availability: NTIS, PC A14/MF A01; 1.

Abstract: In situ treatment of waste and soil at contaminated sites offers an alternative to the traditional approaches to site remediation involving excavation and disposal or onsite isolation. This paper provides an overview of the capabilities and limitations of some of the leading in situ technologies for site remediation. The In Situ Detoxifier is presented as an example of innovative system potentially capable of implementing a range of in situ treatment.

Record - 183

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02385038 EDB-89-131013

Title: Impacts from the implementation of a prioritization system for funding inactive waste site remediation activities at the Savannah River Plant

Author(s): St. Clair, G.T.; Browning, D.S.; Whitaker, W.C.

Affiliation: NUS Corp., Aiken, SC (USA)

Title: 1988 DOE model conference proceedings. Volume 5

Corporate Source: Martin Marietta Energy Systems, Inc., Oak Ridge, TN (USA)
Analysas Corp., Oak Ridge, TN (USA)

Conference Title: 4. annual DOE model conference

Conference Location: Oak Ridge, TN, USA Conference Date: 3-7 Oct 1988

Publication Date: 1988 p 1439-1447

Report Number(s): CONF-881054-Vol.5

Order Number: DE89014704

Note: Portions of this document are illegible in microfiche products

Language: English

Availability: NTIS, PC A13/MF A01; 1.

Abstract: The US Department of Energy (DOE) has established an Environmental Restoration (ER) Program budget category to fund investigation and remedial activities at DOE Defense Programs (DOE-DP) inactive waste sites. The ER activities are required by Section 3004(u) of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA). Funds to be appropriated by Congress for this effort through 1993 are expected to exceed one-half billion dollars. Due to overlapping regulatory requirements and the number of inactive waste sites at DOE-DP installations, a system has been established to determine how the funding should be allocated. DOE is developing a prioritization system that will rank environmental investigation and remediation programs. This paper examines impacts that the prioritization system may have on the Savannah River Plant, including remedial action schedules previously negotiated with Federal and state regulatory agencies.

Record - 184

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02364785 EDB-89-110757

Title: Palmerton Zinc Superfund Site remediation strategy

Author(s): Tan, P.M.

Affiliation: Environmental Protection Agency, Philadelphia, PA (USA)

Conference Title: 22. annual conference on trace substances in
environmental health

Conference Location: St. Louis, MO, USA Conference Date: 23-26 May 1988

Source: Trace Subst. Environ. Health (United States) v 12. Coden: PUMTA

Publication Date: 1988 p 296-305

Report Number(s): CONF-8805159-

Language: English

Abstract: The Palmerton Zinc Superfund Site is a former zinc smelting operation located in Palmerton, PA. Operation of this plant since the turn of the century has caused large quantities of zinc, cadmium, lead and copper to be emitted into the atmosphere in the vicinity of the plant. As a result of these emissions significant concentrations of these heavy metals in the soil have been measured within a large area surrounding the plant. Public health concerns related to these concentrations has, in part, caused the EPA to list this area as a superfund site on the National Priorities List (NPL). To perform an efficient Remedial Investigation/Feasibility Study at this site EPA needed to determine the extent and magnitude of the problem. In order to help in the design of the actual locations where soil samples should be taken certain quantitative and qualitative air pollution meteorological analyses were performed. In addition to the soil sampling, other media including groundwater and surface water were also analyzed. Also, studies which documented the chronic effects of heavy metal contamination on aquatic and terrestrial animals were initiated.

Record - 185

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02285124 EDB-89-030860

Author(s): Phillips, S.J.; Relyea, J.F.

Title: Low-level liquid waste disposal site remediation technology
development at the Hanford site

Corporate Source: Westinghouse Hanford Co., Richland, WA (USA)

Conference Title: 9. annual low-level radioactive waste management program
conference

Conference Location: Denver, CO, USA Conference Date: 25 Aug 1987

Publication Date: Oct 1987 p 12

Report Number(s): WHC-SA-0039; CONF-870859-32

Order Number: DE89004907

Contract Number (DOE): AC06-87RL10930

Note: Portions of this document are illegible in microfiche products

Language: English

Availability: NTIS, PC A03/MF A01 - OSTI; 1.

Abstract: Westinghouse Hanford Company is developing technologies
supporting long-term physical stabilization and isolation of liquid
waste materials in underground waste disposal crib and caisson
structures. Prototype equipment and methodologies are being developed
to dynamically consolidate and/or inject durable materials into and
proximal to these structures. To date, testing, development, and
demonstration of a mobile in situ waste treatment system for site
remediation of liquid waste disposal sites has been completed.

Continued testing and development activities are in progress for in
situ treatment of contaminated, industrial, solid low-level waste
materials. Conceptual design activities have also been initiated to
develop an injection system for application to low-level waste
underground tank and vault remediation. 10 refs., 2 figs.

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Record - 186

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02239994 INS-88-035495; ERA-14-000182; EDB-88-182738

Title: Low-level liquid waste disposal site remediation technology
development at the Hanford Site

Author(s): Phillips, S.J.; Relyea, J.F.

Affiliation: Westinghouse Hanford Co., Richland, WA (USA)

Title: Proceedings of the ninth annual DOE low-level waste management
forum: Technical session 4, Waste characterization and verification

Corporate Source: EG and G Idaho, Inc., Idaho Falls (USA)

Conference Title: 9. annual low-level radioactive waste management program
conference

Conference Location: Denver, CO, USA Conference Date: 25 Aug 1987

Publication Date: Feb 1988 p 14-24

Report Number(s): CONF-870859-Pt.4

Order Number: DE88013148

Language: English

Availability: NTIS, PC A05/MF A01; 1.

Abstract: Westinghouse Hanford Company is developing technologies
supporting long-term physical stabilization and isolation of liquid
waste materials in underground waste disposal crib and caisson
structures. Prototype equipment and methodologies are being developed
to dynamically consolidate and/or inject durable materials into and
proximal to these structures. To date, testing, development, and
demonstration of a mobile in situ waste treatment system for site
remediation of liquid waste disposal sites has been completed.

Continued testing and development activities are in progress for in
situ treatment of contaminated, industrial, solid low-level waste
materials. Conceptual design activities have also been initiated to
develop an injection system for application to low-level waste
underground tank and vault remediation.

Record - 187

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02229236 ERA-13-054947; EDB-88-171978

Title: Site remediation of heavy metals contaminated soils and ground water
at a former battery reclamation site in Florida

Author(s): Trnovsky, M.; Oxer, J.P.; Rudy, R.J.; Weinstein, G.L.;
Hartsfield, B.; Lindberg, S.E.; Hutchinson, T.C. (eds.)

Affiliation: Ecology and Environment, Inc.. Tallahassee, FL (USA)

Title: Heavy metals in the environment: Volume 1

Corporate Source: Oak Ridge National Lab., TN (USA)

Conference Title: 6. international conference on heavy metals in the
environment

Conference Location: New Orleans, LA, USA Conference Date: 15 Sep 1987

Publication Date: 1987 p 88-90

Report Number(s): ORNL/M-463; CONF-870937-Vol.1

Order Number: TI88006131

Language: English

Availability: CEP Consultants, Ltd., 26 Albany St., Edinburgh EH1 3QH, UK.

Abstract: Heavy metals contamination of soils, surface water, sediments,

and ground water was investigated and feasible remedial alternatives
were evaluated for the Sapp Battery Superfund site in northern Florida.

High lead concentrations were found in all four media. The upper
horizon soils contained up to 135,000 ppm lead. Contaminated ground
water in the surficial and intermediate aquifers was found to be
seeping through on-site sinkholes into the Florida aquifer. Remedial
alternatives were evaluated for the removal and treatment of 95,580
m³ (125,000 yd³) of soil and sediments and the treatment of
2.63 m³/min (1.0 MGD) of ground water.

Record - 188

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02212594 NOV-88-022320; EPA-14-004105; EDB-88-155334

Title: Application of risk assessment to selection among site remediation alternatives

Author(s): Salmon, E.J.; Brown, R.A.

Affiliation: Health, Safety and Risk Management, Intellus Corp., Irvine, CA (US)

Title: Proceedings of the 41st industrial waste conference

Conference Title: 41. annual Purdue industrial waste conference

Conference Location: West Lafayette, IN, USA Conference Date: 13 May 1986

Publisher: Lewis Publishers, Chelsea, MI

Publication Date: 1987 p 261-271

Report Number(s): CONF-860527-

Language: English

Abstract: The Environmental Protection Agency (EPA) mandated that any remedial decisions and strategies related to hazardous substances be scientifically and technologically sound, economically efficient, and socially equitable. This calls for application of risk assessment/management methodologies which the EPA's Administrator recognized as the most important and most difficult role emerging in the 1980's. It becomes necessary to develop well founded and consistent procedures as well as uniform and coordinated approaches that enable deciding if, when, and how remediation of risks arising from hazardous waste sites should be undertaken. The definition of risk assessment/management by the National Academy of Sciences distinguishes two components, namely: 1. The scientific exercise involved in the assessment of risks. 2. The political, economic, and social aspects of decision making about what action to take. In the simplest sense, risk assessment is the qualitative or quantitative characterization of potential adverse impacts of particular substances or agents on individuals or populations. It is a function of two measurable factors: hazard and exposure. Risk management, on the other hand, represents the complex judgement and analysis that uses the results of risk assessment to provide a decision about remediation.

Record - 189

<DIALOG File 241: (c) 1994 Electric Power Research Inst.Inc>

1046826 EPRI ACCESSION NO: 2128400 SUBFILE: EPRI TECHNICAL REPORT
Database for Hydrocarbon-Contaminated Site Remediation: Software and
Manual

REPORT NUMBER: EPRI GS-6812 0064p.

CONTRACT/GRANT NO.: RP2991-02

DOCUMENT TYPE: Final Report

PUBLICATION YEAR: 1990 04

EPRI DIVISION NAME: Generation & Storage Division

EPRI PROJECT MANAGER: Atherton, Linda Francis

GENERAL NOTE: Special pricing information: Domestic \$400.00; Overseas
\$400.00.

This software provides a database and retrieval system on environmental service contractors in the United States. The data, secured from the contractors by questionnaire, includes qualifications, references, personnel information, and information on facilities and sales.

BACKGROUND: Waste remediation is an attractive business venture, and the number of organizations entering the field has increased dramatically in the last few years. Identifying the specific expertise of these various organizations and obtaining other pertinent information about them is often difficult.

OBJECTIVE: To provide a computerized database and retrieval system of contractors supplying environmental services in the United States.

APPROACH: The developers secured data from waste disposal contractors by questionnaire, including data on EPA regional experience, references, experiences, technologies, professional qualifications, facilities, and sales. The developers also designed a program to allow users to retrieve from this database the companies meeting their requirements.

RESULTS: The database, on PC diskettes, contains information on almost 200 organizations. The retrieval system allows the user to list all the contractors satisfying minimum requirements in a specific category or all contractors meeting the minimum requirements from a set of categories. The user can print or display names or complete questionnaire responses. Although the user may not change a database entry, notes or memos may be appended with ease. The database program is self-contained; no additional software is needed to use it. The accompanying report provides a description of how the database and retrieval system were created and a complete user's manual.

EPRI PERSPECTIVE: These database disks provide users with a central repository of information on organizations working in the remediation area. Users will be able to identify organizations working in their region, learn their past experiences, compile a list of references, and apply other valuable information that may be used to narrow the field for contractor selection. Even first-time users will be able to access this database in a few minutes by referring to the "quick start" section of the user's manual.

Dialmail defaults: Inbox 2

Scan to list messages, folders ...

Read to read messages

Create to create a new message, folder ...

Answer to answer a message

Delete to erase a message, folder ...

Help for more information on any command
Clear to clear defaults & return to main menu
Exit to leave DIALMAIL

** For more commands, enter Page **

? exit;logoff
leaving Dialmail 2.28
08apr94 11:58:47 User021029 Session D70.2
\$14.40 1.200 Hrs FileMAIL
\$13.68 TYMNET
\$28.37 Estimated total session cost 1.207 Hrs.

File 1:ERIC 1966-1994/Mar
(c) format only 1994 Dialog Info.Svcs.

Set Items Description

? logoff
08apr94 11:59:02 User021029 Session D70.3
\$0.14 0.004 Hrs File1
\$0.14 Estimated cost File1
\$0.05 TYMNET
\$0.19 Estimated cost this search
\$28.56 Estimated total session cost 1.211 Hrs.
Logoff: level 33.03.10 D 11:59:02
??

Record - 118

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02095693 E.I. Monthly No: EIM8606-036467

Title: ADVANCED TREATMENT TECHNOLOGIES FOR REMOVAL AND DISPOSAL OF MICROPOLLUTANTS.

Author: Van Haute, A. (Ed.)

Corporate Source: Catholic Univ of Leuven, Haverlee, Belg

Conference Title: Advanced Treatment Technologies for Removal and Disposal of Micropollutants.

Conference Location: Antwerp, Belg Conference Date: 1984 Sep 24-25

Sponsor: Int Assoc on Water Pollution Research & Control, London, Engl

E.I. Conference No.: 07894

Source: Water Science and Technology v 18 n 1 1986 85p

Publication Year: 1986

CODEN: WSTED4 ISSN: 0273-1223

Language: English

Document Type: CP; (Conference Proceedings)

Journal Announcement: 8606

Abstract: The volume contains seven papers presented at the meeting, all of which are abstracted separately. Subjects covered include treatment of acidic organic industrial wastes, heavy metal removal in colloid-stabilizing organic material and complexing agents, particle size distribution change in a fixed bed of granular activated carbon, tar sands wastewater treatment, activated carbon preparation from locally available waste materials, aluminate flocculation application in primary mixed wastewater treatment, and wastewater treatment plant upgrading in a chemical factory.

Record - 119

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

02033965 E.I. Monthly No: EI8610099522 E.I. Yearly No: EI86079020

Title: SOLVENT EXTRACTION IN NUCLEAR TECHNOLOGY.

Author: Navratil, James D.

Corporate Source: Rockwell Int, Golden, CO, USA

Source: Pure and Applied Chemistry v 58 n 6 Jun 1986, Invited Lect Presented at the Int Symp on Org Chem in Technol Perspect, Jerusalem, Isr, Jun 1-6 1986 p 885-888

Publication Year: 1986

CODEN: PACHAS ISSN: 0033-4545

Language: ENGLISH

Document Type: JA; (Journal Article) Treatment: X; (Experimental)

Journal Announcement: 8610

Abstract: Some aspects of solvent extraction chemistry in the field of nuclear technology are briefly reviewed. Applications of solvent extraction in actinide recovery and purification, radionuclide production, and reactor materials preparation are summarized. The need for new, more selective, solvent extraction reagents is presented via examples of recent work with bifunctional organophosphorus reagents applied to the removal of actinides from acidic radioactive waste solutions. (Author abstract) 45 refs.

Record - 120

<IALOG File 8: (c) 1994 Engineering Info. Inc.>

01984875 E.I. Monthly No: EI8606053784 E.I. Yearly No: EI86126012

Title: ELMINATION OF MICROPOLLUTANTS BY NaAlO//2 FLOCCULATION DURING PRIMARY TREATMENT OF MIXED WASTEWATER.

Author: Vanderborght, J. P.; Wollast, R.

Corporate Source: Univ Libre de Bruxelles, Brussels, Belg

Source: Water Science and Technology v 18 n 1 1986, Adv Treat Technol for Removal and Disposal of Micropollut, Antwerp, Belg, Sep 24-25 1984 p 67-74

Publication Year: 1986

CODEN: WSTED4 ISSN: 0273-1223

Language: ENGLISH

Document Type: JA; (Journal Article) Treatment: A; (Applications); X; (Experimental)

Journal Announcement: 8606

Abstract: The influence of NaAlO//2 -flocculation of mixed wastewater was investigated by conducting laboratory tests and using pilot-scale flocculation reactor. In comparison with the primary sedimentation, aluminate addition results in a lower residual concentration for Zn and Cd. For all metals under investigation (Cu, Cr, Zn, Cd, and Ni), the removal was found to be irreversible. Biological treatment was uninhibited by an addition of these metals when NaAlO//2 -flocculation was provided. (Author abstract) 4 refs.

Record - 121

<IALOG File 8: (c) 1994 Engineering Info. Inc.>

01914221 E.I. Monthly No: EIM8512-080735

Title: MINERALOGICAL ASPECTS OF THE DISPOSAL OF RADIOACTIVE WASTE.

Author: Simpson, P. R. (Ed.); Ivanovich, M. (Ed.)

Conference Title: Mineralogical Aspects of the Disposal of Radioactive Waste.

Conference Location: London, Engl Conference Date: 1983 Nov 10-11

Sponsor: Mineralogical Soc, Applied Mineralogy Group, London, Engl; Commission of the European Communities, Brussels, Belg

E.I. Conference No.: 06721

Source: Mineralogical Magazine v 49 pt 2 n 351 Apr 1985 p 151-299

Publication Year: 1985

CODEN: MNLMBB ISSN: 0026-461X

Language: English

Document Type: CP; (Conference Proceedings)

Journal Announcement: 8512

Abstract: This meeting proceedings contains 14 papers. The topics covered include: mineralogical aspects of radioactive waste disposal; geological perspective of high-level nuclear waste disposal; radioactive waste storage; glass crystallization; zeolite use for radioactive waste treatment; geological control of granite fracture permeability: natural barriers to radionuclide transport; uranium-series disequilibrium studies; radioactive waste repository in geological formations; thermal groundwater radionuclide transport.

Record - 122

<IALOG File 8: (c) 1994 Engineering Info. Inc.>

01875790 E.I. Monthly No: EIM8506-033310

Title: TREATMENT OF URANIUM MINING AND MILLING WASTEWATER USING BIOLOGICAL ADSORBENTS.

Author: Tsezos, M.

Conference Title: Proceedings of International Specialist Conference on Water Regime in Relation to Milling, Mining and Waste Treatment Including Rehabilitation with Emphasis on Uranium Mining.

Conference Location: Darwin, Aust Conference Date: 1983 Sep 4-9

Sponsor: Australian Water & Wastewater Assoc, Sydney, Aust

E.I. Conference No.: 04711

Source: Publ by Australian Water & Wastewater Assoc, Sydney, Aust p 15.

1-15. 16

Publication Year: 1983

ISBN: 0-908255-02-0

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8506

Abstract: Selected samples of waste microbial biomass originating from various industrial fermentation processes and biological treatment plants have been screened for biosorbent properties in conjunction with uranium, thorium and radium in aqueous solutions. Biosorption isotherms have been used for the evaluation of biosorptive uptake capacity of the biomass which was also compared to synthetic adsorbents such as activated carbon. 10 refs.

Record - 123

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01770801 E.I. Monthly No: EI8507056304 E.I. Yearly No: EI85056206

Title: SORPTION OF RADIONUCLIDES FROM LIQUID WASTES OF NUCLEAR POWERPLANTS ON OXIDIZED CHARCOALS AND ION EXCHANGE RESINS.

Author: Kul'skii, L. A.; Voloshinova, A. M.; Bliznyukova, V. A.; Smirnova, R. S.; Kol'chenko, V. A.

Corporate Source: Acad of Sciences of the Ukrainian SSR, A. V. Dumanskii Inst of Colloidal Chemistry & Water Chemistry, Kiev, USSR

Source: Soviet Journal of Water Chemistry and Technology (English Translation of Khimiya i Tekhnologiya Vody) v 6 n 4 1984 p 42-44

Publication Year: 1984

CODEN: SJWTDP

Language: ENGLISH

Document Type: JA; (Journal Article) Treatment: X; (Experimental)

Journal Announcement: 8507

Abstract: An investigation was conducted of the statics and dynamics of sorption of the nuclides ^{137}Cs , ^{90}Sr , ^{95}Zr - ^{95}Nb , and ^{144}Ce from aqueous solutions. It was found that in the sorption of radionuclides from liquid nuclear reactor wastes the protective effect factor is highest for type KU-2 resin and lowest for type BAU and SKT oxidized charcoals. On type BAU oxidized charcoal the monovalent cesium cation is poorly sorbed, and for type KB-4 resin the distribution coefficient for ^{137}Cs is 15 times greater than on type BAU charcoal. The high sorption of ^{95}Zr on cationites KB-4 and KU-2 is not an exchange sorption. 5 refs.

Record - 124

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01664879 E.I. Monthly No: EIM8407-051984

Title: ALTERNATIVE TREATMENT OF MEDIUM LEVEL LIQUID WASTE BY CHEMICAL PRECIPITATION AND SLUDGE VITRIFICATION.

Author: Halaszovich, St.; Dix, S.; Harms, R.; Merz, E.; Rosin, D.

Corporate Source: Kernforschungsanlage Juelich GmbH, Inst fuer Chemische Technologie der Nuklearen Entsorgung, Juelich, West Ger

Conference Title: Waste Management '83, Proceedings of the Symposium: Waste Isolation in the U. S. , Technical Programs and Public Education. (Volume 2: Waste Regulations and Programs: High-Level Waste.)

Conference Location: Tucson, Ariz, USA Conference Date: 1983 Feb 27-Mar 3

Sponsor: ANS, LaGrange Park, Ill, USA; ASME, Radwaste Systems Committee, New York, NY, USA; Univ of Arizona, Coll of Engineering, Tucson, Ariz, USA; DOE, Washington, DC, USA

E.I. Conference No.: 04339

Source: Publ by Arizona Board of Regents, Ariz, USA p 173-176

Publication Year: 1983

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8407

Record - 125

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01429259 E.I. Monthly No: EIM8307-049619

Title: MEDICAL COMMUNITY ROLE IN RADIOLOGICAL WASTE DISPOSAL.

Author: Patton, Dennis D.

Conference Title: Waste Management '82: Waste Isolation in the U. S. and Elsewhere, Technical Programs and Public Communications. (Volume 1: General.)

Conference Location: Tucson, Ariz, USA Conference Date: 1982 Mar 8-11

Sponsor: ANS, La Grange Park, Ill, USA; ASME Radwaste Systems Committee, New York, NY, USA; Univ of Arizona, Coll of Engineering, Tucson, Ariz, USA; DOE, Washington, DC, USA

E.I. Conference No.: 02585

Source: Proceedings of the Symposium on Waste Management 1982. Publ by Arizona Board of Regents, Ariz, USA p 135-141

Publication Year: 1982

CODEN: PSWMDY ISSN: 0275-6196

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8307

Record - 126

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01429249 E.I. Monthly No: EIM8307-049609

Title: FRENCH PRACTICE AND TRENDS IN THE TREATMENT AND CONDITIONING OF PWR LIQUID EFFLUENTS AND SOLID WASTES.

Author: Celeri, Jacques J.; Pottier, Paul E.; Sousselier, Y.

Corporate Source: Electricite de France, Service, Etudes et Projets, Thermiques et Nucleaires, Paris-La Defense, Fr

Conference Title: Waste Management '82: Waste Isolation in the U. S. and

Elsewhere, Technical Programs and Public Communications. (Volume 1: General.)

Conference Location: Tucson, Ariz, USA Conference Date: 1982 Mar 8-11

Sponsor: ANS, La Grange Park, Ill, USA; ASME Radwaste Systems Committee, New York, NY, USA; Univ of Arizona, Coll of Engineering, Tucson, Ariz, USA; DOE, Washington, DC, USA

E.I. Conference No.: 02585

Source: Proceedings of the Symposium on Waste Management 1982. Publ by Arizona Board of Regents, Ariz, USA p 15-37

Publication Year: 1982

CODEN: PSWMDY ISSN: 0275-6196

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8307

Record - 127

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01390413 E.I. Monthly No: EI8309080622 E.I. Yearly No: EI83103210

Title: REMOVAL OF RADIONUCLIDES OF TRANSITION METAL ELEMENTS FROM LOW-LEVEL LIQUID WASTE BY ELECTROLYTIC FLOTATION METHOD.

Author: Nakamura, Haruto; Sato, Toshikazu; Miyazaki, Kazuhide; Kubota, Masumitsu

Corporate Source: Japan Atomic Energy Research Inst, Ibaraki, Jpn

Source: Radioactive Waste Management and the Nuclear Fuel Cycle v 3 n 1 Sep 1982 p 17-27

Publication Year: 1982

CODEN: RWMCD4

Language: ENGLISH

Journal Announcement: 8309

Abstract: An electrolytic flotation method with aluminum alloy anode has been studied to remove nuclides of transition metal elements, such as transuranium elements and ^{60}Co , from low-level liquid waste. Optimum conditions have been determined by using solutions containing radioactive tracers and liquid waste from JAERI Reprocessing Test Plant which contains a small amount of Pu. Presence of sodium salts is preferred in a concentration of less than 0. 1 mole/l in order to facilitate this process. The waste is adjusted to be between pH 4 and pH 8 before electrolysis. This method is found to be suitable for final treatment to remove transition metal elements remaining after usual treatments.

Record - 128

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01259696 E.I. Monthly No: EIM8212-056237

Title: CO-DISPOSAL FACILITY FOR HAZARDOUS AND LOW-LEVEL RADIOACTIVE WASTES.

Author: Ferringo, D. P.; Kyriss, K. P.; Nehila, W. J.

Corporate Source: Gilbert Assoc Inc, Reading, Pa, USA

Conference Title: Proceedings of 1982 National Waste Processing Conference, 10th Biennial Conference: Meeting the Challenge.

Conference Location: New York, NY, USA Conference Date: 1982 May 2-5

Sponsor: ASME Solid Waste Process Div, New York, NY, USA

E.I. Conference No.: 00975

Source: Proceedings of National Waste Processing Conference 10th. Publ by ASME, New York, NY, USA p 161-168
Publication Year: 1982
CODEN: PWPCDV
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8212

Record - 129

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
01225741 E.I. Monthly No: EIM8207-008869

Title: PRELIMINARY EVALUATION OF ALTERNATIVE FORMS FOR IMMOBILIZATION OF HANFORD HIGH-LEVEL WASTES.

Author: Schulz, W. W.; Beary, M. M.; Gallagher, S. A.; Higley, B. A.; Johnston, R. G.; Kupfer, M. J.; Palmer, R. A.
Corporate Source: Rockwell Hanford Oper, Richland, Wash, USA
Conference Title: Scientific Basis for Nuclear Waste Management, Volume 3. (Proceedings of the 3rd International Symposium, held as part of the Annual Meeting of the Materials Research Society.)
Conference Location: Boston, Mass, USA Conference Date: 1980 Nov 17-20
E.I. Conference No.: 00226
Source: Scientific Basis for Nuclear Waste Management v 3. Publ by Plenum Press, New York, NY, USA and London, Engl p 67-74
Publication Year: 1981
CODEN: SBNMD5 ISBN: 0-306-40803-1
Language: English
Document Type: PA; (Conference Paper)
Journal Announcement: 8207

Record - 130

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
01225732 E.I. Monthly No: EIM8207-008860

Title: SCIENTIFIC BASIS FOR NUCLEAR WASTE MANAGEMENT, VOLUME 3.
Author: Moore, John G. (Ed.); Bryant, Ernest A. (Ed.); Ramspott, Lawrence D. (Ed.); Duguid, James O. (Ed.); Ross, Wayne A. (Ed.); Northrup, Clyde J. M. Jr. (Ed.); Steger, James G. (Ed.); Topp, Stephen V. (Ed.)

Corporate Source: Oak Ridge Natl Lab, Tenn, USA
Conference Title: Scientific Basis for Nuclear Waste Management, Volume 3. (Proceedings of the 3rd International Symposium, held as part of the Annual Meeting of the Materials Research Society.)
Conference Location: Boston, Mass, USA Conference Date: 1980 Nov 17-20
E.I. Conference No.: 00226
Source: Scientific Basis for Nuclear Waste Management v 3. Publ by Plenum Press, New York, NY, USA and London, Engl 632 p
Publication Year: 1981
CODEN: SBNMD5 ISBN: 0-306-40803-1
Language: English
Document Type: CP; (Conference Proceedings)
Journal Announcement: 8207

Record - 131

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01197212 E.I. Monthly No: EI8207060090 E.I. Yearly No: EI82050485

Title: SCIENTIFIC BASIS FOR NUCLEAR WASTE MANAGEMENT, VOLUME 3,
PROCEEDINGS OF THE 3RD INTERNATIONAL SYMPOSIUM, 1980.

Author: Moore, John G. (Ed.); Bryant, Ernest A. (Ed.); Ramspott,
Lawrence D. (Ed.); Duguid, James O. (Ed.); Ross, Wayne A. (Ed.);
Northrup, Clyde J. M. Jr. (Ed.); Steger, James G. (Ed.); Topp, Stephen V.
(Ed.)

Corporate Source: Oak Ridge Natl Lab, Tenn, USA

E.I. Conference No.: 00226

Source: Scientific Basis for Nuclear Waste Management v 3, Proc of the
3rd Int Symp, at Annu Meet of Mater Res Soc, Boston, Mass, USA, Nov 17-20
1980. Publ by Plenum Press, New York, NY, USA and London, Engl, 1981 632 p

Publication Year: 1980

CODEN: SBNMD5 ISSN: 0275-0112

Language: ENGLISH

Journal Announcement: 8207

Abstract: Proceedings include 77 papers that represent research programs
from a number of universities and government institutions in eight
countries. The 77 papers published in the proceedings are divided into 11
chapters. These encompass various aspects of high- and non-high-level
radioactive waste management ranging from repository characterization and
waste from production to product and performance assessment. Technical and
professional papers from this conference are indexed with the conference
code no. 00226 in the Ei Engineering Meetings (TM) database produced by
Engineering Information, Inc.

Record - 132

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01102958 E.I. Monthly No: EI8203025978 E.I. Yearly No: EI82111510

Title: HYDROLOGICAL STUDIES POSSIBLE WITH RADIONUCLIDES OF BOMB-TEST,
PRIMORDIAL AND NATURAL ORIGIN TO COMPLEMENT INVESTIGATIONS USING
MANUFACTURED RADIOTRACERS.

Author: White, K. E.

Source: Water Pollution Control (Maidstone, England) v 80 n 4 1981 p
498-512

Publication Year: 1981

CODEN: WPOCAH ISSN: 0043-129X

Language: ENGLISH

Journal Announcement: 8203

Abstract: The paper presents a review of the literature and reports on a
range of passive methods which have become feasible because of recent
advances in solid state physics and semiconductor technology which have
improved both the detection of nuclear radiation and the data processing.
25 refs.

Record - 133

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01063211 E.I. Monthly No: EI8112103273 E.I. Yearly No: EI81078646

Title: REMOVAL OF RADIONUCLIDES FROM THE WATER-SOLUBLE FRACTION OF
HANFORD NUCLEAR DEFENSE WASTES.

Author: Strachan, Denis M.; Schulz, Wallace W.
Corporate Source: Battelle, Pac Northwest Lab, Richland, Wash
Source: Proc Symp Waste Manage Waste Manage '80, The State of Waste Disposal Technol, Mill Tailings, and Risk Anal Models, v 2, Tucson, Ariz, Mar 10-14 1980. Publ by Univ of Ariz, Coll of Eng, Tucson, 1980 p 551-567

Publication Year: 1980
CODEN: PSWMDY ISSN: 0275-6196
Language: ENGLISH

Journal Announcement: 8112

Abstract: The current Hanford Waste Management Program has operated since 1968 to remove the bulk of the long-lived heat emitters ^{90}Sr and ^{137}Cs from stored high-level wastes. The liquid waste remaining after removal of ^{90}Sr and ^{137}Cs is returned to underground tanks for eventual evaporation to damp solid salt cake. Approximately 95,000 m³ of salt cake and 49,000 m³ of "sludge" will eventually accumulate in approximately 50 underground single-shell tanks. One alternative for long-term management of high-level Hanford wastes involves retrieval, after a yet-to-be determined interim storage time, conversion to more immobile forms, and terminal storage in a suitable geologic repository. Another alternative for long-term management of salt cake and residual liquid involves removing most of the long-lived radionuclides and many of the shorter-lived ones from these wastes. This paper describes conditions and results of recent hot cell tests of the complete Hanford Radionuclide Removal Process. These advanced tests, made with actual residual liquid containing large concentrations of ethylenediaminetetraacetic acid (EDTA) and other organic compounds, provided a rigorous and convincing proof of the process flowsheet. 16 refs.

Record - 134

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>
01053095 E.I. Monthly No: EI8111091883 E.I. Yearly No: EI81048338

Title: DEVELOPMENT OF AN ION-EXCHANGE PROCESS FOR REMOVING CESIUM FROM HIGH-LEVEL RADIOACTIVE LIQUID WASTES.

Author: Baumgarten, P. K.; Wallace, R. M.; Whitehurst, D. A.; Steed, J. M.

Corporate Source: DuPont, Aiken, SC
Source: Scientific Basis for Nuclear Waste Management v 2, Proc of the Int Symp, Boston, Mass, Nov 27-30 1979. Publ by Plenum Press, New York, NY, 1980 p 875-884

Publication Year: 1979
CODEN: SBNMD5 ISSN: 0275-0112
Language: ENGLISH

Journal Announcement: 8111

Abstract: A process was developed to solidify and isolate the biologically hazardous radionuclides from approximately 20 million gallons of alkaline high level radioactive waste accumulated at the Savannah River Plant and being stored in large underground tanks. The waste consists mainly of liquid waste supernate, a damp sodium salt cake and a gelatinous, insoluble sludge. The process involves dissolving the salt cake in water, separating it from the sludge, washing the sludge and adding the washings to the dissolved salt cake. The aqueous portion is then treated by ion exchange to remove cesium-137, plutonium and other actinides and soluble strontium-90. 6 refs.

Record - 135

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01053080 E.I. Monthly No: EI8111091877 E.I. Yearly No: EI81048332

Title: SCIENTIFIC BASIS FOR NUCLEAR WASTE MANAGEMENT, VOLUME 2,
(PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM) 1979.

Author: Northrup, Clyde J. M. Jr. (Ed.)

Corporate Source: Sandia Lab, Albuquerque, NM

Source: Scientific Basis for Nuclear Waste Management v 2, Proc of the
Int Symp, Boston, Mass, Nov 27-30 1979. Publ by Plenum Press, New York, NY,
1980 936 p

Publication Year: 1979

CODEN: SBNMDS ISSN: 0275-0112

Language: ENGLISH

Journal Announcement: 8111

Abstract: Proceedings of the symposium include 110 papers that present
overviews of nuclear waste management and deal with waste forms of various
materials, waste isolation, modeling and safety assessment, and proceeding
of nuclear wastes. Sixteen papers are indexed separately.

Record - 136

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

01037772 E.I. Monthly No: EI8108070440 E.I. Yearly No: EI81101098

Title: REMOVAL OF RADIONUCLIDES FROM URANIUM ORES AND TAILINGS TO YIELD
ENVIRONMENTALLY ACCEPTABLE WASTE.

Author: Raicevic, D.

Corporate Source: Dep of Energy, Mines & Resour, Ottawa, Ont

Source: Int Conf on Uranium Mine Waste Disposal, 1st, Vancouver, BC, May
19-21 1980 Publ by Soc of Min Eng of the AIME, New York, NY, 1980 p 351-360

Publication Year: 1980

Language: ENGLISH

Journal Announcement: 8108

Abstract: This paper describes removal of sulfides and radionuclides from
the tailings by flotation and removal from ores by beneficiation methods,
then extraction of the radionuclides from the concentrates by leaching. 18
refs.

Record - 137

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

0102832 E.I. Monthly No: EI8106048840 E.I. Yearly No: EI81039740

Title: CONVENTIONAL BIOLOGICAL FILTERS AT ULTRA-HIGH LOADINGS AS MAIN
PROCESS STAGE FOR A STRONG MIXED WASTE.

Author: Blersch, H. C.

Corporate Source: Ninham Shand Inc, Cape Town, S Afr

Source: Progress in Water Technology v 12 n 3 1980, Treat of Domest and
Ind Wastewaters in Large Plants, Proc of a Workshop, Pt 1, Vienna, Austria,
Sep 3-7 1979 p 243-249

Publication Year: 1980

CODEN: PGWTA2 ISSN: 0306-6746

Language: ENGLISH

Journal Announcement: 8106

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Abstract: Very highly loaded two-stage stone media biological filters have been incorporated in a 35,000 m**3/d treatment plant for a strong mixed waste, originating largely from fruit canneries, as the most economical means of reducing the high incoming organic load. Design criteria were established by experimental operation of large existing units to correlate dissolved organic load removed with load applied up to extreme loadings. Removals exceeding 1,35 kg BOD/m**3 per day at loading of 5,0 and 2,10 kg BOD/m**3/d at loading 3,0 were established for the primary (coarse media) and secondary (fine) units respectively in two stage operating with an intervening humus tank. The " fine " media unit did not perform comparably as a primary unit. A two stage configuration was therefore adopted. Lagoons with variable mechanical aeration deal with the residual load which varies with seasonal industrial load from 10 to 25% of the incoming load.

Record - 138

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

00986036 E.I. Monthly No: EI8101009650 E.I. Yearly No: EI81102143

Title: ADSORPTION OF RADIONUCLIDES IN WASTE WATER ON OXINE-IMPREGNATED ACTIVATED CHARCOAL. ADSORPTION CHARACTERISTICS OF MANGANESE-54 ION.

Author: Motojima, Kenji; Tachikawa, Enzo; Kamiyama, Hideo

Corporate Source: Jpn At Energy Res Inst, Ibaraki

Source: Journal of Nuclear Science and Technology v 16 n 3 Mar 1979 p 200-206

Publication Year: 1979

CODEN: JNSTAX ISSN: 0022-3131

Language: ENGLISH

Journal Announcement: 8101

Abstract: Radio-cobalt and -manganese constitute more than 90% of the radionuclides in waste water released from various nuclear facilities. The adsorption characteristics of Mn ion on oxine-impregnated activated charcoal have been examined. In the adsorption, Mn ion will be in the chemical interaction with oxine on activated charcoal. Thus, the impregnation of oxine on activated charcoal considerably improves the adsorption properties of the latter, although the adsorption shows a strong pH-dependence. 11 refs.

Record - 139

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

00961130 E.I. Monthly No: EI8011086908 E.I. Yearly No: EI80091359

Title: ISOLATION OF URANIUM MILL TAILINGS AND THEIR COMPONENT RADIONUCLIDES FROM THE BIOSPHERE -- SOME EARTH SCIENCE PERSPECTIVES.

Author: Landa, Edward

Source: Geological Survey Circular (United States) n 814 1980 35 p

Publication Year: 1980

CODEN: XICIAS ISSN: 0083-1107

Language: ENGLISH

Journal Announcement: 8011

Abstract: Sources of potential human radiation exposure from uranium mill tailings include the emanation of radon gas, the transport of particles by wind and water, and the transport of soluble radionuclides, seeping from disposal areas, by ground water. Due to the 77,000 year half-life of

thorium-230, the parent of radium-226, the environmental effects associated with radionuclides contained in these tailings must be conceived of within the framework of geologic processes operating over geologic time. The magnitude of erosion of cover materials and tailings and the extent of geochemical mobilization of the contained radionuclides to the atmosphere and hydrosphere should be considered in the evaluation of the potential, long-term consequences of all proposed uranium mill tailings management plans. Refs.

Record - 140

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

00918732 E.I. Monthly No: EI8005041399 E.I. Yearly No: EI80091352

Title: REMOVAL OF RADIONUCLIDES FROM PROCESS STREAMS -- A REVIEW.

Author: Itzkovitch, I. J.; Ritcey, G. M.

Corporate Source: Ont Res Found

Source: CANMET Report (Canada Centre for Mineral and Energy Technology) n

79-21 Apr 1979 85 p

Publication Year: 1979

CODEN: CANRD7 ISSN: 0705-5196

Language: ENGLISH

Journal Announcement: 8005

Abstract: This report details the origin and control of radium 226, thorium 230 and lead 210 contamination of mill effluent streams from conventional and non-conventional milling of uranium ores, reviews the basic chemistry of the radionuclides as it relates to potential alternatives for control and presents these alternatives along with a summary of published cost data. The conclusions from the study indicate that the current technology, using sulfuric acid processing, solubilizes only a comparatively small quantity of the radionuclides, with the solid tailings containing approximately the same concentration as the original ore. Present technology does not provide for complete removal and isolation of the radionuclides. 122 refs.

Record - 141

<DIALOG File 8: (c) 1994 Engineering Info. Inc.>

00329986 E.I. Monthly No: EI7310051613 E.I. Yearly No: EI73058772

Title: PROCESS SELECTION FOR THE REMOVAL OF RADIONUCLIDES FROM LOW-LEVEL WASTES AT OAK RIDGE NATIONAL LABORATORY.

Author: Holmes, J. M.; Harrington, F. E.

Corporate Source: U S Atomic Energy Comm, Oak Ridge, Tenn

Source: AIChE Symp Ser v 69 n 129 1973 p 183-187

Publication Year: 1973

Language: ENGLISH

Journal Announcement: 7310

Abstract: Two processes developed at Oak Ridge National Laboratory for removal of small quantities of Sr-90 and Cs-137 from slightly contaminated aqueous wastes are evaluated. The SP-IX Process utilizes a precipitation step for bulk removal of hardness and an ion-exchange step for removal of radioactivity. In the C-IX Process, an ion-exchange column performs both tasks but a clarification step is required for colloid removal. Process choice and economics depend upon the method to be used for final disposal of the radioactive residues from the processes. 4 refs.

Record - 142

<DIALOG File 40: (c) 1994 CIS, Inc.>
00254442 ENVIROLINE NUMBER: 93-12906
Mixed Wastes Treatment by Reverse-Burn Gasification
McGowin, Audrey E., Univ of Missouri, Columbia; Cady, J. Christopher;
Manahan, Stanley E.; Larsen, David W.
JOURNAL: Chemosphere v27, n5, p779(16)
PUBLICATION DATE: 1993
DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: Reverse-burn gasification, which involves both gasification and combustion, offers an effective treatment of solid wastes with minimal emissions. Results are presented from an investigation into the use of triple-reverse-burned coal char and reverse-burn gasification to treat waste streams composed of both hazardous organic matter and radionuclides. Data are presented on the requirements for contacting char and resin, the retention of metals by the process, the recyclability of the gasified residue, and the residue:cement-mass ratio needed to form a stable final disposal product. Results indicated that the ChemChar process effectively produced an inert, dry, leach-resistant material in which the radionuclides were immobilized. The gasified residue could be effectively recycled prior to being immobilized in cement.

Record - 143

<DIALOG File 40: (c) 1994 CIS, Inc.>
00253288 ENVIROLINE NUMBER: 93-11741
Separation Processes for High-Level Radioactive Waste Treatment
Sutherland, Donald G., Westinghouse Hanford Co, Richland, WA
JOURNAL: Minerals, Metals & Materials Soc/et al Emerging Separation
Technologies for Metals & Fuels Symp, Florida p333(19)
PUBLICATION DATE: Mar 13-18 93
DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: Separation processes proposed for processing high-level radioactive waste are discussed. Typical technology requirements, such as those used at the Hanford, WA, waste disposal site, are reviewed. A plan to split waste into high-level level and low-level fractions and remove radionuclides and large volume chemical contaminants is outlined. Alternative separation processes considered include removal of transuranic elements, organics, technetium, heavy metals, and other components. Cleaning the waste to background radiation levels is considered. The costs and benefits of each process are noted. (Full text available from Congressional Information Service.)

Record - 144

<DIALOG File 40: (c) 1994 CIS, Inc.>
00253193 ENVIROLINE NUMBER: 93-11646
Biosorption of Uranium, Thorium and Radium
Torma, Arpad E.; Apel, M. L., EG&G Idaho, Idaho Falls
JOURNAL: Minerals, Metals & Materials Soc/et al Emerging Separation
Technologies for Metals & Fuels Symp, Florida p221(14)

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PUBLICATION DATE: Mar 13-18 93
DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: A brief history of uranium ore processing, radium extraction, and thorium production is given. Concern about radiation from mill tailings prompted the development of NRC and EPA regulations to minimize exposure to radiation from tailings. Literature on biosorption methods for recovering radionuclides from industrial wastes is reviewed. The kinetics of uranium uptake by sodium alginate beads is applied to a uranium mill tailing effluent. In this case the bioabsorption process is diffusion controlled. The diffusion coefficient is not constant, but increases as a function of bead concentration. (Full text available from Congressional Information Service.)

Record - 145

<DIALOG File 40: (c) 1994 CIS, Inc.>
00248252 ENVIROLINE NUMBER: 93-06705
Remediation of Buried Mixed Waste at the Idaho National Engineering Laboratory (INEL)
Daum, Keith A., (EG&G Idaho, Idaho Falls); Hula, Greg A., (DOE Idaho, Idaho Falls)
JOURNAL: Natl Assoc of Environ Professionals 19th Annual Conf Proc, Raleigh, NC p851(15)
PUBLICATION DATE: May 24-26 93
DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: The Radioactive Waste Manag Complex (RWMC) of the Idaho Natl Engineering Lab (INEL) was created to handle the solid radioactive wastes resulting from DOE operations. Remediation of the RWMC site is controlled by the INEL Buried Waste Program. This program is responsible for the 20 x 106ft³ of contaminated soil at the facility. Remediation efforts must cope with both radionuclides and organics in the contaminated soils and surrounding areas. Technologies being used in the remediation efforts are described, including both invasive and noninvasive strategies. (Full text available from Congressional Information Service.)

Record - 146

<DIALOG File 40: (c) 1994 CIS, Inc.>
00247263 ENVIROLINE NUMBER: 93-05716
Long-Term Durability of Polyethylene for Encapsulation of Low-Level Radioactive, Hazardous, and Mixed Wastes
Kalb, P. D., BNL, Upton, NY; Heiser, J. H.; Colombo, P.
JOURNAL: ACS Symp 518: Emerging Technologies in Hazardous Waste Manag III, Atlanta, GA p439(11)
PUBLICATION DATE: Oct 1-3 91
DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: A polyethylene encapsulation process was developed for treatment of low-level radioactive, hazardous, and mixed wastes. The thermoplastic polymer is heated above its melting point, combined with waste to give a homogeneous mixture, and allowed to cool, forming a monolithic solid waste form. The waste form was evaluated for compressive strength, resistance to

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saturated conditions and thermal cycling, biodegradability, leachability, inflammability, and resistance to chemical attack and ionizing radiation. These failure mechanisms should have little or no effect on the durability of the polyethylene-encapsulated waste.

Record - 147

<DIALOG File 40: (c) 1994 CIS, Inc.>

00246135 ENVIROLINE NUMBER: 93-04588

Reverse-Burn Gasification for Treatment of Hazardous Wastes: Contaminated Soil, Mixed Wastes, and Spent Activated Carbon Regeneration

Kinner, Laur L, Entropy Environmentalists Inc, Research Triangle Park, NC;

McGowin, Audrey; Manahan, Stanley E.; Larsen, David W.

JOURNAL: Environ Sci Technol v27, n3, p482(7)

PUBLICATION DATE: Mar 93

DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: The ChemChar Process, or reverse-burn gasification, for the treatment of hazardous waste converts the organic constituents of the waste to a combustible gas and to a dry, inert, carbonaceous solid. Results are presented from experiments designed to determine the efficiency of reverse-burn gasification applied to the treatment of PCB-contaminated soils, the destruction of mixed wastes, and the regeneration of activated carbon. PCBs were destroyed up to 99.9999% without undesirable byproducts or the production of too much hydrogen chloride. The organic constituents of mixed wastes containing both organic substances and radioactive materials were destroyed with complete retention of radionuclides. The process was also able to regenerate spent activated C without unacceptable loss of mass, sorptive capacity, or physical integrity.

Record - 148

<DIALOG File 40: (c) 1994 CIS, Inc.>

00245910 ENVIROLINE NUMBER: 93-04363

Biodegradation of Synthetic Chelates in Subsurface Sediments from the Southeast Coastal Plain

Bolton, Jr. H., Battelle, Pacific Northwest Lab, Richland, WA; Li, S. W.; Workman, D. J.; Girvin, D. C.

JOURNAL: J Environ Qual v22, n1, p125(8)

PUBLICATION DATE: Jan-Mar 93

DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: Synthetic chelates, including EDTA, diethylenetriaminepentaacetic acid (DTPA), and nitrilotriacetic acid (NTA), have often been used for nuclear reactor decontamination and nuclear waste processing. Codisposal of radionuclides and synthetic chelating agents has increased subsurface radionuclide transport. The potential for microbial degradation of synthetic chelates was explored for sediment samples from Allendale, SC, near the DOE Savannah River Site. Different microbial populations were responsible for the degradation of each chelate; the relative order of persistence was EDTA, DTPA, and NTA. Chelate mineralization was not any faster or more effective in the surface than in the subsurface environment. (Full text available from Congressional Information Service.)

Record - 149

<DIALOG File 40: (c) 1994 CIS, Inc.>

00237861 ENVIROLINE NUMBER: 92-11905

Colloid Formation During Waste Form Reaction: Implications for Nuclear Waste Disposal

Bates, J. K., ANL, Argonne, IL; Bradley, J. P.; Teetsov, A.; Bradley, C. R.
; ten Brink, M. Buchholtz

JOURNAL: Science v256, n5057, p649(3)

PUBLICATION DATE: May 1 92

DOCUMENT TYPE: journal article LANGUAGE: English

ABSTRACT: Limitations are demonstrated to the assumptions that solubility controls the release of plutonium and americium actinides to the environment. In a test simulating the weathering of high-level nuclear waste glass, it was found that insoluble colloidal particles of these elements were formed, and were present in test ground water. The results of this test indicate that present models assuming complete solubility of these actinides in groundwater are erroneous. This finding raises the fear that the potential release of radionuclides into the environment has been underestimated. An engineered barrier system is suggested to inhibit colloid transfer and to trap these colloids.

Record - 150

<DIALOG File 40: (c) 1994 CIS, Inc.>

00237836 ENVIROLINE NUMBER: 92-11880

Microbially Based Treatment Process Removes Toxic Metals, Radionuclides

Haggin, Joseph

JOURNAL: Chem Eng News v70, n30, p35(2)

PUBLICATION DATE: Jul 27 92

DOCUMENT TYPE: news article LANGUAGE: English

ABSTRACT: Researchers at BNL have demonstrated a process for removing metals and radionuclides from solid wastes and contaminated soil. Citric acid is added to the contaminated substance, and forms a complex with the metal or radionuclide. The complex can then be degraded by anaerobic bacteria, or by exposure to light. The metal or radionuclide can be recovered for recycling, and the decontaminated soil can be returned to use. The process is of particular importance in decontaminating coal wastes and is capable of removing zinc, cadmium, nickel, and lead. Treatable radionuclides include those of cobalt, uranium, strontium and thorium.

Record - 151

<DIALOG File 40: (c) 1994 CIS, Inc.>

00237616 ENVIROLINE NUMBER: 92-08262

Metal Toxicity Effects the Biological Treatment of Aqueous Metal Wastes: Is a Biocatalytic System Feasible for the Treatment of Wastes Containing Actinides?

Tolley, M. R., Univ of Oxford, UK; Smyth, P.; Macaskie, L. E.

JOURNAL: J Environ Sci Health-Environ Sci Eng vA27, n2, p515(18)

PUBLICATION DATE: Feb 92

DOCUMENT TYPE: research article LANGUAGE: English

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ABSTRACT: Wastes from production of nuclear fuel include actinides that have both radiological and chemical toxicity. The bacterium *+i Citrobacter +r* sp., which produces extra phosphatase in the presence of a source of phosphate, can precipitate heavy metals. Actinides in oxidation states III, IV, and VI were incubated with the bacteria and phosphate source. Oxydations of uranium and vanadium, inhibited phosphatase activity at low concentrations. Actinides in oxidation state III (lanthanum and yttrium) were less able to inhibit phosphatase activity, even at higher concentrations. Resuspended cells demonstrated the ability to take up large quantities of the oxydation of uranium and La(III). Polyacrylamide gel columns containing immobilized *+i Citrobacter +r* cells were able to remove uranyl and lanthanum in the presence of a citrate buffer and PO₃ source. The insolubility of actinides in the IV oxidation state would require oxidation to the VI oxidation state for processing. (Full text available from Congressional Information Service.)

Record - 152

<IALOG File 40: (c) 1994 CIS, Inc.>

00235479 ENVIROLINE NUMBER: 92-11751

Properties of a Radioactive Waste Pellet Package Using Cement-Glass

Funabashi, Kiyomi, Hitachi Ltd, Ibaraki, Japan; Chino, Koichi; Kikuchi,

Makoto; Horiuchi, Susumu; Tsuchiya, Hiroyuki

JOURNAL: Nucl Technol v96, p185(7)

PUBLICATION DATE: Nov 91

DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: Leaching studies were conducted on radioactive-waste pellets that had been dropped in a polymer-impregnated concrete (PIC) barrier and then solidified with cement-glass. The PIC barrier was found to be about three times stronger than an ordinary Portland cement (OPC) barrier, and the PIC porosity was less than one-tenth that of OPC. The leaching ratio of technetium-99 was found to be the largest of the radionuclides evaluated in the PIC barrier, because of its low absorption by the cement-glass.

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<IALOG File 40: (c) 1994 CIS, Inc.>

00235411 ENVIROLINE NUMBER: 92-09262

Safeguards Against the Escape of Radionuclides into the Environment from Nuclear Power Installations

Gray, J. L., South of Scotland Electricity Board, Glasgow, UK

JOURNAL: Inst of Civil Engineers Nuclear Contamination of Water Resources Conf, Glasgow, Scotland, UK (Telford) p13(13)

PUBLICATION DATE: Sep 7-8 89

DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: Although small amounts of radioactivity may be released to the environment during routine operation of nuclear power stations, unacceptably large releases often accompany reactor accidents, nuclear fuel transport, waste-disposal activities, and nuclear fuel processing plant operation. The regulatory framework and technical practices adopted in the UK to guard against such releases are detailed. Applicable safeguards are

based on the principle that radioactive discharges should be as low as reasonably achievable. Standards and policies governing reactor safety, pollution control, radioactive-waste disposal, and nuclear power plant decommissioning are discussed.

Record - 154

<DIALOG File 40: (c) 1994 CIS, Inc.>

00235345 ENVIROLINE NUMBER: 92-04530

Applicable or Relevant and Appropriate Requirements (ARAR) for Radioactive Mixed Waste

Keller, J. F.; Woodruff, M. G., Battelle, Pacific Northwest Labs, Richland, WA

JOURNAL: DOE/Battelle Env Monitoring Restoration & Assessment: What Have We Learned? 28th Hanford Symp, Richland, WA p91(9)

PUBLICATION DATE: Oct 16-19 89

DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: No single federal regulation specifically addresses all aspects of radioactive mixed-waste management and cleanup. The environmental pollution control and radioactive waste management statutes and regulations that might contain applicable or relevant and appropriate requirements as defined under CERCLA are reviewed. These requirements address four exposure pathways: air, groundwater, surface water, and soil. A framework is introduced for integrating the chemical and radioactive waste management requirements for these pathways. Mixed-waste management scenarios illustrate framework application to waste management or cleanup decision making.

Record - 155

<DIALOG File 40: (c) 1994 CIS, Inc.>

00235205 ENVIROLINE NUMBER: 92-00676

Radioactivity in Water Treatment Wastes: a USEPA Perspective

Parrotta, Marc J., EPA, Washington, DC

JOURNAL: J Am Water Works Assoc v83, n4, p134(7)

PUBLICATION DATE: Apr 91

DOCUMENT TYPE: journal article LANGUAGE: English

ABSTRACT: Information is presented regarding naturally occurring radionuclides in drinking water treatment processes. These radionuclides include uranium, radium-226, and radon, singly or in combination. Effective treatment technologies for the removal of radionuclides include coagulation-filtration, lime softening, anion and cation exchange, mixed-bed ion exchange, reverse osmosis, and aeration. EPA has developed guidelines to assist state agencies, water utilities, and professionals in the water industry to effectively design treatment and disposal operations to safeguard occupational health. On the basis of a review of these guidelines, recommendations are proposed for the disposal of water treatment wastes. (Full text available from Congressional Information Service.)

Record - 156

<DIALOG File 40: (c) 1994 CIS, Inc.>

00225785 ENVIROLINE NUMBER: 91-03496

Biosorption

Gadd, Geoffrey Michael, Univ of Dundee, Scotland

JOURNAL: Chemistry & Industry-UK n13, p421(6)

PUBLICATION DATE: Jul 2 90

DOCUMENT TYPE: journal article LANGUAGE: English

ABSTRACT: Biosorption the removal of metal or metalloid species, compounds, and particulates from solution by biological materials is of current industrial interest because of its potential applications in the removal of toxic heavy metals and radionuclides from liquid wastes. The walls of bacteria, algae, and fungi are efficient metal biosorbents, and in many cases initial binding may be followed by inorganic deposition of increased amounts of metal, even up to 50% of the dry weight. Various biosorption techniques are described, including: living cell systems, immobilized cell systems, growth-decoupled enzymic metal removal, metal removal by derived products, and metal transformations. Many aspects of metal-microbe interactions have remained unexploited, with little advantage taken of the significant progress made in recent years in molecular biology and genetics.

Record - 157

<DIALOG File 40: (c) 1994 CIS, Inc.>

00225185 ENVIROLINE NUMBER: 91-07281

The Reuse of Spent Bleaching Earth for the Stabilisation/Solidification of Mixed Waste Streams

Pollard, S. J. T., Imperial College, London, UK; Sollars, C. J.; Perry, R.

JOURNAL: Env Technology v11, n12, p1113(10)

PUBLICATION DATE: Dec 90

DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: The pyrolysis of spent bleaching earth, a solid waste clay from the edible-oil industry, can be used as an economical adsorbent for the stabilization and solidification of mixed-waste streams. A study is described, in which the performance of the spent bleaching earth is compared to that of powdered activated carbon in cement/waste/adsorbent blends. Results indicate that spent bleaching earth is effective for removing organic contaminants from mixed waste streams before fixating it with Portland cement. Because of an increased bulk density over that of commercial activated carbon, spent bleaching earth is expected to show additional handling benefits and notable cost advantages over other commercial adsorbents. (Full text available from Congressional Information Service.)

Record - 158

<DIALOG File 40: (c) 1994 CIS, Inc.>

00225145 ENVIROLINE NUMBER: 91-06334

Determination of Heavy Metals and Radioactive Elements in Purifier Sludge Blanco, P., Univ of the Balearic Islands, Palma de Mallorca, Spain; Oms, M.

T.; Estela, J. M.; Cerdá, V.; Casas, M.; Manas, J.; Pons, J.

JOURNAL: J Env Science & Health-Env Science & Engineering vA25, n7,

p855(14)

PUBLICATION DATE: 1990

DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: Sludge, generated in a facility treating industrial effluents and domestic wastes in Palma de Mallorca, Spain, was analyzed for heavy metal and radiochemical element contents. None of the metals, identified in the sludges, were present at concentrations above the maximum limits issued by the EEC. On the basis of this finding, the sludges are deemed suitable for use as fertilizer material. A very low radiochemical content was also documented, suggesting that these sludges pose very few environmental hazards. (Full text available from Congressional Information Service.)

Record - 159

<DIALOG File 40: (c) 1994 CIS, Inc.>

00223544 ENVIROLINE NUMBER: 91-06062

Biosorption of Radionuclides by Fungal Biomass

White, Christopher; Gadd, Geoffrey M., Univ of Dundee, Scotland, UK

JOURNAL: J Chemical Technology & Biotechnology v49, p331(13)

PUBLICATION DATE: 1990

DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: The use of filamentous fungal biomass in several designs of column bioreactor as a biosorbent for thorium in acidic solution was examined. Four patterns of bioreactor were evaluated: two packed-bed reactors, one using upward and the other downward flow; a bed agitated by stirring; and a reactor in which an internal secondary circulation was supplied by air lift. Several factors were found to affect the performance of the biosorbents. The column design was the most significant variable; a poor performance was obtained from static beds or those stirred at one point in the column. In the air-lift reactor, the most significant variable was the biological nature of the biomass used. The form of the biosorbent was an important consideration when microbial material was used in a metal-removal process.

Record - 160

<DIALOG File 40: (c) 1994 CIS, Inc.>

00223543 ENVIROLINE NUMBER: 91-06061

Review of Biotechnology Applications to Nuclear Waste Treatment

Ashley, Nicholas V.; Roach, Daniel J. W., PA Consulting Group, Royston, UK

JOURNAL: J Chemical Technology & Biotechnology v49, p381(14)

PUBLICATION DATE: 1990

DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: There is growing interest in the feasibility of biological treatment of nuclear wastes, because of the ability of microorganisms to accumulate heavy metals and radionuclides. An overview is presented of the use of biopolymers, biosorption, and biomagnetic separation processes. A promising technique is the use of immobilized monoclonal antibodies coupled with a selective microbial radionuclide adsorption to achieve similar separations without reliance on magnetic field-generating hardware.

Record - 161

<DIALOG File 40: (c) 1994 CIS, Inc.>
00223416 ENVIROLINE NUMBER: 91-03912
Control of Radium in Phosphate Mining, Beneficiation and Chemical
Processing
Roessler, C. E., Univ of Florida, Gainesville
JOURNAL: IAEA Env Behaviour of Radium Technical Report Series 310 v2,
p269(11)
PUBLICATION DATE: 1990
DOCUMENT TYPE: assn report LANGUAGE: English

ABSTRACT: Phosphate mineral extraction and processing, associated waste
management, and product and by-product use can be sources of environmental
radium. Radionuclide pathways to the environment via the phosphate industry
are discussed by focusing on five production segments: mining and
beneficiation, phosphate rock drying and dry rock handling, wet process
phosphoric acid production, production of phosphate products, and elemental
phosphorus production by the thermal process. (Full text available from
Congressional Information Service.)

Record - 162

<DIALOG File 40: (c) 1994 CIS, Inc.>
00219204 ENVIROLINE NUMBER: 91-07608
Air Emissions Control for a Radioactive Medical Waste Incinerator
Griffin, Roger D., Converse Consultants OC, Irvine, CA
JOURNAL: Intl Soc for Env Protection Envirotech Vienna 1990 Sym, Austria
p732(9)
PUBLICATION DATE: Oct 23-25 90
DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: Hazardous medical wastes containing radionuclides require special
disposal methods sensitive to environmental and human health consequences.
Incineration offers the advantages of volume reduction of high as 20:1,
less risk from solid residuals, and lower transportation costs for these
residuals. Emissions control can be achieved through a two-chamber fixed
hearth using over- and under-fire air control, steam injection, a
packed-bed absorber, a water quench, sophisticated filters, and activated
carbon beds.

Record - 163

<DIALOG File 40: (c) 1994 CIS, Inc.>
00216975 ENVIROLINE NUMBER: 90-06606
Unmixing Mixed Waste
Williams, M. J.; Redmon, M. E., Bechtel Natl Inc, Oak Ridge, TN
JOURNAL: Civil Engineering-ASCE v60, n4, p46(3)
PUBLICATION DATE: Apr 90
DOCUMENT TYPE: journal article LANGUAGE: English

ABSTRACT: There are currently no disposal sites or treatment plants for
mixed waste, and its storage is illegal. Mixed waste constitutes a
hazardous and radioactive waste combination. Remediation at the Chicago,

IL, Natl Guard Armory, a mixed waste site, is detailed. The remediation has entailed an on-site thermal-treatment process designed to separate waste, preparing it for legal disposal. The process was done in two phases: in phase 1, the sludge was heated to a maximum temperature of 180F to drive off the volatiles and eliminate the ignitability hazard; and in phase 2, the sludge was heated at maximum rates to further reduce the concentration of volatiles and to reduce moisture content. The treatment process has proven safe, but caution is recommended in using exposed-element heaters for treating waste which contains very high concentrations of volatiles. (Full text available from Congressional Information Service.)

Record - 164

<DIALOG File 40: (c) 1994 CIS, Inc.>
00216786 ENVIROLINE NUMBER: 90-04286
Composting Mixed Waste?
Cofield, Gwen
JOURNAL: Waste Age p84(3)
PUBLICATION DATE: Jan 90
DOCUMENT TYPE: journal article LANGUAGE: English

ABSTRACT: Agripost, Inc (FL) has developed a composting facility in which municipal waste is converted to a nutrient soil conditioner. Up to 80% of the waste stream is organic material, which undergoes accelerated decomposition. The rest is ground and screened to produce a soil conditioner. The plant is integral to Dade County's waste management plan, and consistent with Florida's new laws requiring waste reductions of 30% in the next four years. The company is marketing up to 175,000 tpy of product to farmers, golf courses, and other businesses. (Full text available from Congressional Information Service.)

Record - 165

<DIALOG File 40: (c) 1994 CIS, Inc.>
00215102 ENVIROLINE NUMBER: 90-01415
Innovative Technologies for Treatment of Hazardous and Mixed Wastes
Anderson, T. D., (DOE, Washington, DC); Eyman, L. D., (Martin Marietta
Energy Systems, Oak Ridge, TN)
JOURNAL: IAEA Management of Low and Intermediate Level Radioactive Wastes
Sym, Stockholm, Sweden v1, p405(11)
PUBLICATION DATE: May 16-20 88
DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: The DOE has embarked on a program to minimize its production of hazardous wastes, including mixed hazardous and radioactive wastes. The agency is seeking to develop innovative ways of improving treatment technologies to eliminate the hazardous components of wastes. Seven technologies under development are described: supercritical water oxidation of hazardous chemicals, microwave-assisted destruction of chlorinated hydrocarbons, paramagnetic separation of metals from wastes, detoxification and reclamation of waste acids, nitrate destruction by calcination, treatment/disposal of reactive metals, and methodologies for encapsulation.

Record - 166

174

<DIALOG File 40: (c) 1994 CIS, Inc.>

00215101 ENVIROLINE NUMBER: 90-01414

Management of Mixed Wastes in the Federal Republic of Germany

Merz, E. R., Julich Nuclear Research Ctr, FRG; Halaszovich, S.; Laser, M.;

Wacks, M. E.

JOURNAL: IAEA Management of Low and Intermediate Level Radioactive Wastes

Sym, Stockholm, Sweden v1, p393(12)

PUBLICATION DATE: May 16-20 88

DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: In West Germany, radioactive wastes must be disposed of in geological underground repositories, while hazardous wastes are mostly disposed of by shallow land burial. There are no federal regulations to deal yet with wastes containing a mixture of the two. It is technically feasible to treat mixed wastes using mineralization, volume reduction, and immobilization. Advantages can be taken of mixing mineralized filter dust, arising from the combustion of hazardous chemical wastes, with low and medium radioactive wastes, by using the dust as a solidifying reagent. Then the underground deposition of the final mixed waste product is feasible without any drawbacks. This process is described.

Record - 167

<DIALOG File 40: (c) 1994 CIS, Inc.>

00215100 ENVIROLINE NUMBER: 90-01413

Overview of Mixed Waste Issues at the Defence Installations of the United States Department of Energy

Mezga, L. J.; Eisenhower, B. M., Martin Marietta Energy Systems, Oak Ridge, TN

JOURNAL: IAEA Management of Low and Intermediate Level Radioactive Wastes

Sym, Stockholm, Sweden v1, p379(13)

PUBLICATION DATE: May 16-20 88

DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: Solid mixed wastes are low-level radioactive wastes that are also declared hazardous due to their chemical characteristics. Owing to the "double hazard" associated with these wastes, their management has been somewhat limited. An overview of the mixed waste program at the DOE is described. The unavailability of treatment has forced the DOE installations to place these materials in storage. Limited storage capacity has led to an increased emphasis on the need to develop treatment/disposal technologies. Four processes are emphasized: rendering these wastes non-hazardous by destroying the hazardous constituent, separating the hazardous from the radioactive constituent, treating the wastes and placing them in a form that will meet EPA standards for their classification as non-hazardous, and providing facilities for the disposal of wastes which cannot be changed into a non-hazardous form.

Record - 168

<DIALOG File 40: (c) 1994 CIS, Inc.>

00215061 ENVIROLINE NUMBER: 90-01374

Organic Diagenesis in Commercial, Low-Level Nuclear Wastes

175

Toste, A. P.; Lechner-Fish, T. J., Southwest Missouri State Univ,
Springfield
JOURNAL: Radioactive Waste Management & the Nuclear Fuel Cycle v12, n1-4,
p291(11)
PUBLICATION DATE: 1989
DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: The presence of certain organics in nuclear wastes may complicate waste management efforts. Three commercial low-level wastes were analyzed for their organic content. They contained numerous classes of hydrophobic and hydrophilic organics at nanomolar to micromolar concentrations: alkyl phenols, phosphate esters, phthalate esters, and chelating and complexing agents. All of these organics were source-term compounds associated with nuclear operations. The wastes also contained numerous classes of compounds thought to be derived from diagenesis, or degradation, of the source-term organics. The presence of these degradation products indicates that organic diagenesis in nuclear wastes can be widespread and vigorous. Data are tabulated.

Record - 169

<DIALOG File 40: (c) 1994 CIS, Inc.>
00206429 ENVIROLINE NUMBER: 89-03363
History of Metal Pollution in the Southern California Bight: an Update
Finney, Bruce P.; Huh, Chih-An
JOURNAL: Env Science & Technology v23, n3, p294(10)
PUBLICATION DATE: Mar 89
DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: Sediment cores collected in 1985 and 1986 along the California continental Borderland offshore of Los Angeles (Santa Monica Basin) were analyzed for organic carbon, calcium carbonate, uranium radionuclides, and a number of other major and minor elements. Deep-basin cores show subsurface maxima in lead, zinc, chromium, and organic carbon for the time interval 1960-70. Decreases in heavy-metal accumulation nearer the surface reflect subsequent improvements in wastewater treatment. The yellow-brown surface layer in deep-basin cores is enriched in iron, cobalt, copper, and phosphorus. Reduction of Fe followed by upward diffusion and precipitation as amorphous oxyhydroxides produces this layer. Downcore profiles of P, Cu, and Co are influenced by this process. (Full text available from Congressional Information Service.)

Record - 170

<DIALOG File 40: (c) 1994 CIS, Inc.>
00142055 ENVIROLINE NUMBER: 87-38298
Removal of Trace Radionuclides and Chemical Contaminants from Waste
Evaporator Condensates by Electrodialysis
Del, Debbio J.A.
JOURNAL: DOE Idaho Natl Engineering Lab Report Winco-1045 (55)
PUBLICATION DATE: Sep 86
DOCUMENT TYPE: fed govt report LANGUAGE: English

ABSTRACT: Electrodialysis was tested for removing radioactive and chemical

contaminants from process equipment waste evaporator condensates generated at the Idaho Chemical Processing Plant, ID. Decontamination efficiencies (DE) for nine radionuclides and six chemical contaminants were determined with a one-hundredth scale vendor-built Pilot Plant. Excluding plutonium, which behaved erratically, the average radionuclide DE was 96%. Nitric acid removal averaged 98%, while the average DE for mercury was 63%. Radionuclide removal was due, to a large extent, to sorption on the membranes. Over 70% of the input radioactivity for 11 runs became sorbed on the membranes. (Full text available from Congressional Information Service.)

Record - 171

<DIALOG File 40: (c) 1994 CIS, Inc.>

00136263 ENVIROLINE NUMBER: 86-61186

Behavior of Neptunium in Chemical Process of Partitioning Long-Lived Radionuclides from High-Level Waste

Morita, Yasuji, Japan Atomic Energy Research Inst, Japan; Kubota, Masumitu

JOURNAL: J Nuclear Science & Technology-Japan v22, n8, p658(7)

PUBLICATION DATE: Aug 85

DOCUMENT TYPE: research article LANGUAGE: English

ABSTRACT: A partitioning process was applied to the removal of long-lived radionuclides from high-level radioactive waste. The behavior of neptunium in the process was studied. In the first step, tributyl phosphate was not able to extract 86% of the Np; most of the Np was pentavalent in feed solution. In the next step, more than 90% of Np was extracted with diisodecyl phosphoric acid. Npp extracted from the pentavalent state was hardly stripped with nitric acid, indicating that such extraction is an irreversible process. (Full text available from Congressional Information Service.)

Record - 172

<DIALOG File 40: (c) 1994 CIS, Inc.>

00130657 ENVIROLINE NUMBER: 85-23519

Recovery and Storage Policy Decisions for Airborne Radionuclides

Brown, R.A., Exxon Nuclear Idaho Co, ID; Christian, J.D.; Croff, A.G.;

Thomas, T.R.; Jubin, R.T.

JOURNAL: IAEA Radioactive Waste Management Intl Conf, Seattle v2, p421(19)

PUBLICATION DATE: May 16-20 83

DOCUMENT TYPE: conf paper LANGUAGE: English

ABSTRACT: Airborne krypton 85, iodine 129, tritium, and carbon 14 are released in significant amounts from nuclear fuel reprocessing. Recovery requirements for each radionuclide must be based on potential benefits and costs. Evaluation of the benefit in terms of dose commitment reduction is sensitive to both the assumption used to calculate dose commitments and the many bases of comparison of commitments to other doses or health effects. Potential annual dose commitment reductions are computed for these radionuclides released from a 400 Gw nuclear economy. When dose commitment reductions are combined with potential waste management costs and other factors, recovery and storage of I 129 and C 14 from reprocessing plants appears to be justified. (7 references, 4 tables,) (Full text available

from Congressional Information Service.)

Record - 173

<DIALOG File 40: (c) 1994 CIS, Inc.>

00108345 ENVIROLINE NUMBER: 82-01123

Development of Solid Radionuclide Waste Forms in the United States

Crandall, J.L., E.I. Du Pont DE Nemours & Co, SC

JOURNAL: Presented at Materials Research Soc Scientific Basis for Nuclear

Waste Mgmt Intl Sym, Boston (20)

PUBLICATION DATE: Nov 27-30 79

DOCUMENT TYPE: special report LANGUAGE: English

ABSTRACT: Various types of radioactive waste forms developed in the U.S. are examined. These include encapsulated, in-place solidification, glass, ceramic, mineral, matrix, and gaseous waste forms. Waste form requirement and selection considerations are also addressed. The advantages and disadvantages of each type are included. (Full text available from Congressional Information Service.)

Record - 174

<DIALOG File 40: (c) 1994 CIS, Inc.>

00103482 ENVIROLINE NUMBER: 81-03243

Design of a PWR Gaseous Radwaste Treatment System Ensuring Safe Control of Gaseous Radionuclides Released Under Normal and Severe Conditions

Gilbert, R.G., Belgonucleaire, Brussels; Nuyt, G.R.; Fission, P.; Collard, G.E.R.

JOURNAL: Presented at Iaea/Oecd Management of Gaseous Wastes from Nuclear Facilities Sym vienna, p545(12)

PUBLICATION DATE: Feb 18-22 80

DOCUMENT TYPE: technical report LANGUAGE: English

ABSTRACT: The conceptual design of a gaseous radwaste treatment system adapted to a PWR design is proposed. The system is based on the use of a delay line consisting of pressurized storage tanks and charcoal beds, a hydrogen recombiner, and particulate filters. This treatment system was evaluated under normal and severe operating conditions. Under normal conditions the system offers good operating flexibility and safety characteristics. It could be used with the ventilation system to retain short-lived radonuclides under severe conditions. (Full text available from Congressional Information Service.)

Record - 175

<DIALOG File 40: (c) 1994 CIS, Inc.>

00103468 ENVIROLINE NUMBER: 81-03229

Removal of Nitrogen Oxides, Volatile Radionuclides and Aerosols Formed in Laboratory-Scale Denitration, Calcination and Solidification of Simulated High-Level Wastes

Kepak, F., Nuclear Research Inst, Czechoslovakia; Pecak, V.; Uher, E.; Kanka, J.; Koutova, S.; Matous, V.

JOURNAL: Presented at Iaea/Oecd Management of Gaseous Wastes from Nuclear Facilities Sym vienna, p101(11)

PUBLICATION DATE: Feb 18-22 80
DOCUMENT TYPE: technical report LANGUAGE: English

ABSTRACT: A procedure for purifying gaseous effluents formed in the denitrification, calcination, and solidification of simulated high-level radioactive wastes was proposed and tested, using a laboratory-scale apparatus. The purification procedure consisted of absorption and decomposition of nitrogen oxides, sorption of rubidium-106 and cesium-137 vapor, and filtration of rubidium-106, cesium-137, and strontium-85 aerosols. Air filtration equipment was made of glass and organic polymer fibers. Radionuclides were successfully removed from waste streams by this procedure and apparatus. (Full text available from Congressional Information Service.)

Record - 176

<IALOG File 40: (c) 1994 CIS, Inc.>
00102819 ENVIROLINE NUMBER: 81-02578
Concentrations of Radionuclides in Lake Ontario Water from Measurements on Water Treatment Plant Sludges
Durham, R.W., Canada Centre for Inland Waters, Ontario; Joshi, S.R.
JOURNAL: Water Research v15, n1, p83(4)
PUBLICATION DATE: 1981
DOCUMENT TYPE: research report LANGUAGE: English

ABSTRACT: The accuracy of using Y-spectral measurements of Water Treatment Plant sludges to determine the concentrations of Y-emitting radionuclides in raw water is assessed by comparison with direct analyses of raw lake water. The concentrations of cesium-137 and radium-226 derived from high-resolution Y-spectrometric measurements on aluminum hydroxide sludge samples averaged 0.036 pci/l and 0.047 pci/l, respectively, compared with the direct measurement of 0.023 pci/l and 0.03 pci/l. (Full text available from Congressional Information Service.)

Record - 177

<IALOG File 40: (c) 1994 CIS, Inc.>
00067632 ENVIROLINE NUMBER: 79-05230
Adsorption of Radionuclides in Waste Water on Oxine-Impregnated Activated Charcoal
Motojima, Kenji, Japan Atomic Energy Research Inst; Tachikawa, Enzo;
Kamiyama, Hideo
JOURNAL: J Nuclear Science & Technology-Japan v16, n3, p 200(7)
PUBLICATION DATE: Mar 79
DOCUMENT TYPE: technical report LANGUAGE: English

ABSTRACT: The adsorption characteristics of manganese ion on oxine-impregnated activated charcoal were studied. Adsorption rates of manganese-54 were compared with activated charcoal adsorption by cobalt-60. Radio-cobalt and -manganese constitute more than 90% of the radionuclides found in wastewater from nuclear facilities. Adsorption of manganese-54 on oxine-impregnated activated charcoal occurs when water ph is more than 5.0. The impregnation of oxine on activated charcoal improves the adsorption properties for manganese-54. The presence of cobalt-60 inhibits

manganese-54 adsorption on activated charcoal.

Record - 178

<DIALOG File 40: (c) 1994 CIS, Inc.>

00066266 ENVIROLINE NUMBER: 79-03862

Management of Radionuclides from Reprocessing Plant Gaseous Effluents

Zabaluev, Y.V., IAEA

JOURNAL: IAEA B v21, n1, p23(9)

PUBLICATION DATE: Feb 79

DOCUMENT TYPE: technical report LANGUAGE: English

ABSTRACT: The present technology and practices for controlling the off-gas emissions from fuel reprocessing operations are reviewed. Production of radionuclides and their discharge to the environment, methods of removing radionuclides from reprocessing plant gaseous streams, and techniques for storing radionuclides are discussed. Radionuclides discussed include krypton-85, radioiodine, tritium, and carbon-14. (Full text available from Congressional Information Service.)

Record - 179

<DIALOG File 40: (c) 1994 CIS, Inc.>

00061370 ENVIROLINE NUMBER: 78-06242

Cleaning Up Mixed Waste Streams-the Tank Truck Washing Example

JOURNAL: EPA Report EPA-600/9-77-007 (10)

PUBLICATION DATE: Apr 77

DOCUMENT TYPE: special report LANGUAGE: English

ABSTRACT: Wastewater from cleaning of chemical tankers is comparable to, but lower in volume than, discharges from the chemical manufacturing industry. An effluent treatment system developed jointly by the matlack Corp. and EPA was tested to determine its technical and economic viability. Tests addressed such problems as variability in wastewater composition and volume. System facilities for oil removal, physical separation, filtration, adsorption, and degradation are described. Operating, rental, and capital costs are estimated. Suggestions for reducing costs by equipment purchase and more efficient water use are given. (Full text available from Congressional Information Service.)

Record - 180

<DIALOG File 40: (c) 1994 CIS, Inc.>

00055534 ENVIROLINE NUMBER: 78-00413

Removal of Gaseous Radionuclides

Chesne, A.; Kroebel, R.; Le, Bouhellec J.; Miquel, P.; Schneider, E.;

Bohnenstringl, J.; Heidendaal, M.

JOURNAL: Presented at Iaea/Oecd Conf on Management of Radioactive Wastes from the Nuclear Fuel Cycle, Vienna v2, p85(56)

PUBLICATION DATE: Mar 76

DOCUMENT TYPE: survey report LANGUAGE: English

ABSTRACT: The development of an effective means for reducing the release of xenon isotopes from the PWR reactor offgases and the development of an

integrated gas purification loop for reducing environmental releases of iodine tritium and krypton at reprocessing plants are aspects of cooperative programs for the removal of gaseous radionuclides. R&D on removal of radioactive Noble gases in Japan and cryogenic separation of krypton and xenon from dissolver off-gas are reviewed also. (numerous diagrams, references, tables) (Full text available from Congressional Information Service.)

Record - 181

<DIALOG File 40: (c) 1994 CIS, Inc.>

00040507 ENVIROLINE NUMBER: 76-01276

Review of Literature Pertinent to the Aqueous Conversion of Radionuclides to Insoluble Silicates with Selected Reference and Bibliography (Revised)

Brownell, L.E., Atlantic Richfield Hanford Co. Wash; Kindle, C.H.; Theis, T.L.

JOURNAL: NTIS Report Arh-2731-Rev (119)

PUBLICATION DATE: Dec 73

DOCUMENT TYPE: special report LANGUAGE: English

ABSTRACT: Converting radioactive waste fission products and residual actinides in chemical processing plant wastes into crystalline aluminosilicate minerals wherein each of the nuclide cations are contained within individual molecular cages that constitute the crystal lattices is an effective means of isolating the radionuclides until they decay to innocuous levels. Literature pertinent to immobilization of cations by silicates, with emphasis on aqueous systems, is reviewed. (numerous references) (Full text available from Congressional Information Service.)

Record - 182

<DIALOG File 40: (c) 1994 CIS, Inc.>

00017076 ENVIROLINE NUMBER: 73-08195

Process Selection for Radionuclide Removal at ORNL

Harrington, F.E.; Holmes, J.M.

JOURNAL: Aiche Water Sym Series Vol 69 1972 p183 (5)

LANGUAGE: English

ABSTRACT: NO ABSTRACT TEXT PRESENT

Record - 183

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Title: Innovative systems for mixed waste retrieval and/or treatment in confined spaces

Author(s)/Editor(s): Fekete, L.J.; Ghusn, A.E. (Parsons Environmental Services, Inc., Fairfield, OH (United States))

Corporate Source: Fernald Environmental Restoration Management Corp., Cincinnati, OH (United States). Fernald Environmental Management Project Parsons Environmental Services, Inc., Fairfield, OH (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Conference Title: 2. international mixed waste symposium

Conference Location: Baltimore, MD (United States) Conference Date: 17-20 Aug 1993

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Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: Fernald established operations in 1951 and produced uranium and other metals for use at other DOE facilities. A part of the sitewide remediation effort is the removal, treatment, and disposal of the K-65 wastes from Silos 1 and 2. These silos contain radium-bearing residues from the processing of pitchblende ore. An Engineering Evaluation/Cost Analysis was prepared to evaluate the removal action alternatives using the preliminary characterization data and select a preferred alternative. The selected alternative consisted of covering the K-65 residues and the silo dome. The remediation of the K-65 wastes consists of the retrieval and treatment of the wastes prior to final disposal, which has not yet been determined. Treatment will be performed in a new facility to be built adjacent to the silos. The wastes must be retrieved from silos in an efficient and reliable way and delivered to the treatment facility. The first challenge of covering the wastes with bentonite has been successfully met. The second phase of retrieving the wastes from the silos is not due for a few years. However, conceptual design and configuration of the retrieval system have been developed as part of the Conceptual Design Report. The system is based on the utilization of hydraulic mining techniques, and is based on similar successful applications. This report describes the emplacement of the bentonite grout and the design for the slurry retrieval system.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03606832 EDB-94-028445

Title: Vitrification development plan for US Department of Energy mixed wastes

Author(s)/Editor(s): Peters, R. (Pacific Northwest Lab., Richland, WA (United States)); Lucerna, J. (EG and G Rocky Flats, Inc., Golden, CO (United States)); Plodinec, M.J. (Westinghouse Savannah River Co., Aiken, SC (United States))

Corporate Source: USDOE Office of Environmental Restoration and Waste Management, Washington, DC (United States). Office of Technology Development Pacific Northwest Lab., Richland, WA (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Publication Date: Oct 1993 (95 p)

Report Number(s): DOE/MWIP-11 ORNL/M--3258

Order Number: DE94006308

Contract Number (DOE): AC05-84OR21400

Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: This document is a general plan for conducting vitrification development for application to mixed wastes owned by the US Department of Energy. The emphasis is a description and discussion of the data needs to proceed through various stages of development. These stages are (1) screening at a waste site to determine which streams should be vitrified, (2) waste characterization and analysis, (3) waste form development and treatability studies, (4) process engineering development, (5) flowsheet and technical specifications for treatment processes, and (6) integrated pilot-scale demonstration. Appendices provide sample test plans for various stages of the vitrification development process. This plan is directed at thermal treatments which produce waste glass. However, the study is still applicable to the broader realm of thermal treatment since it deals with issues such as off-gas characterization and waste characterization that are not necessarily specific to vitrification. The purpose is to provide those exploring or considering vitrification with information concerning the kinds of data that are needed, the way the data are obtained, and the way the data are used. This will provide guidance to those who need to prioritize data needs to fit schedules and budgets. Knowledge of data needs also permits managers and planners to estimate resource requirements for vitrification development.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03601363 EDB-94-017329

Title: Prospects for vitrification of mixed wastes at ANL-E

Author(s)/Editor(s): Mazer, J.; No, Hyo.

Corporate Source: Argonne National Lab., IL (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Publication Date: [1993] (29 p)

Report Number(s): ANL/CMT/RP-81291

Order Number: DE94003772

Contract Number (DOE): W-31109-ENG-38

Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: This report summarizes a study evaluating the prospects for vitrification of some of the mixed wastes at ANL-E. This project can be justified on the following basis: Some of ANL-E's mixed waste streams will be stabilized such that they can be treated as a low-level radioactive waste. The expected volume reduction that results during vitrification will significantly reduce the overall waste volume requiring disposal. Mixed-waste disposal options currently used by ANL-E may not be permissible in the near future without treatment technologies such as vitrification.

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Record - 186

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03595963 EDB-94-011929

Title: Immobilization in ceramic waste forms of the residues from treatment of mixed wastes

Author(s)/Editor(s): Oversby, V.M.; van Konynenburg, R.A.; Glassley, W.E.; Curtis, P.G.

Corporate Source: Lawrence Livermore National Lab., CA (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Conference Title: International symposium on scientific basis for nuclear waste management

Conference Location: Boston, MA (United States) Conference Date: 29 Nov - 3 Dec 1993

Publication Date: Nov 1993 (10 p)

Report Number(s): UCRL-JC-114024 CONF-931195--1

Order Number: DE94002859

Contract Number (DOE): W-7405-ENG-48

Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: The Environmental Restoration and Waste Management Applied Technology Program at LLNL is developing a Mixed Waste Management Facility to demonstrate treatment technologies that provide an alternative to incineration. As part of that program, we are developing final waste forms using ceramic processing methods for the immobilization of the treatment process residues. The ceramic phase assemblages are based on using Synroc D as a starting point and varying the phase assemblage to accommodate the differences in chemistry between the treatment process residues and the defense waste for which Synroc D was developed. Two basic formulations are used, one for low ash residues resulting from treatment of organic materials contaminated with RCRA metals, and one for high ash residues generated from the treatment of plastics and paper products. Treatment process residues are mixed with ceramic precursor materials, dried, calcined, formed into pellets at room temperature, and sintered at 1150 to 1200[degrees]C to produce the final waste form. This paper discusses the chemical composition of the waste streams and waste forms, the phase assemblages that serve as hosts for inorganic waste elements, and the changes in waste form characteristics as a function of variation in process parameters.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03592489 INS-93-025269; EDB-94-008455

Title: Surface water management at a mixed waste remediation site

Author(s): Schlotzhauer, D.S.; Warbritton, K.R.

Title: Environmental remediation 1991: Cleaning up the environment for the
21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland,
WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration
and Waste Management, Washington, DC (United States). Office of
Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep
1991

Publication Date: 1991 p 465-468 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: The Weldon Spring Remedial Action Project (WSSRAP) deals with chemical and radiological contaminants. MK-Ferguson Company is managing the project under contract with the US Department of Energy. Remedial activities include demolishing buildings, constructing material storage and staging areas, excavating and consolidating waste materials, and treating and disposing of the materials in a land disposal facility.

Due to the excavation and construction required during remediation, a well-planned surface water management system is essential. Planning involves characterization of source areas and surface water transport mechanisms and identification of applicable regulations. System components include: erosion control sediment control, flow attenuation, and management of contaminated water. Combinations of these components may be utilized during actual construction and remediation to obtain optimum control. Monitoring is performed during implementation in order to assess the effectiveness of control measures. This management scheme provides for comprehensive management of surface water at this site by providing control and/or treatment to appropriate standards. Although some treatment methodologies for contaminated water are specific to site contaminants, this comprehensive program provides a management approach which is applicable to many remedial projects in order to minimize contaminant release and meet Clean Water Act requirements.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03592362 INS-93-025275; EDB-94-008328

Title: Soil washing results for mixed waste pond soils at Hanford

Author(s): Gerber, M.A.; Freeman, H.D.; Baker, E.G.; Riethm, W.F.

(Pacific Northwest Laboratory, Richland, WA (United States))

Title: Environmental remediation 1991: Cleaning up the environment for the
21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland,
WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration
and Waste Management, Washington, DC (United States). Office of
Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep
1991

Publication Date: 1991 p 511-515 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: Soil washing technology was assessed as a means for remediating
soil contaminated with mixed wastes primarily composed of heavy metals
and radionuclides. The soils at the US Department of Energy's Hanford
Site are considered suitable for soil washing because of their
relatively low quantities of silt and clay. However, in a limited
number of soil washing experiments using soils from different locations
in the north pond of the 300 Area, the degree of decontamination
achieved for the coarse fraction of the soil varied considerably. Part
of this variation appears to be due to the presence of a discrete layer
of contaminated sediment found in some of the samples.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03592299 INS-93-025305; EDB-94-008265

Title: Ground water extraction, treatment, and upgradient injection systems provide a mechanism to control tritium plumes at DOE facilities

Author(s): Nixon, P.; St. Clair, L.; Wheat, B.

Title: Environmental remediation 1991: Cleaning up the environment for the 21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland, WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration and Waste Management, Washington, DC (United States). Office of Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep 1991

Publication Date: 1991 p 707-712 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: Tritium has migrated from waste management units at some Department of Energy facilities and has impacted the environment. The Environmental Protection Agency and the South Carolina Department of Health and Environmental Control have requested that the Savannah River Site remediate a tritiated groundwater plume from the F and H-Area Seepage Basins. Existing tritium treatment techniques were investigated and determined to be infeasible due to the dilute concentrations, and high capital and operating costs. Due to its short half-life, tritium [open quotes]treatment[close quotes] of contaminated groundwater through recycling by extraction and upgradient injection offers a cost effective treatment alternative that can be installed relatively quickly.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03592112 INS-93-025274; EDB-94-008078

Title: Selection of innovative technologies for the remediation of soils contaminated with radioactive and mixed wastes

Author(s): Steude, J.; Tucker, B.

Title: Environmental remediation 1991: Cleaning up the environment for the 21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland, WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration and Waste Management, Washington, DC (United States). Office of Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep 1991

Publication Date: 1991 p 491-509 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: The remediation of sites containing radioactive and mixed wastes is in a period of rapid growth. The state of the art of remediation is progressing to handle the shortcomings of conventional pump and treat or disposal technologies. The objective of this paper is to review the status of selected innovative technologies which treat soils contaminated with radioactive and mixed waste. Technologies are generally classified as innovative if they are fully developed, but lack sufficient cost or performance data for comparison with conventional technologies. The Environmental Protection Agency recommends inclusion of innovative technologies in the RI/FS screening process if there is reason to believe that they would offer advantages in performance, implementability, cost, etc. This paper serves as a compilation of the pertinent information necessary to gain an overview of the selected innovative technologies to aid in the RI/F'S screening process. The innovative technologies selected for evaluation are listed below. Bioremediation, although innovative, was not included due to the combination of the vast amount of literature on this subject and the limited scope of this project. 1. Soil washing and flushing; 2. Low temperature thermal treatment; 3. Electrokinetics; 4. Infrared incineration; 5. Ultrasound; 6. In situ vitrification; 7. Soil vapor extraction; 8. Plasma torch slagging; 9. In situ hot air/steam extraction; 10. Cyclone reactor treatment; 11. In situ radio frequency; 12. Vegetative radionuclide uptake; and 13. In situ soil heating. The information provided on each technology includes a technical description, status, summary of results including types of contaminants

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and soils treated, technical effectiveness, feasibility and estimated cost.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03587251 INS-93-025331; EDB-94-003217

Title: Remedial investigation/feasibility study risk assessments at a
superfund mixed waste site

Author(s): Pack, S.R.

Title: Environmental remediation 1991: Cleaning up the environment for the
21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland,
WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration
and Waste Management, Washington, DC (United States). Office of
Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep
1991

Publication Date: 1991 p 877-882 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: This paper presents lessons learned during EPA and DOE review of
RI/FS risk assessments for the Fernald Environmental Management Project
(FEMP). It was found that various sensitive issues are difficult to
resolve and have the potential to slow down the approval of all RI/FS
documents. Some of the major sensitive topics are: background
contaminant concentrations; fate and transport model, parameters;
sensitive subpopulations; future land use; institutional controls;
radiation slope factors; additive toxic effects; basis for remediation
goals. The topics are presented along with the current status of their
resolution.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03587211 INS-93-025255; EDB-94-003177

Title: Meeting health-based standards at hazardous and mixed waste sites:

Are we deluding ourselves

Author(s): Wallace, W.A.

Title: Environmental remediation 1991: Cleaning up the environment for the
21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland,
WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration
and Waste Management, Washington, DC (United States). Office of
Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep
1991

Publication Date: 1991 p 393-399 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: Achieving health-based standards is clearly a desirable goal in
hazardous and mixed waste remediation. However, the application of such
standards is only appropriate if they can be applied with reasonable
accuracy and the criteria met using available technology. This paper
contends that for a substantial number of sites, health-based goals
cannot be applied with the necessary accuracy. Furthermore, it is
problematic as to whether current technologies can achieve those
standards. The paper outlines the uncertainties and complexities that
undermine the current risk assessment and site remediation processes.

The paper concludes with a discussion of how uncertainty can be managed
during remediation using techniques derived from geotechnical
engineering -- the observational method.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03585610 EDB-94-001576

Title: Treatment of Y-12 plant mixed waste contaminated soils utilizing the Westinghouse soil washing process

Author(s): Grant, D.C.; Lahoda, E.J. (Westinghouse Science and Technology Center, Pittsburgh, PA (United States)); Dietrich, A.J.

Title: Environmental remediation 1991: Cleaning up the environment for the 21st Century'

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland, WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration and Waste Management, Washington, DC (United States). Office of Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep 1991

Publication Date: 1991 p 139-142 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: A soil washing demonstration was successfully conducted for the US Department of Energy to demonstrate a physical segregation and chemical extraction soil washing approach for decontaminating soils from the Oak Ridge Y-12 plant. Uranium and PCBs were removed from an oil land farm material containing high levels of oil and grease.

Excessive levels of uranium, mercury, and PCBs were also removed from a sewer sediment material. Physical segregation and chemical extraction techniques reduced the uranium content of both soils making them non-radioactive. In addition, both soils successfully met the PCB requirement and passed the TCLP test, showing the materials to be no longer hazardous. The sewer sediment mercury level was reduced by over 90%, but was still above the desired level. Additional washing may achieve that level. All of the oil landfarm and at least 85% of the sewer sediment are recovered as non-radioactive and non-hazardous materials.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03585548 INS-93-025239; EDB-94-001514

Title: Baseline risk assessment methodology for mixed waste

Author(s): Dove, F.H.; Marshall, T.C.; Seiler, F.A.

Title: Environmental remediation 1991: Cleaning up the environment for the
21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland,
WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration
and Waste Management, Washington, DC (United States). Office of
Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep
1991

Publication Date: 1991 p 295-299 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: The presence of mixed waste (chemical and radioactivite)
introduces several complex issues into a baseline risk assessment. A
five-stage, serial methodology consistent with Department of Energy
orders and Environmental Protection Agency regulations is available for
the evaluation of risk at these disposal sites. The methodology
suggests a simple-to-complex approach for the determination of risk.
Guidelines for the combination of radiological and nonradiological risk
are proposed.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03585535 INS-93-025294; EDB-94-001501

Title: An approach to regulatory compliance with radioactive mixed waste regulations

Author(s): Baker, G.G.; Mihalovich, G.S.; Provencher, R.B.

Title: Environmental remediation 1991: Cleaning up the environment for the 21st Century"

Author(s)/Editor(s): Wood, D.E. (ed.) (Westinghouse Hanford Co., Richland, WA (United States))

Corporate Source: USDOE Assistant Secretary for Environmental Restoration and Waste Management, Washington, DC (United States). Office of Environmental Restoration

Conference Title: Environmental remediation '91 conference

Conference Location: Pasco, WA (United States) Conference Date: 8-11 Sep 1991

Publication Date: 1991 p 633-642 (896 p)

Report Number(s): CONF-910981--

Order Number: DE93010652

Language: English

Availability: OSTI; NTIS; INIS

Abstract: On May 7, 1990, radioactive mixed waste (RMW) at the West Valley Demonstration Project (WVDP) became subject to the State Of New York hazardous waste regulations. The facility was required to be in full compliance by June 6, 1990. Achievement of this goal was difficult because of the short implementation time frame. Compliance with the hazardous waste regulations also presented some potential conflicts between the hazardous waste requirements and other regulatory requirements specifically applicable to nuclear facilities. The potential conflicts involved construction, operation, and control measures. However, the facility had been working extensively with EPA Region 2 and the New York State Department of Environmental Conservation (NYSDEC) on the application of the hazardous waste regulations to the facility. During these preliminary contacts, WVDP identified three issues that related to the potential conflicts: 1.

Equivalency of Design and Equipment, 2. Land Disposal Restrictions (LDR), and 3. The Principle of As Low As Reasonable Achievable (ALARA) Radiation Exposure. The equivalency of nuclear facility design and equipment to the hazardous waste requirements is based in part on the increased construction criteria for nuclear facilities, the use of remote radiological monitoring for leak detection, and testing of system components that are not accessible to personnel due to high levels of radiation. This paper discusses in detail: 1. The implementation and results of the WVDP's interaction with its regulators, 2. How the regulators were helped to understand the different situations and conditions of nuclear and chemical facilities,

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and 3. How, by working together, the result was not only mutually advantageous to the NWDP and the agencies, but it also assured that the health and safety of workers, the public, and the environment were protected.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03585479 EDB-94-001445

Title: Treatment process for a mixed waste oil/solvent stream

Author(s): Miller, R.A.; Stine, E.F.; Handly, J.D. (IT Corporation, Knoxville, TN (United States)); Chi, L. (Martin Marietta Energy Systems, Oak Ridge, TN (United States))

Title: Air Waste Management Association 85th annual meeting

Conference Title: 85. annual meeting of the Air and Waste Management Association (AWMA)

Conference Location: Kansas City, MO (United States) Conference Date: 21-26 Jun 1992

Publisher: Pittsburgh, PA (United States) Air Waste Management Association

Publication Date: 1992 p 51 (301 p)

Report Number(s): CONF-9206114--

Language: English

Availability: Air Waste Management Association, P.O. Box 2861, Pittsburgh, PA 15230 (United States)

Abstract: Under current regulations, mixed waste cannot be disposed of at any commercial disposal facility without treatment to render the waste [open quotes]non-mixed [close quotes]. This project developed a physical/chemical treatment process for a mixed waste oil/solvent stream from the Department of Energy Y-12 facility in Oak Ridge, Tennessee. The main objective of the process was to lower the concentrations of uranium and beryllium to acceptable levels of 32 pCi/g and 0.5 ppm, respectively. The process solubilizes and separates the uranium and beryllium from the oil/solvent. Hydrochloric acid provides the primary chemical mechanism for the separation. A solvent is added to the HCl/waste mixture to improve the physical separation of the oil and acid phases. The oil and acid phases are backwashed to ensure removal of entrained liquids. These oil and acid streams are recycled counter-currently to minimize the volume of waste streams. Solids filtration is used to separate any undissolved material from the oil and acid phases. The results from a series of bench-scale test runs verified the treatment process reduced the uranium concentration to less than 2.5 pCi/g (less than 3 mg/Kg). The beryllium concentration was reduced as well to less than 0.2 ppm. These results were confirmed in larger scale pilot test equipment.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03576468 EDB-93-155346

Title: Treatability studies on F/H Area hot spot" groundwater composite

Author(s)/Editor(s): Bibler, J.P.

Corporate Source: Westinghouse Savannah River Co., Aiken, SC (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Publication Date: 30 Aug 1993 (56 p)

Report Number(s): WSRC-RP-92-824-Rev.1

Order Number: DE94002029

Contract Number (DOE): AC09-89SR18035

Language: English

Availability: OSTI; NTIS; GPO Dep.

Abstract: The data found in this report were collected from laboratory experiments that were conducted to characterize the "hot spot" groundwater before and after pH adjustment, to describe the settling behavior and particle size of the precipitates resulting from pH adjustment, and to compare several methods of pH adjustment. Although Decontamination Factors (DFs) for all precipitating agents are similar, the best settling characteristics and most manageable precipitate were produced when 25 ppM Al³⁺ was introduced as Al₂(SO₄)₃ and pH adjustment was made from 6--8 with NaOH. The resulting precipitate will not be a hazardous secondary waste.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03576285 EDB-93-155163

Title: Mixed-waste treatment -- What about the residuals (Molten Salt Oxidation)

Author(s)/Editor(s): Carlson, T.; Carpenter, C.; Cummins, L. (Chem-Nuclear Geotech, Inc., Grand Junction, CO (United States)); Haas, P.; MacInnis, J.; Maxwell, C. (Oak Ridge National Lab., TN (United States))

Corporate Source: Oak Ridge National Lab., TN (United States) Chem-Nuclear Geotech, Inc., Grand Junction, CO (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Conference Title: Department of Energy environmental remediation conference

Conference Location: Augusta, GA (United States) Conference Date: 24-28 Oct 1993

Publication Date: [1993] (16 p)

Report Number(s): CONF-931095-44

Order Number: DE94002444

Contract Number (DOE): AC05-84OR21400; AC04-86ID12584

Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: Incineration currently is the best demonstrated available technology for the large inventory of U.S. Department of Energy (DOE) mixed waste. However, molten salt oxidation (MSO) is an alternative thermal treatment technology with the potential to treat a number of these wastes. Of concern for both technologies is the final waste forms, or residuals, that are generated by the treatment process. An evaluation of the two technologies focuses on 10 existing DOE waste streams and current hazardous-waste regulations, specifically for the delisting of "derived-from" residuals. Major findings include that final disposal options are more significantly impacted by the type of waste treated and existing regulations than by the type of treatment technology; typical DOE waste streams are not good candidates for delisting; and mass balance calculations indicate that MSO and incineration generate similar quantities (dry) and types of residuals.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03553363 INS-93-019772; EDB-93-132241

Title: Remediation technologies for low-level radioactive and mixed waste treatment: Present and future perspective

Author(s): Vijayan, S. (Atomic Energy of Canada Ltd., Chalk River, Ontario (Canada). Chalk River Labs.)

Title: Emerging separation technologies for metals and fuels

Author(s)/Editor(s): Lakshmanan, V.I.; Bautista, R.G.; Somasundaran, P. (eds.)

Conference Title: Symposium on emerging separation technologies for metals and fuels

Conference Location: Palm Coast, FL (United States) Conference Date: 13-18 Mar 1993

Publisher: Warrendale, PA (United States) Minerals, Metals and Materials Society

Publication Date: 1993 p 331-332 (492 p)

Report Number(s): CONF-9303107--

ISBN: 0-87339-205-1

Language: English

Availability: The Minerals, Metals and Materials Society, 420 Commonwealth Drive, Warrendale, PA 15086 (United States)

Abstract: The paper presents an overview of remediation technologies for contaminant removal, waste volume reduction and secondary waste immobilization that are applicable to low-level radioactive and mixed wastes. Research and development needs for new cost-effective technologies to treat high-volume waste are described. The paper outlines examples of integrated innovative technologies for site remediation applications, and concludes with a discussion of potential technology options for separating mixed waste into its constituent low-level radioactive and hazardous waste groups, to permit the appropriate disposal of the segregated components.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03549599 AIX-24-066302; EDB-93-128477

Title: Absorption of radionuclides and other solutes in a natural wetland system

Author(s): Akber, R.A.; Johnston, A.; Hancock, G. (Alligator Rivers Region Research Inst., Jabiru, N.T. (Australia))

Conference Title: 5. international symposium on the natural radiation environment

Conference Location: Salzburg (Austria) Conference Date: 22-28 Sep 1991

Source: Radiation Protection Dosimetry (United Kingdom) v 45:1-4.

Coden: RPDODE ISSN: 0144-8420

Publication Date: 1992 p 293-297

Report Number(s): CONF-910905--

Language: English

Abstract: The effectiveness of wetland filtration in removing radionuclides from waste water has been investigated. Water samples were collected during the release of waste water from the Ranger Uranium Mine through a natural wetland filter consisting of an overland flow area and a billabong. Concentrations of $[sup 226]Ra$, $[sup 238]U$ and other solutes were determined. Reduction in solute concentrations can arise both by absorption and by dilution. Distinction between these two processes has been based on the comparison of concentrations of the solutes of interest with those of ions that are relatively non-reactive. U is absorbed both during overland flow and in the billabong, while only overland flow is important for Ra absorption. Ca and Mg are not absorbed. (author).

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03545972 AIX-24-061912; EDB-93-124850

Title: Treatment and final disposal of nuclear waste

Corporate Source: Swedish Nuclear Fuel and Waste Management Co., Stockholm
(Sweden)

ISSN: 1100-8113

Publication Date: Sep 1992 (187 p)

Report Number(s): NEI-SE-118

Order Number: DE94600313

Note: Background report to RD and D programme 92.

Language: English

Availability: OSTI; NTIS; INIS

Abstract: The present background report to RD and D-programme 93 'Detailed

R and D-programme 1993-1998' gives a detailed description of the state-of-the-art and future plans for safety assessments and supportive research. The technical development that is required for the construction of the encapsulation station and the deep repository for demonstration deposition is described. The report describes the need for performance and safety assessments occasioned by the above plans for activities. Against the background of the time schedule for safety reports etc., an account is given of the state-of-the-art, goals and planned work during the period with regard to the engineered barriers of spent nuclear fuel, canister material and buffer and backfill material. State-of-the-art, goals and planned work within the geosciences for groundwater movements, bedrock stability and geohydrological and rock mechanical calculation models are presented as well as the situation within the chemistry programme, with separate sections on groundwater and geochemistry, radionuclide chemistry and validation of processes in transport model and radionuclide migration. The study of such natural conditions as constitute analogues in certain respects to important chemical sorption and transport processes in a deep repository is presented. The state of knowledge concerning radionuclide transport in the biosphere and modelling of the same, as well as resulting dose to man, are described. R and D efforts associated with the development of technology that is required for repository construction, excavation of tunnels, deposition of waste and possibly necessary retrieval of canisters, as well as backfilling and sealing of the repository are presented.

202

Record - 202

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03530439 EDB-93-102920

Title: Status of vitrification for DOE low-level mixed waste

Author(s)/Editor(s): Schumacher, R.F.; Jantzen, C.M.; Plodinec, M.J.

Corporate Source: Westinghouse Savannah River Co., Aiken, SC (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Conference Title: 95. annual meeting of the American Ceramic Society

Conference Location: Cincinnati, OH (United States) Conference Date: 18-22 Apr 1993

Publication Date: Apr 1993 (10 p)

Report Number(s): WSRC-MS-92-504-Rev.1 CONF-930438--27-Rev.-1

Order Number: DE93016110

Contract Number (DOE): AC09-89SR18035

Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: Vitrification is being considered by the Department of Energy for solidification of many low-level mixed waste streams. Some of the advantages, requirements, and potential problem areas are described. Recommendations for future efforts are presented.

203

Record - 203

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03515104 EDB-93-093979

Title: Remediation of mercury-contaminated soils/mixed wastes

Author(s): Chatterjee, S. (DYNAMIC Corp., Rockville, MD (United States));

Moore, H.H. (Dept. of Energy, West Valley, NY (United States))

Title: Proceedings of federal environmental restoration conference and exhibition

Conference Title: 1992 Hazardous Materials Control Research Institute

(HMCRI) federal environmental restoration conference and exhibition

Conference Location: Vienna, VA (United States) Conference Date: 15-17

Apr 1992

Publisher: Greenbelt, MD (United States) Hazardous Materials Control Resources Inst.

Publication Date: 1992 p 230-234 (472 p)

Report Number(s): CONF-9204110--

ISBN: 1-56590-005-7

Language: English

Availability: Hazardous Materials Control Resources Institute, 7237

Hanover, MD 20770-3602 (United States)

Abstract: Remediation of mercury-contaminated soils requires a careful site-specific selection of remediation technology and cleanup standards. Assessment of mercury cleanup needs at the US Dept of Energy's (DOE) Y-12 Weapons Facility in Oak Ridge, Tennessee, shows that a systematic research/development strategy is needed to evaluate several new cleanup technologies and remediation criteria. An appropriate mercury cleanup standard for soils is expected to be 2.0 ppm, and the applicable new cleanup technology could cost approximately \$400 per ton.

204

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03503824 EDB-93-082699

Title: Processing results of 1,800 gallons of mercury and radioactively contaminated mixed waste rinse solution

Author(s)/Editor(s): Thiesen, B.P.

Corporate Source: EG and G Idaho, Inc., Idaho Falls, ID (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Publication Date: Jan 1993 (147 p)

Report Number(s): EGG-WM-10630

Order Number: DE93012166

Contract Number (DOE): AC07-76ID01570

Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: The mercury-contaminated rinse solution (INEL waste ID[number sign] 123; File 8 waste) was successfully treated at the Idaho National Engineering Laboratory (INEL). This waste was generated during the decontamination of the Heat Transfer Reactor Experiment 3 (HTRE-3) reactor shield tank. Approximately 1,800 gal of waste was generated and was placed into 33 drums. Each drum contained precipitated sludge material ranging from 1--10 in. in depth, with the average depth of about 2.5 in. The pH of each drum varied from 3--11. The bulk liquid waste had a mercury level of 7.0 mg/l, which exceeded the Resource Conservation and Recovery Act (RCRA) limit of 0.2 mg/l. The average liquid bulk radioactivity was about 2.1 pCi/ml, while the average sludge contamination was about 13,800 pCi/g. Treatment of the waste required separation of the liquid from the sludge, filtration, pH adjustment, and ion exchange. Because of difficulties in processing, three trials were required to reduce the mercury levels to below the RCRA limit. In the first trial, insufficient filtration of the waste allowed solid particulate produced during pH adjustment to enter into the ion exchange columns and ultimately the waste storage tank. In the second trial, the waste was filtered down to 0.1 [mu] to remove all solid mercury compounds. However, before filtration could take place, a solid mercury complex dissolved and mercury levels exceeded the RCRA limit after filtration. In the third trial, the waste was filtered through 0.3-A filters and then passed through the S-920 resin to remove the dissolved mercury. The resulting solut

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03491310 EDB-93-070186

Title: Diphonix - a new ion-exchange resin for the treatment of industrial waste streams, contaminated groundwaters, and mixed wastes

Author(s): Horwitz, E.P.; Gatrone, R.C.; Chiarizia, R.; Alexandratos, S.

Title: Surveys of research in the Chemistry Division, Argonne National Laboratory

Author(s)/Editor(s): Grazis, B.M. (ed.)

Corporate Source: Argonne National Lab., IL (United States)

Publication Date: 1992 p 164-166 (220 p)

Report Number(s): ANL/CHM/RP-77160

Order Number: DE93002896

Language: English

Availability: OSTI; NTIS

Abstract: Interest in the removal and recovery of heavy (toxic) metal ions from contaminated groundwater, mixed wastes, industrial waste streams, and contaminated drinking water continues to increase as environmental laws become more stringent and permissible discharge limits are lowered. Treatment of contaminated water or industrial waste streams has frequently utilized precipitation and ion-exchange technologies. However, precipitation will not meet the lower limits and requires excessive quantities of chemicals, and commercially available ion-exchange resins do not have high affinities for many of the toxic metals relative to Ca and Mg. The authors have synthesized and characterized a new ion-exchange resin that shows considerable potential for environmental restoration, for the treatment of industrial waste streams, and for the treatment of alpha-active mixed waste. The new resin contains geminally substituted diphosphonic acid functional groups. The resin is called Diphonix for diphosphonic ion exchange. Alkyl-1,1-diphosphonic acids are among the most powerful complexing agents for polyvalent metal ions in aqueous solution, particularly at pH < 2. But heretofore, it has not been possible to synthesize resins containing diphosphonic acid groups because of the difficulty of introducing this group into a preformed polymer matrix. The synthesis of Diphonix was accomplished by the copolymerization of tetraalkylvinylidene diphosphonate with styrene, divinyl-benzene, and acrylonitrile followed by deesterification of the resultant resin by refluxing with concentrated HCl. 3 figs., 2 tabs.

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Record - 206

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03473503 EDB-93-052379

Title: Life cycle cost analysis changes mixed waste treatment program at the Savannah River Site

Author(s)/Editor(s): Pickett, J.B.; England, J.L.; Martin, H.L.

Corporate Source: Westinghouse Savannah River Co., Aiken, SC (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Conference Title: 1993 federal environmental restoration conference

Conference Location: Washington, DC (United States) Conference Date: 25-27 Mar 1993

Publication Date: [1992] (15 p)

Report Number(s): WSRC-MS-92-346-Rev.1 CONF-9303105--1-Rev.1

Order Number: DE93008072

Contract Number (DOE): AC09-89SR18035

Language: English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: A direct result of the reduced need for weapons production has been a re-evaluation of the treatment projects for mixed (hazardous/radioactive) wastes generated from metal finishing and plating operations and from a mixed waste incinerator at the Savannah River Site (SRS). A Life Cycle Cost (LCC) analysis was conducted for two waste treatment projects to determine the most cost effective approach in response to SRS mission changes. A key parameter included in the LCC analysis was the cost of the disposal vaults required for the final stabilized wasteform(s). The analysis indicated that volume reduction of the final stabilized wasteform(s) can provide significant cost savings. The LCC analysis demonstrated that one SRS project could be eliminated, and a second project could be totally rescoped and downsized. The changes resulted in an estimated Life Cycle Cost saving (over a 20 year period) of \$270,000,000.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03466365 NOV-93-006070; EDB-93-045241

Title: Treatment of heavy metals and radionuclides in groundwater and wastewater by magnetic separation

Author(s): Bradbury, D.; Elder, G.R.; Tucker, P.M. (Bradtec Ltd., Bristol (United Kingdom)); Dunn, M.J. (Bradtec-US, Inc., Atlanta, GA (United States))

Title: Proceedings of emerging technologies for hazardous waste management

Author(s)/Editor(s): Tedder, D.W. (School of Chemical Engineering, Georgia Inst. of Technology, Atlanta, GA (United States))

Conference Title: American Chemical Society (ACS) special symposium on emerging technologies in hazardous waste management

Conference Location: Atlanta, GA (United States) Conference Date: 21-23 Sep 1992

Publisher: Washington, DC (United States) American Chemical Society

Publication Date: 1992 p 439-441 (755 p)

Report Number(s): CONF-9209226--

Language: English

Availability: American Chemical Society, 1155 Sixteenth St. NW, Washington, DC 20036 (United States)

Abstract: Removal of trace quantities of heavy metal or radionuclide contamination from solutions at high flow rate presents a considerable technical challenge. Low flow methods of treatment such as particle gravity settling require expensive large volume equipment, whereas traditional methods of filtration demand significant energy costs.

Magnetic filtration can be used to provide a low cost method of solid-liquid separation at high flow rate, provided contaminants can be selectively bound to a magnetic solid particle. This paper describes recent progress with this technique including performance tests of composite materials produced to selectively remove specific contaminants such as cesium, uranium, lead, cadmium, and mercury from solution.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03460925 AIX-24-025789; EDB-93-039801

Title: Sorption behaviour of radionuclides in water solutions

Author(s): Davidov, Yu.P.; Efremenkov, V.M.; Lopatina, T.V.; Voronic, N.I.; Shatilo, N.N. (Byelorussian Academy of Sciences, Minsk (Russian Federation). Nuclear Power Engineering Inst.)

Title: Use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Corporate Source: International Atomic Energy Agency, Vienna (Austria)

Conference Title: Final research co-ordination meeting on the use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Conference Location: Rez (Czechoslovakia) Conference Date: 4-8 Nov 1991

ISSN: 1011-4289

Publication Date: Nov 1992 p 161-172 ([189] p)

Report Number(s): IAEA-TECDOC-675 CONF-9111297--

Order Number: DE93618000

Language: English

Availability: OSTI; NTIS (US Sales Only); INIS

Abstract: The sorption behaviour of U(VI), Zr(IV), Th(IV), Fe(III), Cr(III), Y(III), Sc(III), Ce(III), Sr(II) and Cs(I) has been studied.

Applying a set of physicochemical methods, spectrophotometry, dialysis, ultrafiltration, electromigration, centrifugation and ion exchange, the state of the above radionuclides has been studied over a wide range of pH (1-12) and cation concentration in solutions. The conditions of formation of mono- and polynuclear hydroxocomplexes in solution have been determined. The features of sorption behaviour of mono- and polynuclear forms on different sorbents have been studied. The hydrolysis of Zr, Fe, Cr and Y leads to reduction in the sorption of these elements on cationite; on the contrary, the hydrolysed forms of U, Th and S are more strongly sorbed. Sorption of Cs, Sr and Ce on different samples of soil and on different inorganic sorbents has been studied. A methodological approach to the determination of the sorption-desorption mechanism is discussed. (author). 3 refs, 17 figs, 3 tabs.

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Record - 209

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03458298 AIX-24-027215; EDB-93-037174

Title: Adsorption of radionuclides on oxide sorbents and impregnated porous membranes under high temperature conditions

Author(s): Bilewicz, A. (Institute of Nuclear Chemistry and Technology, Warsaw (Poland)); Schenker, E. (Paul Scherrer Inst. (PSI), Villigen (Switzerland))

Title: Use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Corporate Source: International Atomic Energy Agency, Vienna (Austria)

Conference Title: Final research co-ordination meeting on the use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Conference Location: Rez (Czechoslovakia) Conference Date: 4-8 Nov 1991

ISSN: 1011-4289

Publication Date: Nov 1992 p 173-187 ([189] p)

Report Number(s): IAEA-TECDOC-675 CONF-9111297--

Order Number: DE93618000

Language: English

Availability: OSTI; NTIS (US Sales Only); INIS

Abstract: The adsorption properties of hydrous titanium and zirconium oxides for Co(II) and other corrosion products have been studied under high temperature and pressure condition. The studies of dependence of distribution coefficients ($K_{\text{sub d}}$) on temperature indicate that $K_{\text{sub d}}$ decreases with increasing temperature. The more negative enthalpy values for cobalt sorption at high temperature on oxide sorbents are connected with formation of spinel-type compounds like cobalt metatitanates. The sorption of radionuclides on oxide sorbents in column processes was studied under high temperature and pressure conditions, similar to those existing in the BWR recirculation loop. The column filled with $TiO_{\text{sub 2}}\text{aq}$. worked very effectively as both mechanical and ionic filter. Due to low mechanical stability of oxide sorbents, hydrous titanium oxide was incorporated into porous stainless steel membrane. The membranes impregnated with $TiO_{\text{sub 2}}\text{aq}$. are very efficient materials for sorption of radionuclides from aqueous solution, and can be used for removal of radioactive corrosion products in RWCU. (author). 11 refs, 6 figs, 10 tabs.

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Record - 210

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03457381 AIX-24-027533; EDB-93-036257

Title: Use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Corporate Source: International Atomic Energy Agency, Vienna (Austria)

Conference Title: Final research co-ordination meeting on the use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Conference Location: Rez (Czechoslovakia) Conference Date: 4-8 Nov 1991

ISSN: 1011-4289

Publication Date: Nov 1992 ([189] p)

Report Number(s): IAEA-TECDOC-675 CONF-9111297--

Order Number: TI93618000

Language: English

Availability: OSTI; NTIS (US Sales Only); INIS

Abstract: This document presents the results of a four year Co-ordinated Research Programme (CRP) on the "Use of Inorganic Sorbents for Treatment of Liquid Radioactive Waste and Backfill of Underground Repositories" (1987-1991). Many countries have research programmes aiming at developing processes which would provide efficient and safe concentration of radionuclides in waste streams into solid materials which could then be reliably immobilized into forms suitable for long term storage or disposal. Use of inorganic sorbents for this purpose is very attractive because of their resistance to radiation and chemical attack, strong affinity for one or more radionuclides, their compatibility with likely immobilization matrices and their availability at low cost. According to the fundamental multibarrier concept for disposal of radioactive waste, backfill material is one of the important engineered barriers. Inorganic materials such as clays, naturally occurring zeolites (clinoptilolite, modenite and chabasite) are promising backfill materials. Research in technical uses of inorganic material applications was covered within the framework of the Co-ordinated Research Programme reported in this technical document. Final contributions by participants at the last Research Co-ordination Meeting held in Rez, Czechoslovakia, from 4 to 8 November 1991, are presented here. Refs, figs and tabs.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03457379 AIX-24-027536; EDB-93-036255

Title: Use of zeolites as sorbents for the removal of long-lived radionuclides from aqueous wastes

Author(s): Suarez, G.C.; Catasus, J.D.; Haza, U.J.; Alfonso, A.P.

(Centro de Estudios Aplicados al Desarrollo Nuclear (CEADEN), La Habana (Cuba))

Title: Use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Corporate Source: International Atomic Energy Agency, Vienna (Austria)

Conference Title: Final research co-ordination meeting on the use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Conference Location: Rez (Czechoslovakia) Conference Date: 4-8 Nov 1991

ISSN: 1011-4289

Publication Date: Nov 1992 p 107-119 ([189] p)

Report Number(s): IAEA-TECDOC-675 CONF-9111297--

Order Number: DE93618000

Language: English

Availability: OSTI; NTIS (US Sales Only); INIS

Abstract: The influence of the reaction time, the temperature, the concentration of precipitating agents and the agitation speed on the decontamination factor (DF) for [sup 60]Co, [sup 90]Sr/Y and [sup 144]Ce radionuclides in the chemical treatment of simulated waste solutions were studied. From the results obtained, a laboratory scale design was made to decontaminate radioactive wastes containing [sup 60]Co and [sup 144]Ce through the combination of chemical treatment and the sorption on to sodium enriched zeolite. Reduction of activity levels to below the specified limit concentrations in water can be achieved by the application of the combined technologies in the treatment plant. (author). 27 refs, 13 tabs.

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Record - 212

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03457368 NOV-93-006119; INS-93-004965; EDB-93-036244

Title: Classification of hazardous and mixed waste

Author(s): Jantzen, C.M.; Pickett, J.B. (Savannah River Lab., Aiken, SC

(United States)); Ramsey, W.G. (Clemson Univ., SC (United States).

Dept. of Ceramic Engineering)

Title: Proceedings of emerging technologies for hazardous waste management

Author(s)/Editor(s): Tedder, D.W. (School of Chemical Engineering, Georgia
Inst. of Technology, Atlanta, GA (United States))

Conference Title: American Chemical Society (ACS) special symposium on
emerging technologies in hazardous waste management

Conference Location: Atlanta, GA (United States) Conference Date: 21-23

Sep 1992

Publisher: Washington, DC (United States) American Chemical Society

Publication Date: 1992 p 353-356 (381 p)

Report Number(s): CONF-9209226--

Language: English

Availability: American Chemical Society, 1155 Sixteenth St. NW, Washington,
DC 20036 (United States)

Abstract: This paper reports on solidification of hazardous/mixed wastes into glass which is being examined at the Savannah River Site (SRS) for the following reasons: glass is the most environmentally acceptable waste form because hazardous species are chemically bonded in the glass; the Department of Energy Office of Technology Development (DOE/OTD) has taken the position that mixed waste needs to be stabilized to the highest level reasonably possible to ensure that the resulting waste forms will meet both current and future regulatory specifications; EPA has declared glass to be the Best Developed Available Technology (BDAT) for high-level radioactive waste; vitrification of hazardous/mixed wastes into glass can reduce waste volume by up to 97%; [gt]97% waste volume reduction can be achieved by blending waste streams during vitrification; glass formulations are flexible and easily accommodate process chemistry variation; waste pretreatment is minimal; low percent solids wastes should be evaporated or waste water treated to [approximately]50 wt% solids prior to vitrification to make the process more efficient; and new stirred melters combine the high production rates and high glass quality features of the high-level waste glass melters with low-cost, compact, simple maintenance features.

Record - 213

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03457308 AIX-24-027524; EDB-93-036184

Title: Use of aluminosilicate minerals for the removal of radionuclides and heavy metals from aqueous wastes by sorption and in combination with precipitation processes

Author(s): Klisuranov, G.S.; Gradev, G.; Stefanova, I.; Milusheva, A. (University of Mining and Geology, Sofia (Bulgaria). Inst. of Nuclear Research and Nuclear Energy)

Title: Use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Corporate Source: International Atomic Energy Agency, Vienna (Austria)

Conference Title: Final research co-ordination meeting on the use of inorganic sorbents for treatment of liquid radioactive waste and backfill of underground repositories

Conference Location: Rez (Czechoslovakia) Conference Date: 4-8 Nov 1991

ISSN: 1011-4289

Publication Date: Nov 1992 p 15-30 ([189] p)

Report Number(s): IAEA-TECDOC-675 CONF-9111297--

Order Number: DE93618000

Language: English

Availability: OSTI; NTIS (US Sales Only); INIS

Abstract: The sorption characteristics of aluminosilicate minerals from Bulgarian locations in natural and modified forms have been studied. The possible application of mineral sorbents (zeolites and vermiculites) for decontamination of aqueous waste containing radionuclides (Cs-137, Sr-90, Co-60, Ag-110m, Tl-204, Ce-144, Ru-106), as well as for decontamination of waste waters containing lead, cadmium, zinc or silver, were studied. The static exchange capacity of clinoptilolite and vermiculite in different cationic forms has been determined together with the influence of different competitive ions on the capacity. The thermodynamics of ion exchange on the sodium form of clinoptilolite has been studied and the distribution coefficients and the diffusion coefficients for the specified radionuclides were determined. The potential of combining processes for the treatment of wastes of complex composition has been examined by applying precipitation and sorption processes under static or dynamic conditions. The decontamination coefficients for caesium, strontium, cobalt manganese cerium and zirconium were determined at different values of pH and different doses of precipitates and sorbents. (author). 19 refs, 5 figs, 12 tabs.

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Record - 214

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03438768 NOV-92-046102; EDB-93-017644

Title: Ion-exchange processss for low-level liquid waste treatment

Author(s): Campbell, D.O.; Lee, D.D.; Dillow, T.A. (Oak Ridge National
Lab., TN (United States))

Title: Proceedings of SPECTRUM '90

Conference Title: Spectrum '90: American Nuclear Society (ANS)

international meeting on radioactive waste technologies,
decontamination, and hazardous wastes

Conference Location: Knoxville, TN (United States) Conference Date: 30
Sep - 4 Oct 1990

Publisher: La Grange Park, IL (United States) American Nuclear Society

Publication Date: 1990 p 499-500 (505 p)

Report Number(s): CONF-900977--

Contract Number (DOE): AC05-84OR21400

ISBN: 0-89448-154-1

Language: English

Availability: American Nuclear Society, 555 North Kensington Ave., La
Grange Park, IL 60525 (United States)

Abstract: Many low-level liquid waste (LLLW) streams generated in a variety
of radiochemical research and processing programs at the Oak Ridge
National Laboratory (ORNL) are collected in two waste systems. This
paper reports on an experimental program under way to develop improved
methods for decontaminating these two waste compositions from the major
radionuclides, [sup 137]Cs, [sup 134]Cs, [sup 90]Sr, and [sup 60]Co,
and also to treat some specific wastes of widely varying composition
and activity at the point of generation. The concept underlying this
work is that there is a net benefit if the radioactivity can be
selectively removed and concentrated into a very small volume, thereby
decontaminating the bulk of the waste volume (water and dissolved
solids) to a sufficiently low activity that it can be disposed of or
managed at a much lower total cost. At the same time, superior
packaging and disposal methods can be used for the concentrate because
of its small volume.

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Record - 215

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03436915 NOV-93-001023; INS-93-001635; EDB-93-015791

Title: A proposed strategy for upgrade of the ORNL process wastewater treatment plant

Author(s): Kent, T.E.; Robinson, S.M.; Scott, C.B. (Martin Marietta Energy Systems, Inc., Oak Ridge, TN (United States))

Title: Proceedings of the international meeting on nuclear and hazardous waste management

Conference Title: Spectrum '90: American Nuclear Society (ANS) international meeting on radioactive waste technologies, decontamination, and hazardous wastes

Conference Location: Knoxville, TN (United States) Conference Date: 30 Sep - 4 Oct 1990

Publisher: La Grange Park, IL (United States) American Nuclear Society

Publication Date: 1990 p 491-495 (510 p)

Report Number(s): CONF-900977--

ISBN: 0-89448-157-6

Language: English

Availability: American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 (United States)

Abstract: This paper reports on an approach to the upgrade of the radiological Process Wastewater Treatment Plant (PWTP) at Oak Ridge National Laboratory (ORNL), which has been developed and that, if adopted, will result in significant cost reductions and improved water quality. The strategy described in this report satisfies the short-term upgrade needs of the PWTP and ultimately results in replacement of existing PWTP softening/ion-exchange technology with a zeolite molecular sieve treatment system for removal of radioactive contaminants from process wastewater. Use of zeolites will improve wastewater quality while reducing operating and disposal costs. The zeolite system would be constructed adjacent to the site now occupied by the Non-Radiological Process Wastewater Treatment Plant (NRWTP), thereby consolidating all process wastewater treatment systems at one location.

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Record - 216

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03434083 NOV-93-001015; INS-93-001629; EDB-93-012959

Title: Biological treatment of Hanford groundwater Pilot-scale process development

Author(s): Brouns, T.M.; Koegler, S.S.; Fredrickson, J.K. (Pacific Northwest Lab., Richland, WA (United States))

Title: Proceedings of the international meeting on nuclear and hazardous waste management

Conference Title: Spectrum '90: American Nuclear Society (ANS) international meeting on radioactive waste technologies, decontamination, and hazardous wastes

Conference Location: Knoxville, TN (United States) Conference Date: 30 Sep - 4 Oct 1990

Publisher: La Grange Park, IL (United States) American Nuclear Society

Publication Date: 1990 p 451-456 (510 p)

Report Number(s): CONF-900977--

ISBN: 0-89448-157-6

Language: English

Availability: American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 (United States)

Abstract: Liquid wastes containing radioactive, hazardous, and regulated chemicals have been generated throughout the 40 years of operations on the Hanford Site. Some of these wastes were discharged to the soil column, and many of the waste components, including nitrate (NO₃⁻) and carbon tetrachloride (CCl₄) have been detected in the Hanford groundwater. This paper describes a biological process developed by researchers at Pacific Northwest Laboratory (PNL) for remediation of contaminated groundwater. For this work, laboratory screening tests were used to select an indigenous microbial consortium from Hanford groundwater that is capable of both NO₃⁻ and CCl₄ degradation. Reaction rates were obtained from the results of bench-scale kinetics tests. A pilot-scale treatment system was designed, constructed, and tested with simulated groundwater to ensure operability and confirm rates of degradation. A treatment demonstration with actual groundwater from the Hanford Site is scheduled for late Fiscal Year (FY) 1990 and FY 1991.

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Record - 217

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03412901 EDB-92-175658

Title: Evaluation of Weldon Spring mixed waste placement alternatives

Author(s): French, J.B.; Thiers, G.R.; Repond, D.W. (Morrison-Knudson
Environmental Services, San Francisco, CA (United States))

Title: Proceedings of Research and Development 92

Conference Title: 2. national research and development conference on the
control of hazardous materials

Conference Location: San Francisco, CA (United States) Conference Date:
4-6 Feb 1992

Publisher: Greenbelt, MD (US) Hazardous Materials Control Resources Inst.

Publication Date: 1992 p 84-88 (348 p)

Report Number(s): CONF-920221--

Language: In English

Availability: Hazardous Materials Control Research Institute, 7237 Hanover
Parkway, Greenbelt, MD 20770-3602 (United States)

Abstract: More than 1,000,000 ydsup 3 of radioactively- and
chemically-contaminated (mixed) wastes are currently present at the
Weldon Spring Site near St. Charles, Missouri. The site is to be
remediated to protect human health and the environment. Highly
contaminated sludges and soils may be treated by vitrification or
chemical stabilization/solidification (CSS). Other major waste forms
include soils, gravels, rock rubble, structural materials (steel,
concrete and roofing), chemical processing equipment and piping. These
materials will be placed intact, size-reduced or shredded/crushed. The
vitrified and CSS waste products will be placed together with the other
waste forms in one or two disposal cells on the site. Care is needed to
construct a stable disposal cell.

Record - 218

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03410344 AIX-23-078606; EDB-92-173101

Title: Prediction of flow and drawdown for the site characterization and validation site in the Stripa mine

Author(s)/Editor(s): Long, J.; Mauldon, A.; Nelson, K.; Martel, S.; Fuller, P.; Karasaki, K. (Earth Sciences Division LBL, University of California, Berkeley, CA (United States))

Corporate Source: Swedish Nuclear Fuel and Waste Management Co., Stockholm (Sweden)

Publication Date: Jan 1992 (130 p)

Report Number(s): STRIPA-TR-92-05

Order Number: DE93603590

Language: In English

Availability: OSTI; NTIS; INIS

Abstract: Geophysical and hydrologic data from a location in the Stripa mine in Sweden (Site Characterization and Validation (SCV) block) has been used to create a series of models for flow through the fracture network. The models can be characterized as equivalent discontinuum models. Equivalent discontinuum models are derived starting from a specified lattice or 'template'. An inverse analysis called 'simulated annealing' is used to make a random search through the elements of the lattice to find a configuration that can reproduce the measured responses. Evidence at Stripa points to hydrology dominated by fracture zones. These have been identified and located. Lattice templates were arranged to lie on the fracture zones identified by Black and Olsson. Goal of this project was to build a fracture flow model based on an initial data set, and use this model to make predictions of the flow behavior during a new test. Then given data from the new test, predict a second test, etc. The first data set was an interference test called C1-2. Both a two-dimensional and a three-dimensional model were annealed to the C1-2 data and use this model to predict the behavior of the Simulated Drift Experiment (SDE). The SDE measured the flow into, and drawdown due to reducing the pressure in a group of 6 parallel boreholes. Then both the C1-2 and SDE data were used to predict the flow into a drawdown due to an excavation, the Validation Drift (VD), made through the boreholes. Finally, all the data was used to predict the hydrologic response to opening another hole, T1. Annealing to the C1-2 test gave an excellent prediction of the SDE. The VD effects were dominated by near-field physics that were not predictable. However, the calculations and measurements could be used to postulate that a dramatic decrease in hydraulic conductivity near the drift was due to degassing of nitrogen as the inflowing water was depressurized.

Record - 219

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03402360 NOV-92-043300; INS-92-032835; EDB-92-165117

Title: Diffusion of radionuclides in compacted bentonite

Author(s): Choi, J.W.; Jung, C.H.; Chun, K.S.; Park, H.S. (Korea Atomic Energy Research Inst., P.O. Box 7, Daeduk-Danji, Daejun (KR)); Whang, J.H. (Kyunghee Univ., Kiheung-Eup, Yongin-Kun, Kyunggi-Do (KR)); Lee, B.H. (Hanyang Univ., Hangdang-Dong, Sungdong-Ku, Seoul (KR))

Title: Proceedings of high level radioactive waste management

Conference Title: 3. international high level radioactive waste management
(IHLRWM) conference

Conference Location: Las Vegas, NV (United States) Conference Date: 12-16
Apr 1992

Publisher: La Grange Park, IL (United States) American Nuclear Society

Publication Date: 1992 p 2278-2283 (2425 p)

Report Number(s): CONF-920430--

ISBN: 0-87262-891-4

Language: In English

Availability: American Nuclear Society, 555 North Kensington Ave., La
Grange Park, IL 60525 (United States)

Abstract: In this paper the diffusion of Sr-85, Cs-137, Co-60 and Am-241 in compacted bentonite of which the major constituent was found to be Ca-bentonite is studied, suing a diffusion cell unit in which diffusion takes place axially from the center of cylindrical bentonite sample body. The effects of compaction density and heat-treatment on diffusion are analyzed. And the diffusion mechanism of cationic radionuclide is also analyzed by evaluating the measured diffusivity of anion Cl-36. The apparent, diffusivities of Sr-85, Cs-137, Co-60 and Am-241 are measured 1.07 times 10^{sup} minus 11, 6.705 times 10^{sup} minus 13, 1.226 times 10^{sup} minus 13, and 1.310 times 10^{sup} minus 14 msup 2/sec, respectively. When the as pressed density of bentonite increased from 1.8 to 2.0 g/cmsup 3, the apparent diffusivity of Cs-137 decreased to a quarter of the lower densed one. The bentonite samples heat-treated up to 150degrees C showed little change in diffusivity. Comparing the pore diffusivity with the surface diffusivity, both obtained from experimental results, the surface diffusion occurring due to the concentration gradient of radionuclide sorbed on the solid phase was found to dominate greatly in total transport process.

Record - 220

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03402179 NOV-92-041155; EDB-92-164936

Title: Treatment of RCRA hazardous/radioactive mixed waste

Author(s): Redmon, M.E.; Williams, M.J.; Liedle, S.D. (Bechtel National, Inc., Oak Ridge, TN (US))

Title: Proceedings of the third international conference on new frontiers for hazardous waste management

Conference Title: 3. international conference on new frontiers for hazardous waste management

Conference Location: Pittsburgh, PA (United States) Conference Date: 10-13 Sep 1989

Publisher: Cincinnati, OH (United States) Environmental Protection Agency

Publication Date: 1989 p 564-571 (604 p)

Report Number(s): CONF-890927--

Language: In English

Availability: Environmental Protection Agency, 26 W. St. Clair St., Cincinnati, OH 45268 (United States)

Abstract: This paper describes a treatment process for a radioactive/chemical mixed waste sludge. The waste, which was generated during remedial action under the Department of Energy's (DOE) Formerly Utilized Sites Remedial Action Program (FUSRAP), was designated as mixed because of its uranium content (up to 14,000 picoCuries per gram) and the presence of chemical constituents which caused the waste material to fail the Resource Conservation and Recovery Act (RCRA) characteristic test for ignitability.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03377398 EDB-92-140155

Title: Preliminary investigation of water coagulation characteristics as
affects reactor effluent radionuclides

Author(s)/Editor(s): Frymier, J.W.

Corporate Source: General Electric Co., Richland, WA (United States).

Hanford Atomic Products Operation

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Publication Date: 15 Apr 1965 (25 p)

Report Number(s): RL-REA-922

Order Number: DE92019151

Contract Number (DOE): AC06-76RL01830

Language: In English

Availability: OSTI; NTIS (US Sales Only); GPO Dep.

Abstract: Several theories have been advanced regarding the structure and characteristics of the aluminum hydroxide molecule when produced from alum in the water treatment process. The Water Treatment Task Force initiated this test to exploit a theory that increased adsorption of soil-leached elements, present in Columbia River water, by the floc particle would occur when the precipitate was formed in its terminal pH state. This report discusses a half-plant test which was initiated at E Reactor Plant wherein the total sulfuric acid for pH correction was added with the alum to evaluate its affect on reactor effluent radionuclides.

222

Record - 222

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03365110 EDB-92-127867

Title: Evaluation of closure alternatives for the Building 3001 Storage
Canal at Oak Ridge National Laboratory, Oak Ridge, Tennessee

Corporate Source: Oak Ridge National Lab., TN (United States) Bechtel
National, Inc., Oak Ridge, TN (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Publication Date: Feb 1992 (82 p)

Report Number(s): ORNL/ER/Sub-87-99053/49

Order Number: DE92016615

Contract Number (DOE): AC05-84OR21400

Language: In English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: The Bldg. 3001 Storage Canal at ORNL is leaking approximately 400

gal of water per day. This report presents the Bechtel National Inc.

(BNI) Team's evaluation of plans and presents recommendations for
interim closure alternatives to stop the release of radionuclides and
potential release of heavy metals into the environment. This is a
conceptual evaluation and does not include detailed engineering of
physical mitigation methods. The alternatives address only interim
closure measures and not final decommissioning of the canal.

223

Record - 223

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03354921 AIX-23-047317; EDB-92-117678

Title: Thermal recovery of lattice constant and strain in naturally-damaged
(Th,U)O sub 2

Author(s): Eron, R. (Technion-Israel Inst. of Tech., Haifa (Israel). Dept.
of Nuclear Engineering); Kimmel, G. (Technion-Israel Inst. of Tech.,
Haifa (Israel). Dept. of Materials Engineering); Eyal, Y.
(Technion-Israel Inst. of Tech., Haifa (Israel). Dept. of Chemistry)

Title: The Nuclear Societies of Israel 1990 joint meeting

Original Series Title: Transactions

Corporate Source: Israel Nuclear Society, Yavne (Israel) Israel Health
Physics Society (Israel) Israel Society of Nuclear Medicine (Israel)
Radiation Research Society of Israel (Israel) Israel Society of
Medical Physics (Israel)

Conference Title: 1990 joint meeting of the nuclear societies of Israel

Conference Location: Herzlia (Israel) Conference Date: 17-18 Dec 1990

v 16.

Publication Date: 1990 p 162-168 (294 p)

Report Number(s): INIS-mf-13212 CONF-9012148--

Order Number: DE92634863

Language: In English

Availability: OSTI; NTIS (US Sales Only); INIS

Abstract: One of the prominent options considered for long-term disposal of
spent nuclear reactor UOsub 2 and future ThOsub 2 fuels is direct
burial of unprocessed burnt fuel elements in deep underground
repositories. A potential hazard associated with burial of radioactive
wastes in geological strata is leaching of the contained radionuclides
by ground water and their subsequent transport and dispersion by the
water flow. Moreover, there is concern that accumulation of radiation
damage, caused by the intensive radioactive decay within the waste,
will significantly increase the leachability of the wasteforms. Of
particular importance is the atomic displacement damage created by
nuclear stopping of energetic particles. The present investigation is
concerned with long-term radiation effects from alpha decay in ancient
specimen of mineral thorianite, (Th,U)Osub 2. The mineral has been
subjected, since its formation, to radiation from the decay of sup
232Th, sup 238U, sup 235U and their many intermediate decay
products, and may be considered, therefore, as natural analog of UOsub
2 and Thsub 2 wastes. (author).

224

Record - 224

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03338788 EDB-92-101545

Title: Group 5. Treatment of off-spec products

Author(s): Brown, C.H.; Canon, R.M. (Oak Ridge National Lab., TN (United States))

Title: Proceedings of the workshop on radioactive, hazardous, and/or mixed waste sludge management

Author(s)/Editor(s): Lomenick, T.F. (ed.)

Corporate Source: Oak Ridge K-25 Site, TN (United States)

Conference Title: Workshop on radioactive, hazardous, and/or mixed wastes sludge management

Conference Location: Knoxville, TN (United States) Conference Date: 4-5 Dec 1990

Publication Date: Jan 1992 p 289-307 (363 p)

Report Number(s): CONF-901264--

Order Number: DE92012667

Language: In English

Availability: OSTI; NTIS; INIS

Abstract: This paper summarizes the findings of the Treatment of Off-spec Products Working Group which met at the Workshop on Radioactive, Hazardous, and/or Mixed Waste Sludge Management. Off-spec material is defined by the production operation. Sludge grouting operations can produce off-spec material via two time modes. The first mode is via bad product that is recognized in real time, i.e., as it is produced. A second category of waste is legacy material. This is old product that does not meet current storage/disposal guidelines and, therefore, must be treated in some fashion. Proposed solutions must, as a minimum, be attractive with regard to cost, regulatory compliance, process flexibility/simplicity, and conformance to existing waste packaging and processing facilities. Alternatives for processing off-spec products are selected based on the ability of the process to meet the above criteria. This report provides a synthesis of information on each issue and provides a case study for each of the five sites, including specific discussion of these issues.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03338783 EDB-92-101540

Title: Treatment of pond sludge at the Rocky Flats Plant

Author(s): Wienand, J.; Tyler, R. (Dept. of Energy - Rocky Flats Office, Golden, CO (United States)); Baldwin, C. (EG and G Rocky Flats Inc., Golden, CO (United States))

Title: Proceedings of the workshop on radioactive, hazardous, and/or mixed waste sludge management

Author(s)/Editor(s): Lomenick, T.F. (ed.)

Corporate Source: Oak Ridge K-25 Site, TN (United States)

Conference Title: Workshop on radioactive, hazardous, and/or mixed wastes sludge management

Conference Location: Knoxville, TN (United States) Conference Date: 4-5 Dec 1990

Publication Date: Jan 1992 p 35-40 (363 p)

Report Number(s): CONF-901264--

Order Number: DE92012667

Language: In English

Availability: OSTI; NTIS; INIS

Abstract: The treatment of low-level radioactive/hazardous materials sludges from five inactive solar evaporation settling ponds at the Rocky Flats Plant is discussed. The paper presents information on the following topics: history of the ponds; previous pond cleanout activities; current approach to the problem with respect to water management, sludge management, regulatory actions, and disposal; and future processing technology needs in the areas of polymer solidification, microwave solidification, joule-heated glass melters, and advanced technology incineration.

226

Record - 226

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03338782 EDB-92-101539

Title: The Hanford grout treatment facility

Author(s): Voogd, J.A. (Westinghouse Hanford Company, Richland (United States))

Title: Proceedings of the workshop on radioactive, hazardous, and/or mixed waste sludge management

Author(s)/Editor(s): Lomenick, T.F. (ed.)

Corporate Source: Oak Ridge K-25 Site, TN (United States)

Conference Title: Workshop on radioactive, hazardous, and/or mixed wastes sludge management

Conference Location: Knoxville, TN (United States) Conference Date: 4-5 Dec 1990

Publication Date: Jan 1992 p 19-34 (363 p)

Report Number(s): CONF-901264--

Order Number: DE92012667

Language: In English

Availability: OSTI; NTIS; INIS

Abstract: The paper describes the handling of low-activity radioactive/hazardous wastes at the Hanford grout treatment facility. The waste is being retrieved from underground single-walled tanks as part of environmental restoration efforts at the Hanford Reservation. Grout disposal issues include: role of barriers in waste disposal and time of compliance for ecosystem protection. Non-hazardous wastes from the campaign were successfully completed in 1989. Current status and plans for completion of the solidification of radioactive/hazardous wastes to meet Resource Conservation and Recovery Act landfill requirements are presented.

227

Record - 227

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03338779 EDB-92-101536

Title: Grout treatment facilities at DOE and other plants: Scope and objectives of the workshop

Author(s): Merriman, J.R. (Martin Marietta Energy Systems, Oak Ridge, TN (United States))

Title: Proceedings of the workshop on radioactive, hazardous, and/or mixed waste sludge management

Author(s)/Editor(s): Lomenick, T.F. (ed.)

Corporate Source: Oak Ridge K-25 Site, TN (United States)

Conference Title: Workshop on radioactive, hazardous, and/or mixed wastes sludge management

Conference Location: Knoxville, TN (United States) Conference Date: 4-5 Dec 1990

Publication Date: Jan 1992 p 3-4 (363 p)

Report Number(s): CONF-901264--

Order Number: DE92012667

Language: In English

Availability: OSTI; NTIS; INIS

Abstract: The host of the workshop on Radioactive, Hazardous, and Mixed Waste Sludge Management gives a brief explanation as to how the workshop originated. Problems encountered in applying for Resource Conservation and Recovery Act (RCRA) permits for 78,000 drums of sludge waste included finding many of the drums severely corroded and containing residual liquid in what was supposed to be a dry waste form. The root cause of the off-specification product and failing containers was not a single, clear-cut item. As a result of the investigation the concept developed of gathering representatives from other DOE sites to share experiences and solutions for managing sludge wastes. The goal of the workshop is to use the diverse expertise gathered to identify the important issues in managing waste sludges and recommend solutions to these issues.

Record - 228

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03338707 EDB-92-101464

Title: Processing saltstone from waste streams at the Savannah River Plant
Author(s): Thompson, D.G. (Westinghouse Savannah River Co., Aiken, SC
(United States))

Title: Proceedings of the workshop on radioactive, hazardous, and/or mixed
waste sludge management

Author(s)/Editor(s): Lomenick, T.F. (ed.)

Corporate Source: Oak Ridge K-25 Site, TN (United States)

Conference Title: Workshop on radioactive, hazardous, and/or mixed wastes
sludge management

Conference Location: Knoxville, TN (United States) Conference Date: 4-5
Dec 1990

Publication Date: Jan 1992 p 11-17 (363 p)

Report Number(s): CONF-901264--

Order Number: DE92012667

Language: In English

Availability: OSTI; NTIS; INIS

Abstract: The work being performed at the Saltstone Facility as part of the
Savannah River Site waste management program is described. The
Saltstone Facility permanently disposes of low-level radioactive
hazardous waste stored in H-Area tanks by mixing it with flyash, slag,
and cement. The resulting mixture is solidified in concrete volts as a
nonhazardous waste called saltstone. A brief history of the operation,
the technical basis for the solidification process, a description of
the quality control and verification procedures, and an overview of the
project status and compliance efforts are provided.

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Record - 229

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03335841 AIX-23-042658; EDB-92-098598

Title: The dispersal of radionuclides in the sea

Author(s): Woodhead, D.S.; Pentreath, R.J. (Ministry of Agriculture, Fisheries and Food, Lowestoft (United Kingdom). Directorate of Fisheries Research)

Title: The treatment and handling of wastes

Author(s)/Editor(s): Bradshaw, A.D. (Liverpool Univ. (United Kingdom)); Southwood, R. (Oxford Univ. (United Kingdom)); Warner, F. (Essex Univ., Colchester (United Kingdom)) (eds.)

Original Series Title: Technology in the Third Millenium

Corporate Source: Royal Society, London (United Kingdom)

Publisher: London (United Kingdom) Chapman and Hall

Publication Date: 1992 p 131-152 (302 p)

ISBN: 0 412 39390 5

Language: In English

Abstract: This paper studies the process governing, the distribution of

artificial radionuclides from Sellafield, in Cumbria, to the Irish Sea.

Their use in tracing and quantifying inter-related physical, chemical and biological processes in the marine environment is stressed.

Discharges are quantified and the environmental impacts and socio-economic factors related to the discharges are discussed. (UK).

Record - 230

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03332914 AIX-23-044542; EDB-92-095671

Title: The treatment and handling of wastes

Author(s)/Editor(s): Bradshaw, A.D. (Liverpool Univ. (United Kingdom));

Southwood, R. (Oxford Univ. (United Kingdom)); Warner, F. (Essex Univ., Colchester (United Kingdom)) (eds.)

Original Series Title: Technology in the Third Millenium

Corporate Source: Royal Society, London (United Kingdom)

Publisher: London (United Kingdom) Chapman and Hall

Publication Date: 1992 (302 p)

ISBN: 0 412 39390 5

Language: In English

Abstract: The Treatment and Handling of Wastes provides an authoritative account of the environmental problems posed by the different types of waste material, the current state of technology for dealing with them, and what science and technology promise for the future. The book opens by providing a background to the general ecological, economic and practical ways of handling the wastes produced by human activity. (author).

Record - 231

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03299034 INS-92-007554; EDB-92-061791

Title: Treatment and discharge to a POTW: The Stringfellow experience

Author(s): Ullensvang, B.J. (Environmental Protection Agency, San

Francisco, CA (United States)); Singh, U.P. (CH2M HILL, Emeryville, CA
(United States))

Source: Water Environment and Technology (United States) v 2:1. Coden:

WAETE ISSN: 1044-9493

Publication Date: Jan 1990 p 36-43

Language: In English

Abstract: This paper describes the contamination of the area surrounding the Stringfellow hazardous waste site in California. The disposal facility was in operation from 1956 to 1972. After heavy metals, PCBs, pesticides, organic pollutants, sulfates and chlorides had migrated from the area it was declared a priority site eligible for remedial action under CERCLA. Radioactivity was found in water samples in some areas necessitating the use of bottled water. The treatment and disposal processes as well as treatment monitoring are described in detail.

Record - 232

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03284549 EDB-92-047306

Title: Effluent testing for the Oak Ridge Toxic Substances Control Act
mixed waste incinerator emissions tests of January 16 and 18, 1991

Author(s)/Editor(s): Shor, J.T. (Oak Ridge National Lab., TN (United
States)); Bostick, W.D.; Coroneos, A.C.; Bunch, D.H.; Gibson, L.V.;
Hoffmann, D.P.; Shoemaker, J.L. (Oak Ridge K-25 Site, TN (United
States))

Corporate Source: Oak Ridge K-25 Site, TN (United States)

Sponsoring Organization: DOE USDOE, Washington, DC (United States)

Publication Date: Feb 1992 (52 p)

Report Number(s): K/QT-407

Order Number: DE92008519

Contract Number (DOE): AC05-84OT21400

Language: In English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: On January 16 and 18, 1991, special emissions tests were conducted at the Oak Ridge, K-25 Site Toxic Substances Control Act (TSCA) Incinerator. Both tests were approximately 6 h long and were performed at TSCA temperatures (1200degreesC, secondary combustion chamber (SSC)). Liquid feed and effluent samples were collected every 30 min. A filter was used to collect particles from stack gases to study morphology and composition during the first test. Isokinetic air samples were also taken during the second test. Metals emissions from the second test were evaluated using the Environmental Protection Agency (EPA) Method 5 sampling train. The aqueous waste was collected and fed in batches to the Central Neutralization Facility (CNF), where it was treated by iron coprecipitation and polymer flocculation and data were collected. In the first test (1-16-91), the aqueous and organic wastes were fed directly to the kiln or primary combustion chamber (PCC). In the second test (1-18-91), the remaining organic waste from the first test was fed into the SSC, and other organic waste was fed into the PCC. One objective of the two tests was to determine if feeding the same organic waste into the two combustion chambers made a difference in a partitioning of uranium and other metals. No evaluation of radionuclides other than uranium was made. The partition coefficient of uranium to the quench water was 0.3 on January 16 and 0.35 on January 18; so directing Tank 306A to the feed to the primary vs the secondary combustion chamber appears to have made little difference. The partition coefficient of uranium to the stack on January 18 was 0.0039. 5 refs., 15 figs., 26 tabs.

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Record - 233

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03275934 EDB-92-038691

Title: Mixed-waste treatment with a mediated electrochemical process

Author(s): Gray, L.W.; Hickman, R.G.; Chiba, Z. (Lawrence Livermore
National Lab., CA (United States))

Conference Title: Annual meeting of the American Nuclear Society (ANS)

Conference Location: Orlando, FL (United States) Conference Date: 2-6 Jun
1991

Source: Transactions of the American Nuclear Society (United States) v 63

Coden: TANSA ISSN: 0003-018X

Publication Date: 1991 p 69-70

Report Number(s): CONF-910603--

Language: In English

Abstract: The US Department of Energy (DOE) probably has the largest and most diverse inventory of mixed wastes in the country. These wastes contain radioactive wastes in combination with chemically hazardous wastes such as organic solvents or toxic heavy metals. At present, there are no permitted processes for mixed-waste treatment. The DOE has taken a very aggressive proactive position with regard to its responsibilities in the area of environmental protection in general, so the accumulated mixed wastes are prime targets for the development of some creative processing technologies. Consequently, DOE facilities have active programs to develop one or more processes that will be effective and will be permitted by the various regulatory agencies that oversee these activities. The process described in this paper is intended to convert mixed waste containing toxic organic compounds (not heavy metals) to ordinary radioactive waste, which is treatable. The process achieves its goal by oxidizing hydrocarbons to CO₂ and H₂O. Other atoms that may be present in the toxic organic generally are converted to nonhazardous anions such as sulfate, phosphate, and chloride. This chemical conversion is performed at conditions of temperature and pressure that are just moderately above ambient conditions. Gaseous hydroxides and oxyhydroxides that are formed by many radionuclides during incineration cannot form in this process.

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Record - 234

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03272980 GRA-92-42697; EDB-92-035737

Title: Radionuclide removal

Author(s)/Editor(s): Sorg, T.J.

Corporate Source: Environmental Protection Agency, Cincinnati, OH (United States). Drinking Water Research Div.

Publication Date: 1991 (13 p)

Report Number(s): PB-92-121284/XAB

Note: Pub. in AWWA Seminar Proceedings, Cincinnati, OH., June 17-21, 1990, p113-123.

Language: In English

Availability: NTIS

Abstract: The U.S. Environmental Protection Agency proposed new and revised regulations on radionuclide contaminants in drinking water in June 1991. During the 1980's, the Drinking Water Research Division, USEPA conducted a research program to evaluate various technologies to remove radium, uranium and radon from drinking water. The research consisted of laboratory and field studies conducted by USEPA, universities and consultants. The paper summarizes the results of the most significant projects completed. General information is also presented on the general chemistry of the three radionuclides. The information presented indicates that the most practical treatment methods for radium are ion exchange and lime-soda softening and reverse osmosis. The methods tested for radon are aeration and granular activated carbon and the methods for uranium are anion exchange and reverse osmosis.

Record - 235

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03247482 NOV-91-025244; EDB-92-010239

Title: Treatment of gaseous effluents

Author(s)/Editor(s): Goossens, W.R.A.; Eichholz, G.G.

Publisher: New York, NY (USA) Harwood Academic Pub.

Publication Date: 1990 (480 p)

ISBN: 3-7186-0525-2

Language: In English

Availability: Harwood Academic Pub., P.O. Box 786, Cooper Station, New York, NY 10276 (USA)

Abstract: This book covers the handling of gaseous or airborne waste. It begins with a general overview and proceeds to cover specifics such as radioactive aerosols, iodine isotopes, nitrogen oxide, tritium, short-lived noble gases, carbon-14, and semivolatiles.

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Record - 236

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03224566 NOV-91-017281; EDB-91-152002

Title: Lime treatment of liquid waste containing heavy metals,
radionuclides and organics

Author(s): DuPont, A. (National Lime Association, Arlington, VA (US))

Title: Hazardous materials control

Publisher: Silver Spring, MD (USA) Hazardous Materials Control Research
Institute

Publication Date: 1990 p 29-35 (103 p)

Language: In English

Availability: Hazardous Materials Control Research Institute, 9300 Columbia
Blvd., Silver Spring, MD 20910 (USA)

Abstract: This paper reports on lime treatment of liquid waste containing
heavy metals, radio nuclides and organics. Lime is wellknown for its
use in softening drinking water the treatment of municipal wastewaters.
It is becoming important in the treatment of industrial wastewater and
liquid inorganic hazardous waste; however, there are many questions
regarding the use of lime for the treatment of liquid hazardous waste.

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Record - 237

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03220897 NLM-91-22842; INS-91-028488; EDB-91-148333

Title: The application of biotechnology to the treatment of wastes produced from the nuclear fuel cycle: Biodegradation and bioaccumulation as a means of treating radionuclide-containing streams

Author(s): Macaskie, L.E. (University of Oxford (England))

Source: CRC Critical Reviews in Biotechnology (United States) v 11:1.

Coden: CRBTE ISSN: 0738-8551

Publication Date: 1991 p 41-112

Language: In English

Abstract: Recent concerns on the radiotoxicity and longevity of nuclides have prompted the development of new technologies for their removal from wastes produced from nuclear power programs and nuclear fuel reprocessing activities. Alongside developments from traditional chemical treatment processes, interest has also centered on the application of biotechnology for efficient waste treatment. Many biological techniques have relied on empirical approaches in simple model systems, with scant regard to the nature and volume of actual target wastes; such considerations may limit the application of the new technologies in practice. This review aims to identify some of the likely problems, to discuss the various approaches under current consideration, and to evaluate ways in which either the target waste or the detoxifying biomass may be modified or presented for the most efficient treatment. 278 references.

Record - 238

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03204560 EDB-91-131996

Title: Regionalization as a strategy for management of low-level and mixed wastes in the DOE system

Author(s): Bradford, J.D.; Garcia, E.C.; Gillins, R.L. (Idaho National Engineering Lab., Idaho Falls (USA))

Title: Proceedings of the tenth annual DOE low-level waste management conference. Session 4: Waste treatment minimization

Corporate Source: EG and G Idaho, Inc., Idaho Falls, ID (United States)

Conference Title: 10. annual Department of Energy (DOE) low-level waste management conference

Conference Location: Denver, CO (United States) Conference Date: 30 Aug - 1 Sep 1988

Publication Date: Dec 1988 p 114-119 (119 p)

Report Number(s): CONF-880839-Ses.4

Order Number: DE89005582

Language: In English

Availability: OSTI

Abstract: The Department of Energy has been routinely performing low-level waste volume reduction and/or stabilization treatment at various sites for some time. In general, treatment is performed on waste generated onsite. Disposal is also usually performed onsite since most DOE sites have their own LLW disposal facilities. The DOE initiated studies to evaluate strategies for treatment, storage, and disposal of hazardous and mixed wastes covered in the Resource Conservation and Recovery Act (RCRA) and to ensure that DOE sites are in compliance with RCRA. These studies recommend regionalization as the most cost-effective solution to the treatment and disposal of hazardous and mixed wastes. The DOE's Defense Low-Level Waste Management Program conducted an additional survey of DOE sites to evaluate the status of one specific treatment method, incineration, at these sites. This study included facilities currently in use or intended for treatment of low-level and mixed wastes. A summary of the findings is presented in this paper.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03194880 EDB-91-122316

Title: Organic contaminant release from a mixed waste disposal site: A computer simulation study of transport through the vadose zone and site remediation

Author(s): Baca, R.G.; Walton, J.C.; Rood, A.S.; Otis, M.D. (Idaho National Engineering Lab., Idaho Falls (USA))

Title: Proceedings of the tenth annual DOE low-level waste management conference. Session 2: Site performance assessment

Corporate Source: EG and G Idaho, Inc., Idaho Falls, ID (United States)

Conference Title: 10. annual Department of Energy (DOE) low-level waste management conference

Conference Location: Denver, CO (United States) Conference Date: 30 Aug - 1 Sep 1988

Publication Date: Dec 1988 p 113-125 (161 p)

Report Number(s): CONF-880839-Ses.2

Order Number: DE89005580

Language: In English

Availability: OSTI

Abstract: Migration of organic contaminants from mixed waste disposal sites is emerging as a increasingly significant environmental problem.

Organic contaminants, particularly in the vapor phase, can pose a health hazard to workers in the vicinity of the disposal site and can cause contamination of the underlying aquifer. Volatile organic chemicals such as carbon tetrachloride, chloroform, and trichloroethylene are frequently encountered at waste sites. These chlorinated hydrocarbons are relatively common chemicals and widely used as industrial solvents. Problems with organic vapors have been noted at waste disposal sites at a number of US Department of Energy (DOE) facilities. At the Idaho National Engineering Laboratory, for example, problems with organic vapors (Laney, et al., 1988) have occurred at the Radioactive Waste Management Complex (RWMC). Analyses of soil-gas samples and groundwater samples indicate that organic vapors are being emitted from disposal pits in the Subsurface Disposal Area (SDA) of the RWMC. The primary source of the organic vapor has been determined to be organic wastes that were disposed at the site in the mid-1960's. To address the organic problems at the RWMC, a multi-task activity was initiated. The first task involved a records search to determine the quantities and distribution of organic wastes. The second task consisted of a detailed soil-gas survey to identify the specific disposal areas that are producing the organic vapors.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03194752 EDB-91-122188

Title: Optimizing conditions for an accelerated leach test

Author(s): Pietrzak, R.F.; Fuhrmann, M.; Heiser, J.; Franz, E.M.;
Colombo, P. (Brookhaven National Lab., Upton, NY (USA))

Title: Proceedings of the tenth annual DOE low-level waste management
conference. Session 4: Waste treatment minimization

Corporate Source: EG and G Idaho, Inc., Idaho Falls, ID (United States)

Conference Title: 10. annual Department of Energy (DOE) low-level waste
management conference

Conference Location: Denver, CO (United States) Conference Date: 30 Aug -
1 Sep 1988

Publication Date: Dec 1988 p 94-105 (119 p)

Report Number(s): CONF-880839-Ses.4

Order Number: DE89005582

Contract Number (DOE): AC02-76CH00016

Language: In English

Availability: OSTI

Abstract: An accelerated leach test for low-level radioactive waste forms is being developed to provide, in a short time, data that can be extrapolated to long time periods. The approach is to provide experimental conditions that will accelerate leaching without changing the dominant release mechanism. Experimental efforts have focused on combining individual factors that have been observed to accelerate leaching. These include elevated temperature, increased leachant volume, and reduced specimen size. The response of diffusion coefficients to various acceleration factors have been evaluated and provide information on experimental parameters that need to be optimized to increase leach rates. Preliminary modeling using a diffusion mechanism (allowing for depletion) of a finite cylinder geometry indicates that during early portions of experiments (daily sampling intervals), leaching is diffusion controlled and more rapid than later in the same experiments (weekly or greater sampling intervals). For cement waste forms, this reduction in rate may be partially controlled by changes in physical structure and chemistry (sometimes related to environmental influences such as CO₂), but it is more likely associated with the duration of the sampling interval. By using a combination of mathematical modeling and by experimentally investigating various leach rate controlling factors, a more complete understanding of leaching processes is being developed. This, in turn, is leading to optimized accelerating conditions for a leach test.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03194724 EDB-91-122160

Title: Conversion of three mixed-waste streams

Author(s): Harmer, D.E.; Porter, D.L. (IT Corp., Knoxville, TN (USA));
Conley, C.W. (Aerojet Ordnance Tennessee, Jonesborough (USA))

Title: WATTec '90: Global competitiveness - managing technology

Conference Title: 17. annual WATTec technical conference and exhibition

Conference Location: Knoxville, TN (United States) Conference Date: 20-23
Feb 1990

Publisher: Knoxville, TN (US) WATTec

Publication Date: 1990 p 10-11 (78 p)

Report Number(s): CONF-900225-

Language: In English

Abstract: At the present time, commercial mixed waste (containing both radioactive and hazardous components) is not handled by any disposal site in this country. Thus, a generator of such material is faced with the prospect of separating or altering the nature of the waste components. A chemical or physical separation may be possible. However, if separation fails there remains the opportunity of chemically transforming the hazardous ingredients to non-hazardous substances, allowing disposal at an existing radioactive burial site. Finally, chemical or physical stabilization can be used as a tool to achieve an acceptable waste form lacking the characteristics of mixed waste. A practical application of these principles has been made in the case of certain mixed waste streams at Aerojet Ordnance Tennessee. Three different streams were involved: (1) lead and lead oxide contaminated with uranium, (2) mixed chloride salts including barium chloride, contaminated with uranium, and (3) bricks impregnated with the barium salt mixture. This paper summarizes the approach of this mixed-waste problem, the laboratory solutions found, and the intended field remediations to be followed. Mixture (1), above, was successfully converted to a vitreous insoluble form. Mixture (2) was separated into radioactive and non-radioactive streams, and the hazardous characteristics of the latter altered chemically. Mixture (3) was treated to an extraction process, after which the extractant could be treated by the methods of Mixture (2). Field application of these methods is scheduled in the near future.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03194703 EDB-91-122139

Title: Saltstone processing startup at the Savannah River Plant

Author(s): Wilhite, E.L.; Langton, C.A.; Sturm, H.F.; Hooker, R.L.;
Occhipinti, E.S. (E.I. du Pont de Nemours and Co., Aiken, SC (USA))

Title: Proceedings of the tenth annual DOE low-level waste management
conference. Session 4: Waste treatment minimization

Corporate Source: EG and G Idaho, Inc., Idaho Falls, ID (United States)

Conference Title: 10. annual Department of Energy (DOE) low-level waste
management conference

Conference Location: Denver, CO (United States) Conference Date: 30 Aug -
1 Sep 1988

Publication Date: Dec 1988 p 38-55 (119 p)

Report Number(s): CONF-880839-Ses.4

Order Number: DE89005582

Contract Number (DOE): AC09-76SR00001

Language: In English

Availability: OSTI

Abstract: High-level nuclear wastes are stored in large underground tanks
at the Savannah River Plant. Processing of this waste in preparation
for ultimate disposal will begin in 1988. The waste will be processed
to separate the high-level radioactive fraction from the low-level
radioactive fraction. The separation will be made in existing waste
tanks by a process combining precipitation, adsorption, and filtration.
The high-level fraction will be vitrified into borosilicate glass in
the Defense Waste Processing Facility (DWPF) for permanent disposal in
a federal repository. The low-level fraction (decontaminated salt
solution) will be mixed with a cementitious slag-flyash blend. The
resulting wasteform, saltstone, will be disposed of onsite by
emplacement in an engineered facility. Waste properties, disposal
facility details, and wasteform characteristics are discussed. In
particular, details of saltstone processing, focusing on experience
obtained from facility startup, are presented.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03149955 NOV-91-004225; INS-91-016619; EDB-91-087391

Title: Treatment and disposal options for a heavy metals waste containing soluble technetium-99

Author(s): Bostick, W.D.; Shoemaker, J.L.; Osborne , P.E.; Evans-Brown, B. (Oak Ridge Gaseous Diffusion Plant, Martin Marietta Energy Systems, Inc., Oak Ridge, TN (US))

Title: Emerging technologies in hazardous waste management

Author(s)/Editor(s): Tedder, D.W. (Georgia Institute of Technology, GA (US)); Pohland, F.G. (Univ. of Pittsburgh, PA (US))

Conference Title: Symposium on emerging technologies for hazardous waste treatment

Conference Location: Atlanta, GA (USA) Conference Date: 1-4 May 1989

Publisher: Washington, DC (USA) American Chemical Society

Publication Date: 1990 p 345-367 (402 p)

Report Number(s): CONF-890575--

Contract Number (DOE): AC05-84OR21400

ISBN: 0-8412-1747-5

Language: In English

Availability: American Chemical Society, 1155 Sixteenth St. NW, Washington, DC 20036 (USA)

Abstract: Various equipment decontamination and uranium recovery operations at the Portsmouth gaseous diffusion plant generate a raffinate waste stream characterized by toxic heavy metals, high concentrations of nitric acid, and low levels of radioactive nuclides (²³⁵U and ⁹⁹Tc). Dilution and adjustment of solution pH to a value of 8.2 to 8.5 precipitates heavy metals that can be hydrolyzed. The precipitant is concentrated by paper filtration to yield a filter cake heavy metals sludge (HMS) and HMS filtrate. The HMS fraction may be incorporated into cement-based grout containing ground blast furnace slag to reduce the mobility of its toxic and radioactive components.

Sorption of soluble mercury, pertechnetate, and nitrate anions from the HMS filtrate was tested using organic resins and inorganic sorbents.

Removal of Hg and ⁹⁹Tc by iron filings is efficient and economical, generating a small volume of spent sorbent amenable to co-disposal with HMS in a grout waste form, but is slow. For more rapid sorption, poly-4-vinylpyridine resin is very effective for the removal of soluble ⁹⁹Tc with little uptake of interfering anions at near-neutral influent pH values.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
03133414 NOV-91-004131; INS-91-014976; EDB-91-070849

Title: Behavior and removal of organic species in the Savannah River Plant effluent treatment facility

Author(s): Oblath, S.B.; Georgeton, G.K. (Savannah River Lab., Aiken, SC (USA))

Title: Proceedings of the international topical meeting on nuclear and hazardous waste management

Conference Title: Spectrum '88: international topical meeting on nuclear and hazardous waste management

Conference Location: Pasco, WA (USA) Conference Date: 11-15 Sep 1988

Publisher: La Grange Park, IL (USA) American Nuclear Society

Publication Date: 1988 p 319-322 (630 p)

Report Number(s): CONF-880903--

Contract Number (DOE): AC09-76SR00001

ISBN: 0-89448-143-6

Language: In English

Availability: American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 (USA)

Abstract: The effluent treatment facility (ETF) at the Savannah River Plant (SRP) is a new facility designed to treat and decontaminate low-level radioactive wastewater prior to release to the environment. The wastewater is primarily composed of evaporator overheads from the chemical separations and waste handling facilities at SRP. Primarily a 2000 mg/L NaNO₃ solution, the wastewater also contains microcurie-per-liter quantities of radionuclides and milligram-per-liter concentrations of heavy metals and organic components. This paper shows a block diagram of the major process steps. The pH adjustment, filtration, mercury removal, reverse osmosis, and cation-exchange polishing steps give a significant reduction of inorganic species and radionuclide (except tritium) concentrations. The activated carbon removal step was recently added to remove organic species to ensure that the effluent discharge permit limits for oil and grease and biochemical oxygen demand are met. The concentrates and regenerates from each of the treatment steps are further concentrated by evaporation to reduce the volume sufficiently for incorporation into and disposal as a grout.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03123533 NOV-91-004367; EDB-91-060968

Title: Method of treating radioactive waste containing EDTA and other organic acids

Author(s): Moriya, Y.; Kurumada, N.; Todo, F.; Kuribayashi, H. (JGC Corp., 2205 Naritacho Oharaimachi, Higashiibaraki-gun, Ibaraki Pref. 311-13 (JP))

Title: Proceedings of the international topical meeting on nuclear and hazardous waste management

Conference Title: Spectrum '88: international topical meeting on nuclear and hazardous waste management

Conference Location: Pasco, WA (USA) Conference Date: 11-15 Sep 1988

Publisher: La Grange Park, IL (USA) American Nuclear Society

Publication Date: 1988 p 304-306 (630 p)

Report Number(s): CONF-880903--

ISBN: 0-89448-143-6

Language: In English

Availability: American Nuclear Society, 555 North Kensington Ave., La Grange Park, IL 60525 (USA)

Abstract: In the decontamination of radioactive waste from nuclear installations, there is a considerable discharge of radioactive waste water containing decontaminating agents. Decontaminating agents often contain disodium ethylenediamine tetraacetic acid (EDTA), formic acid, citric acid and other organic acids. The radioactive waste water is concentrated by evaporation to reduce its volume, and the resulting residue is solidified by the use of a solidifier such as cement.

However, when EDTA and other organic acids are present in the residue, the properties of the solidified product are unfavorably affected, particularly the mechanical strength and the leachability of nuclides thereof. Therefore, it is essential to remove EDTA and other organic acids from the radioactive waste water prior to the evaporation-concentration processing. The authors report a method, the wet oxidation method, of decomposing EDTA and other organic acids present in the radioactive waste water.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

03100714 INS-91-006223; EDB-91-038148

Title: Migration of neptunium-237 in glasses and ceramics

Author(s): Ivanov, I.A.; Gulin, A.N.; Shatkov, V.M.; Shashukov, E.A.

Source: Soviet Radiochemistry (English Translation) (USA) v 30:6.

Coden: SVRDA ISSN: 0038-576X

Publication Date: Jul 1989 p 773-776

Translation Note: Translation of Radiokhimiya 30: No. 6, 817-820(Nov-Dec 1988)

Language: In English

Abstract: The integrated-residual-radioactivity method was used to obtain comparative data on the diffusion of neptunium-237 in model aluminoborosilicate and aluminophosphate glasses and also in clay-containing ceramics of two compositions. It was determined that the crystallization of the glasses affected the diffusion and that the water adsorbed by the ceramics affected the low-temperature migration of the radionuclide. It was determined that at elevated temperatures, both in the glasses and in the ceramics, neptunium-237 is one of the last mobile radionuclides. At a comparable temperature (500degreeC), the diffusion coefficient of neptunium-237 in the uncrosslinked aluminoborosilicate glass was approximately three orders lower than in the ceramics.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02993103 EDB-91-026725; INS-91-004783; NTS-91-009505; ERA-91-009699

Title: Performance assessment calculational exercises (Yucca Mountain Project)

Author(s)/Editor(s): Barnard, R.W.; Dockery, H.A.

Corporate Source: Sandia National Labs., Albuquerque, NM (USA)

Sponsoring Organization: DOE/RW

Conference Title: American Nuclear Society (ANS) international high level radioactive waste management conference

Conference Location: Las Vegas, NV (USA) Conference Date: 28 Apr - 3 May 1991

Publication Date: 1990 (9 p)

Report Number(s): SAND-90-2088C CONF-910435--5

Order Number: DE90017590

Contract Number (DOE): AC04-76DP00789

Language: In English

Availability: OSTI; NTIS; INIS; GPO Dep.

Abstract: The Performance Assessment Calculational Exercises (PACE) are an ongoing effort coordinated by Yucca Mountain Project Office. The objectives of fiscal year 1990 work, termed PACE-90, as outlined in the Department of Energy Performance Assessment (PA) Implementation Plan were to develop PA capabilities among Yucca Mountain Project (YMP) participants by calculating performance of a Yucca Mountain (YM) repository under "expected" and also "disturbed" conditions, to identify critical elements and processes necessary to assess the performance of YM, and to perform sensitivity studies on key parameters. It was expected that the PACE problems would aid in development of conceptual models and eventual evaluation of site data. The PACE-90 participants calculated transport of a selected set of radionuclides through a portion of Yucca Mountain for a period of 100,000 years. Results include analyses of fluid-flow profiles, development of a source term for radionuclide release, and simulations of contaminant transport in the fluid-flow field. Later work included development of a problem definition for perturbations to the originally modeled conditions and for some parametric sensitivity studies. 3 refs.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02972294 AIX-22-002997; EDB-91-005919; ERA-16-005219

Title: Radionuclide and heavy metal concentrations in water, sediments and
biota in the vicinity of Cluff mining operations

Author(s): Hynes, T.P.; Meadley, T.; Thompson, N.A.; Schmidt, R.M. (Amok
Ltd., Saskatoon, SK (Canada))

Title: Proceedings of the Canadian Nuclear Society 2. international
conference on radioactive waste management

Corporate Source: Canadian Nuclear Society, Toronto, ON (Canada)

Conference Title: 2. Canadian Nuclear Society international conference on
radioactive waste management

Conference Location: Winnipeg (Canada) Conference Date: 7-11 Sep 1986

Publication Date: 1986 p 281-288 (821 p)

Report Number(s): INIS-mf-12730 CONF-8609486--

Order Number: DE91612725

Language: In English

Availability: NTIS (US Sales Only), PC A99/MF A01; OSTI; INIS

Abstract: Data is presented on the concentrations of U, Ra-226, Pb-210,
Th-230, Th, As, Cu, Pb, Mo, Ni and Zn in water, sediments, aquatic
macrophytes and fish near a high grade uranium mining facility.

Baseline data acquired in 1975 and 1978-79 is compared to
post-development environmental monitoring data from 1980 to 1985.

Distribution coefficients (K_{sub D}) for sediment, and transfer
coefficients (T.C.) for biota and derived from the water, sediment and
biota concentrations.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02937281 NTS-91-001573; EDB-90-154525

Title: Reactor test program for Columbia River radioisotope reduction studies

Author(s)/Editor(s): Nielsen, J.M.

Corporate Source: General Electric Co., Richland, WA (USA). Hanford Atomic Products Operation

Sponsoring Organization: DOE/NE

Publication Date: 20 Jan 1961 (8 p)

Report Number(s): HW-68224

Order Number: DE91000048

Contract Number (DOE): AC06-76RL01830

Language: In English

Availability: NTIS, PC A02/MF A01 - OSTI; GPO Dep.

Abstract: This report presents a planned reactor test program in support of the research and development study to investigate the formation of radioisotopes in reactor cooling water and to devise means of reducing the amounts of those radioisotopes formed which result in significant exposures to downstream users of the Columbia River water. The effects of water treatment process changes and reactor operation on the formation of radioisotopes of radiological interest will be studied utilizing four of the 1706-KE single-pass tubes together with special demineralizer and water treatment facilities to be obtained in 1961. Specially treated water containing no salts, single salts, mixtures of salts, special additives, and complexing agents will be investigated. The effects of varying water composition and pH, of using aluminum and zirconium reactor tubes, and of varying reactor conditions of tube outlet temperature, water flow rate, flux, and power level will be tested. 1 ref.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02931533 NOV-90-027178; EDB-90-148777; INS-90-031015

Title: Radium-226 and tritium in public well supplies of the greater Chicago area

Author(s): Kristoff, L.M.; Lordi, D.T.; Hing, C.L.

Source: Journal of the American Water Works Association (USA) v 82:3.

Coden: JAWWA ISSN: 0003-150X

Publication Date: Mar 1990 p 77-80

Language: In English

Abstract: Relatively higher levels of total alpha and beta radioactivities encountered in wastewater of one of the wastewater treatment facilities operated in Chicago prompted a radiological survey of the municipal well water supplies in the region. The concentrations of total alpha activity, total beta activity, and radium-226 are reported. They were found to be higher in waters from wells with depths greater than 1,200 ft (366 m) than in waters from wells of less than 850 ft (259 m) depth. The waters from 10 of the deep wells were found to contain an unmeasurable concentration of tritium, but all of the shallow-well waters contained tritium at 0.3 nCi/L.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02917312 EDB-90-134553; NTS-90-021435; INS-90-027968; ERA-15-045467

Title: Annual environmental monitoring report of the Lawrence Berkeley
Laboratory

Author(s)/Editor(s): Schleimer, G.E. (ed.)

Corporate Source: Lawrence Berkeley Lab., CA (USA)

Sponsoring Organization: DOE/EH

Publication Date: Jun 1989 (40 p)

Report Number(s): LBL-27170

Order Number: DE90014883

Contract Number (DOE): AC03-76SF00098

Language: In English

Availability: NTIS, PC A03/MF A01; OSTI; INIS; GPO Dep.

Abstract: The Environmental Monitoring Program of the Lawrence Berkeley

Laboratory (LBL) is described. Data for 1988 are presented and general
trends are discussed. In order to establish whether LBL research
activities produced any impact on the population surrounding the
laboratory, a program of environmental air and water sampling and
continuous radiation monitoring was carried on throughout the year. For
1988, as in the previous several years, dose equivalents attributable
to LBL radiological operations were a small fraction of both the
relevant radiation protection guidelines (RPG) and of the natural
radiation background. 16 refs., 7 figs., 21 tabs.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02904806 EDB-90-122047; ERA-15-042470; INS-90-029562

Title: The application of polyelectrolytes to improve liquid radwaste treatment system radionuclide removal efficiency

Author(s): Homyk, W.A.; Spall, M.J.; Vance, J.N.

Title: Waste management '90: Working towards a cleaner environment: Waste processing, transportation, storage and disposal, technical programs

and public education. Volume 2, HLW and LLW technology: Proceedings

Author(s)/Editor(s): Post, R.G. (ed.) (Arizona Univ., Tucson, AZ (USA))

Corporate Source: American Nuclear Society (USA). Fuel Cycle and Waste Management Div. American Society of Mechanical Engineers, New York, NY (USA) USDOE, Washington, DC (USA) Arizona Univ., Tucson, AZ (USA).

Coll. of Engineering and Mines

Conference Title: Waste management 90: working towards a cleaner environment: waste processing, transportation, storage and disposal, technical programs and public education

Conference Location: Tucson, AZ (USA) Conference Date: 25 Feb - 1 Mar 1990

Publication Date: 1990 p 447-456 (988 p)

Report Number(s): CONF-900210-Vol.2

Language: In English

Availability: Arizona Board of Regents, University of Arizona, Tucson, AZ 85721

Abstract: At nuclear plants, miscellaneous waste water treated in the liquid radwaste processing system contains a significant fraction of suspended particulate materials ranging in size from a few microns down to the submicron region. The fewer particles that typically exist as colloids are generally negatively charged by virtue of inorganic and organic anions absorbed onto the particle surfaces. Because many of the radionuclides exist as colloids and resist agglomeration and settling they are not easily removed by mechanical filtration or ion exchange processes. The colloidal materials will easily pass through most filters with conventional pore size ratings and through most ion exchange media. This leads to poor decontamination Factors (dFs) and higher radionuclide releases to the environment. A laboratory-scale testing program was conducted at Indian Point Unit No. 2 to determine the effectiveness of the use of organic polyelectrolytes to destabilize colloidal suspensions in liquid radwaste. Destabilizing colloidal suspensions will improve the removal efficiencies of the suspended material by typical filtration and ion exchange processes. The increased removal efficiencies will provide increased dFs in the liquid radwaste treatment system. The testing focused on identifying the specific organic polyelectrolytes and the associated dosages which would be effective in destabilizing the colloidal suspensions on actual waste water samples. The testing also examined the filtration

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characteristics of the water source to determine filter parameters such as: body feed material, body feed dosages, specific flow rates, etc., which would provide the basis for the design of filtration systems for these applications. The testing effort and the major conclusions from this investigation are given. 4 refs., 8 figs., 2 tabs.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02904767 EDB-90-122008; ERA-15-042426; INS-90-029518

Title: Demonstration of chemical treatment process development designed to generate a below regulatory concern (BRC) waste from radiological and mixed wastes

Author(s): Brady, D.H.; Carlson, B.J. (EcoTek, Inc., Erwin, TN (USA))

Title: Waste management '90: Working towards a cleaner environment: Waste processing, transportation, storage and disposal, technical programs and public education. Volume 2, HLW and LLW technology: Proceedings

Author(s)/Editor(s): Post, R.G. (ed.) (Arizona Univ., Tucson, AZ (USA))

Corporate Source: American Nuclear Society (USA). Fuel Cycle and Waste Management Div. American Society of Mechanical Engineers, New York, NY (USA) USDOE, Washington, DC (USA) Arizona Univ., Tucson, AZ (USA). Coll. of Engineering and Mines

Conference Title: Waste management 90: working towards a cleaner environment: waste processing, transportation, storage and disposal, technical programs and public education

Conference Location: Tucson, AZ (USA) Conference Date: 25 Feb - 1 Mar 1990

Publication Date: 1990 p 153-158 (988 p)

Report Number(s): CONF-900210-Vol.2

Language: In English

Availability: Arizona Board of Regents, University of Arizona, Tucson, AZ 85721

Abstract: EcoTek, Inc., has performed numerous process development treatability studies designed to develop chemical treatment processes to extract radionuclides from both radiological and mixed waste sediments, sludges and soils. The primary purpose of process development studies for radiological and mixed wastes is to cost effectively produce a leached residue activity which is consistently BRC. An optimum treatment process which generates a BRC residue allows alternate disposal options for both waste types as either a non-radiological, or hazardous waste. Secondary process development objectives are to identify resource recovery potential from residue and aqueous waste streams, minimize waste stream volumes and avoid generating waste streams which are characteristic hazardous wastes. The treatment process identified for each waste type has been successfully demonstrated at bench and pilot scale levels. Results of two process development treatability studies for a radiological and a mixed waste are outlined below. The radiological waste was a uranium bearing fuel fabrication waste in a calcium fluoride matrix. A sulfuric acid leaching process was developed for this waste which produced a residue activity allowing disposal in a chemical landfill. This process also selectively recovers uranium from the leachate for recycle back to the fuel fabrication cycle. A pilot plant is under construction. A sulfuric

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acid leaching process was developed for a mixed waste soil contaminated with uranium, thorium, PCB, heavy metals, and other listed hazardous organics. The process was optimized on a laboratory scale basis and demonstrated via laboratory and large scale batch tests. The optimum treatment process produced a residue total activity upper limit (95% UL) below 34 $\mu\text{Ci}/\text{msup 3}$ (36 pCi/g). Total activity was defined as the sum of gross alpha + gross beta + gross gamma activities. 2 refs., 1 fig., 1 tab.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02859726 EDB-90-076964; NTS-90-015197

Title: Reduction of radionuclides in reactor effluent water: Final report
on the effect of chemical additives and coating materials on the
adsorption of radionuclide parent elements in process water on aluminum
surfaces

Author(s)/Editor(s): Robertson, D.E.; Perkins, R.W.

Corporate Source: General Electric Co., Richland, WA (USA). Hanford Atomic
Products Operation

Sponsoring Organization: DOE/EH

Publication Date: 23 Dec 1963 (16 p)

Report Number(s): HW-80557

Order Number: DE90010772

Contract Number (DOE): AC06-76RL01830

Language: In English

Availability: NTIS, PC A03/MF A01 - OSTI

Abstract: Previous studies have shown that the reactor effluent water radionuclides are produced mainly by the neutron activation of parent elements which have been adsorbed from process water onto the surface of the aluminum process tubes and fuel element jackets. Various methods have been studied, aimed at reducing effluent water radioactivity by minimizing this adsorption of parent materials. It was found that several types of protective films could be formed on aluminum surfaces which would greatly reduce the adsorption of parent materials. This was accomplished either by the continuous addition of chemical additives or selective corrosion inhibitors to the process water or by pretreatment of the aluminum surfaces with certain protective coatings. The adsorption inhibiting effects of process water additives, corrosion inhibitors, surface pretreatment processes and coatings on aluminum surfaces were studied. Two of the effluent water radionuclides of principal concern as Assup 76 and Psup 32 and the adsorption behavior from process water of their parent elements was normally used as an index of the effectiveness of a treatment. 5 refs.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02850142 NOV-90-002328; EDB-90-067379

Title: Assessment of alternative flue gas treatment systems for hazardous waste incineration

Author(s): Chao, C.C. (Ontario Waste Management Corp., 2 Bloor Street West, Toronto, Ontario (CA))

Title: Proceedings of the international conference on incineration of hazardous, radioactive and mixed wastes

Conference Title: International conference on incineration of hazardous, radioactive, and mixed wastes

Conference Location: San Francisco, CA (USA) Conference Date: 3-6 May 1988

Publisher: Irvine, CA (USA) Univ. of California at Irvine

Publication Date: 1988 p 1-26 (vp.)

Report Number(s): CONF-880526--

Language: In English

Availability: Univ. of California at Irvine, Irvine, CA 92717 (USA)

Abstract: This paper identifies available flue gas cooling and treatment technologies which are short-listed based on predetermined screening criteria. The short-listed technologies is further combined practice in the world. These alternatives are assessed and ranked using seven evaluation criteria: performance, safety, flexibility, reliability, operability, local benefit and cost. The pros and cons of each alternative are described. Under a zero liquid effluent scenario, a best suitable flue gas cooling and treatment system is recommended.

This system includes a waste heat recovery boiler, a spray dryer/reactor, an electrostatic precipitator and a three-stage wet scrubber.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02848280 NOV-90-002331; EDB-90-065517; INS-90-011865

Title: Latest developments in the Juelich incineration system design, and
similarities in the treatment of radioactive and hospital wastes

Author(s): Wurster, W.; Zapf, G. (Kraftanlagen AG Heidelberg, Manfred
Laser, KFA Juelich (DE))

Title: Proceedings of the international conference on incineration of
hazardous, radioactive and mixed wastes

Conference Title: International conference on incineration of hazardous,
radioactive, and mixed wastes

Conference Location: San Francisco, CA (USA) Conference Date: 3-6 May
1988

Publisher: Irvine, CA (USA) Univ. of California at Irvine

Publication Date: 1988 p 1-9 (vp.)

Report Number(s): CONF-880526--

Language: In English

Availability: Univ. of California at Irvine, Irvine, CA 92717 (USA)

Abstract: The Juelich incineration process is suitable to resolve quite
different problems which are encountered in the combustion of waste.
The pilot plant on which the actual process was developed obtained the
licence for the combustion of radioactive waste in 1976. In addition,
several commercial plants have been commissioned since 1979 which will
continue to operate also in the future. This paper deals with the
combustion of radioactive waste in the Juelich Nuclear Research Center,
and with the combustion of hospital waste in the University Hospital of
Wuerzburg.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02848211 NOV-90-002320; EDB-90-065448; INS-90-011844

Title: Off-gas treatment of an incineration installation

Author(s): Vanbrabrant, R.; Lewandowski, P.; Van Houte, G. (Studiecentrum voor Kernenergie (DE))

Title: Proceedings of the international conference on incineration of hazardous, radioactive and mixed wastes

Conference Title: International conference on incineration of hazardous, radioactive, and mixed wastes

Conference Location: San Francisco, CA (USA) Conference Date: 3-6 May 1988

Publisher: Irvine, CA (USA) Univ. of California at Irvine

Publication Date: 1988 p 1-32 (vp.)

Report Number(s): CONF-880526--

Language: In English

Availability: Univ. of California at Irvine, Irvine, CA 92717 (USA)

Abstract: Low-radioactive and toxic waste conditioning constitutes one of the most important activities of the Waste department of the Studiecentrum voor Kernenergie (SCK/CEN) at Mol. SCK/CEN has developed the H.T.S.I. (High Temperature Slagging Incinerator) process as overall installation for the treatment of low-active and toxic waste. The most important characteristics of this installation are described. A demonstration unit is in use at SCK/CEN for the treatment of both beta-gamma and alpha-contaminated radioactive waste and for specific batches of toxic waste. The off-gases produced during combustion are treated in the gas purification line. The gas purification line described in this paper constitutes an integral part of the high temperature slagging incinerator.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02842465 EDB-90-059699; NTS-90-012833

Title: Contamination control, Columbia River: August monthly report

Author(s)/Editor(s): Geier, R.G. (comp.)

Corporate Source: General Electric Co., Richland, WA (USA). Hanford Atomic
Products Operation

Sponsoring Organization: DOE/EH

Publication Date: 22 Aug 1963 (11 p)

Report Number(s): HW-78736

Order Number: DE90009113

Contract Number (DOE): AC06-76RL01830

Note: Declassified 26 Mar 1990

Language: In English

Availability: NTIS, PC A03/MF A01 - OSTI; GPO Dep.

Abstract: It is the purpose of this report to present the progress being
made in those areas of work sponsored by the Division of Production,
USAEC, which deal with contamination control in the Columbia River.
Included are the radiological data obtained from the river sampling
program, pertinent aspects of the reactor operations, and the results
obtained from the research and development program directed toward the
reduction of effluent activities. 2 figs.

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Record - 259

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02842452 EDB-90-059686; NTS-90-012834

Title: Contamination control, Columbia River: Monthly report, September
1963

Author(s)/Editor(s): Geier, R.G. (comp.)

Corporate Source: General Electric Co., Richland, WA (USA). Hanford Atomic
Products Operation

Sponsoring Organization: DOE/EH

Publication Date: 20 Sep 1963 (12 p)

Report Number(s): HW-78988

Order Number: DE90009114

Contract Number (DOE): AC06-76RL01830

Note: Declassified 26 Mar 1990

Language: In English

Availability: NTIS, PC A03/MF A01 - OSTI; GPO Dep.

Abstract: It is the purpose of this report to present the progress being
made in those areas of work sponsored by the Division of Production,
USAEC, which deal with contamination control in the Columbia River.
Included are the radiological data obtained from the river sampling
program, pertinent aspects of the reactor operations, and the results
obtained from the research and development program directed toward the
reduction of effluent activities. 2 figs.

262

Record - 260

<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02841819 NOV-90-002315; EDB-90-059052; INS-90-011837

Title: Treatment of radioactive, infectious and chemical wastes at Stanford University

Author(s): Englund, V.; Holmes, J.A. Kronenberger, S. (Stanford Univ., CA (USA))

Title: Proceedings of the international conference on incineration of hazardous, radioactive and mixed wastes

Conference Title: International conference on incineration of hazardous, radioactive, and mixed wastes

Conference Location: San Francisco, CA (USA) Conference Date: 3-6 May 1988

Publisher: Irvine, CA (USA) Univ. of California at Irvine

Publication Date: 1988 p 1-7 (vp.)

Report Number(s): CONF-880526--

Language: In English

Availability: Univ. of California at Irvine, Irvine, CA 92717 (USA)

Abstract: In 1982 Stanford University began processes for development of a center for storage, treatment and disposal of hazardous wastes, including chemical, biological, and radiological. This paper discusses the problems associated with the culmination of the project and the activation of the facilities. Specifically the paper addresses some of the difficulties in installation and operation of the incineration plant and pit-falls in establishing design criteria which then become incorporated into permits. Early operating experience of the incinerator is summarized. Equipment, apparatus and facilities utilized in storage, handling and processing the wastes are described. Also, the ongoing efforts to obtain licensing and RCRA Part B permits are reviewed.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02814749 NOV-90-097293; EDB-90-031972; INS-90-007148; ERA-15-016165

Title: Alpha-decay damage and annealing effects in natural pyrochlores

Analogues for long-term radiation damage effects in actinide,
pyrochlore, structure types

Author(s): Lumpkin, G.R.; Ewing, R.C. (New Mexico Univ., Albuquerque, NM
(USA). Dept. of Geology (USA))

Title: Scientific basis for nuclear waste management XII

Author(s)/Editor(s): Lutz, W. (Hahn-Meitner-Institut Berlin G.m.b.H.
(Germany, F.R.)); Ewing, R.C. (New Mexico Univ., Albuquerque, NM
(USA))

Original Series Title: Materials Research Society symposium proceedings.
Volume 127

Conference Title: 12. international symposium on the scientific basis for
nuclear waste management

Conference Location: Berlin (Germany, F.R.) Conference Date: 10-13 Oct
1988

Publisher: Pittsburgh, PA Materials Research Society

Publication Date: 1989 p 253-260 (1001 p)

Report Number(s): CONF-881066--

ISBN: 0-931837-97-9

Language: In English

Abstract: Cubic pyrochlore structure types, A₂-B₂O₅, and their derivatives (e.g. monoclinic zirconolite) are important actinide-bearing phases in polyphase, ceramic waste forms (e.g., SYNROC). These waste form phases may typically accumulate alpha-decay doses of 10²⁵ alpha-events/m² in 1,000 years or 10²⁶ alpha-events/m² in one million years (i.e., for SYNROC with 20 wt. % HLW). Natural pyrochlores have calculated doses ranging from 10²⁴ to 10²⁷ alpha-events/m² (= 0.020 to 50 dpa) which have accumulated over ten to a thousand million years. Actinide doping experiments typically reach doses of 10²⁵ alpha-events/m² over periods of several years. Detailed x-ray diffraction analysis of natural samples reveals that the alpha-decay dose at which there is an initial loss of crystallinity (i.e., transition from crystalline to the aperiodic, metamict state as a result of alpha-decay damage) increases as a function of the geologic age of the sample. The increase in the calculated alpha-decay dose which is associated with a specific degree of damage (e.g., loss of x-ray diffraction intensity) is attributed to annealing of isolated alpha-recoil tracks back to the original, crystalline structure.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02814679 EDB-90-031902; NTS-90-010188; ERA-15-016096

Title: July monthly report: Contamination control, Columbia River

Author(s)/Editor(s): Geier, R.G. (comp.)

Corporate Source: General Electric Co., Richland, WA (USA). Hanford Atomic
Products Operation

Sponsoring Organization: DOE/EH

Publication Date: 19 Jul 1962 (9 p)

Report Number(s): HW-74357

Order Number: DE90006836

Contract Number (DOE): AC06-76RL01830

Note: Declassified 1 February 1990

Language: In English

Availability: NTIS, PC A02/MF A01 - OSTI; GPO Dep.

Abstract: It is the purpose of this report to present the progress being
made in those areas of work sponsored by the Division of Production,
USAEC which deal with contamination control in the Columbia River.
Included are the radiological data obtained from the river sampling
program, pertinent aspects of the reactor operations, and the results
obtained from the research and development program directed toward the
reduction of effluent activities. 2 figs.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02783490 EDB-90-000704; INS-90-001199

Title: Characteristics of borosilicate glass in modeling of alpha-radiation and thermal conditions of storage of glassified highly radioactive wastes

Author(s): Prokin, E.S.; Kuptsov, U.S.; Ananina, T.N.; Ermolaev, E.E.

Source: Soviet Radiochemistry (English Translation) (USA) v 30:5.

Coden: SVRDA ISSN: 0038-576X

Publication Date: May 1989 p 664-668

Translation Note: Translation of Radiokhimiya 30: No. 5, 694-698 (Sep-Oct 1988)

Language: In English

Abstract: The effects of alpha-radiation from ^{238}Pu and heat treatment on the physicochemical properties of borosilicate glass are studied. The structural state, chemical stability, density, and microhardness of glass with PuO_{2} , and also the liberation from it of radiogenic helium are determined. It is found that the PuO_{2} phase is present. Annealing of the glass at 600°C leads to partial crystallization of the samples with the formation of phases, one of which is nepheline NaAlSi_4 . No change in the structural state of the samples, their chemical stability, density, or microhardness with accumulation in them of a dose of alpha-radiation was observed. The diffusion coefficient of the radiogenic helium over the temperature interval from 100 to 350°C is estimated.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02783398 NOV-89-081425; EDB-90-000611; INS-89-032236

Title: The use of sulfuric/phosphoric acid treated peat for radioactive wastewater treatment

Author(s): Bynum, R.V.; Navratil, J.D. (Rockwell International, Rocky Flats Plant, PO Box 464, Golden, CO (US))

Title: Chemical separations

Author(s)/Editor(s): King, C.J. (Univ. of California, Berkeley, CA (US));
Navratil, J.D. (Colorado School of Mines, Golden, CO (US))

Conference Title: 1. international conference on separations science and technology

Conference Location: New York, NY (USA) Conference Date: 15-17 Apr 1986

Publisher: Arvada, CO Litarvin Literature

Publication Date: 1986 p 107-110 (469 p)

Report Number(s): CONF-860411--

ISBN: 0-937557-03-X

Language: In English

Abstract: Peat is a relatively inexpensive material which possesses a native cation exchange capacity. Efforts to utilize peat have been hampered by its low permeability to water and its tendency to severely leach in water at pH 6. These disadvantages have been significantly minimized by treating the peat with a combination of concentrated sulfuric and phosphoric acids, resulting in a particulate material which is permeable to water and resistant to leaching. The acid treatment also increases the cation exchange capacity of the peat. This paper describes preliminary results of both column and batch studies of the modified peat for use as an actinide adsorbent.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02760828 EDB-89-151867; INS-89-027841

Title: In situ vitrification of mixed wastes

Author(s): Timmerman, C.L.

Conference Title: American Nuclear Society annual meeting

Conference Location: San Diego, CA (USA) Conference Date: 12-16 Jun 1988

Source: Transactions of the American Nuclear Society (USA) v 56. Coden:

TANSA ISSN: 0003-018X

Publication Date: 1988 p 58

Report Number(s): CONF-880601--

Language: In English

Abstract: As management of hazardous materials gains increased attention in the United States, new and more effective technologies are being sought to immobilize and/or destroy the wastes, either in situ for previously disposed wastes or at the waste generation site. Pacific Northwest Laboratory (PNL) is developing a remedial action process for contaminated solid that is potentially significant in its application to these concerns. The process was initially developed to demonstrate a potential technology for disposal of transuranic-waste-contaminated soil sites; however, recent tests have shown that many hazardous chemical wastes are also destroyed or immobilized as a result of the treatment. The process, in situ vitrification (ISV), was originally developed for the US Department of Energy (DOE) and is more recently being adapted for selected commercial clients for hazardous wastes. In situ vitrification is a thermal treatment process that converts contaminated soil into a chemically inert, stable glass and crystalline product.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02756122 NOV-89-073322; EDB-89-147160; INS-89-024870

Title: Removal of uranium from drinking water by ion exchange and chemical clarification

Author(s)/Editor(s): Hanson, S.W.; Wilson, D.B.; Gunaji, N.N.; Hathaway, S.W.

Publisher: Cincinnati, OH Environmental Protection Agency (US)

Publication Date: 1987 (vp.)

Note: Technical Paper EPA/600/52-87/076

Language: In English

Availability: Environmental Protection Agency (US), 26 W. St. Clair St., Cincinnati, OH 45268

Abstract: A pilot demonstration was conducted of ion exchange and chemical clarification equipment for removing uranium from drinking water. Four commercial-type ion exchange columns and a prefiltering and regeneration solution system were constructed along with a pilot-scale chemical clarification unit. These units were assembled and installed in a van trailer for location at a well site containing uranium-contaminated water. Uranium concentrations in the well varied during the study period from 190 to 400 $\mu\text{g/L}$. The four ion exchange columns each contained 2 ft^3 of resin. Three different ion exchange resins were used. The 1-gal/min chemical clarification unit consisted of a rapid-mix tank and precoat rotary vacuum filter. In addition to the pilot study, the report analyzes several currently operating water treatment systems whose feed supplies contain uranium. Cost analysis data for capital equipment is also included in the report along with a discussion of ultimate disposal methods for uranium-containing water treatment wastes.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02367697 NOV-89-064401; EDB-89-113670

Title: A mechanistic model for leaching from low-level radioactive waste packages

Author(s): Kempf, C.R.; Post, R.G.

Affiliation: Brookhaven National Lab., Dept. of Nuclear Energy, Upton, NY (US)

Title: Waste management '88

Series/Collection Title: Volume I: Low-level waste

Conference Title: Waste management '88: symposium on radioactive waste management

Conference Location: Tucson, AZ, USA Conference Date: 28 Feb - 3 Mar 1988

Publisher: University of Arizona Nuclear Engineering Dept., Tucson, AZ

Publication Date: 1988 p 549-560

Report Number(s): CONF-880201-

Language: English

Abstract: The development of a waste leaching model to predict radionuclide releases from porous wastes in corrodible outer containers in unsaturated conditions and/or conditions of intermittent water flow is summarized in this paper. Three major processes have been conceptualized as necessarily participating in waste leaching: infiltration of water to the waste package; interaction of this water with the waste; and exit of radionuclide-laden water from the waste package. Through the exit point, the main features of the whole leaching process are held in common. The departure occurs in two main ways: 1) the method of entrance of the radionuclides to leachant (i.e. part of the waste-water interaction phase outlined earlier); and 2) the mode of exit from waste form/waste package (i.e., the exit of radionuclide-laden water phase). The first branching point, which occurs in relation to 1), leads to either readily soluble species directly entering leachant on contact, or to other processes - mainly expected to be diffusion, dissolution or ion exchange, or some combination thereof.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02361849 INS-89-017859; EDB-89-107821

Title: Treatment of uncertainties in ground-water flow modeling in the
Swiss radioactive waste program

Author(s): Hufschmied, P.; Buxton, B.E. (ed.)

Affiliation: National Cooperative for the Storage of Radioactive Waste,
Baden (Switzerland)

Title: Geostatistical, sensitivity, and uncertainty methods for
ground-water flow and radionuclide transport modeling. Proceedings

Corporate Source: Battelle Columbus Div., OH (USA)

Conference Title: Geostatistical sensitivity and uncertainty methods for
groundwater flow and radionuclide transport modeling conference

Conference Location: San Francisco, CA, USA Conference Date: 15-17 Sep
1987

Publisher: Battelle Memorial Institute, Columbus, OH

Publication Date: 1989 p 63-87

Report Number(s): CONF-870971-

Language: English

Availability: Battelle Press, 505 King Avenue, Columbus, OH 43201-2693.

Abstract: The most plausible scenario for release of radionuclides from a
geologic repository is by transport in moving ground-water.

Accordingly, modeling of ground-water flow plays an important role in
Swiss performance assessment work. Modeling takes place at different
scales, beginning at a regional scale which gives boundary conditions
for a smaller local-scale model. At the repository scale, a third model
is being used to study the influence of major hydraulic discontinuities
near the repository. A fourth model finally describes the fine-scale
flow in individual water-bearing features which are most important for
radionuclide transport in the geosphere. Sensitivity of model
parameters and approaches to treat uncertainties are different for the
various scales. Main sources of uncertainty are (1) incomplete
available data about the spatial distribution of hydrogeologic
parameters and (2) measurement/interpretation errors. Significant
effort has already been involved in understanding and quantifying
uncertainty in results of hydraulic testing, and increasing attention
is being focused upon the problem of the incompleteness of data.
Efforts are under way to better quantify both types of uncertainties.

Approaches to treat uncertainty in derived model parameters are
discussed. Ultimately the methods proposed should allow one to link
field data uncertainty and incomplete information to the uncertainty of
hydrodynamic input parameters for radionuclide transport calculations.

The methodology is being tested within the international project
HYDROCOIN. The impact of hydrologic uncertainty considerations upon the
ongoing and planned site characterization work as well as associated R
D needs of the Swiss program are discussed.

Record - 269

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02323135 EDB-89-068877

Author(s): Geier, R.G.

Title: Summary of reactor effluent research and development program

Corporate Source: Douglas United Nuclear, Inc., Richland, WA (USA)

Publication Date: 28 Oct 1966 p 82

Report Number(s): DUN-1664-DEL.

Order Number: DE89010151

Contract Number (DOE): AC06-76RL01830

Note: Paper copy only, copy does not permit microfiche production.

Declassified 13 Apr 1989

Language: English

Availability: NTIS, PC A05 - OSTI; 3.

Abstract: The plutonium production reactors use treated Columbia River water as a coolant on a once-through basis. Thus, radionuclides formed largely by the activation of river salts are released to the Columbia River. The radionuclides have been monitored and studied since the startup of the Hanford site. As the number of reactors and the reactor power levels increased, the quantities of radionuclides released increased. Interest in the subject also increased, and improved monitoring and analytical techniques were developed. By 1960 the radionuclide releases had increased to a point where, although not a problem with respect to nationally established limits, it appeared prudent to increased markedly emphasis on means of reducing them. The long-range goal was to develop economical processes capable of achieving major reductions in the biologically significant radionuclides in the reactor effluent. The published efforts relating to the reactor effluent radioactivity reduction program were summarized in early 1964. The purpose of this document is to update the previous document as well as to include unpublished experimental results. Brief descriptions of the various studies performed to date are included in the Appendix. 130 refs.

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Record - 270

< DIALOG File 103: (c) format only 1994 Dialog Info. Svcs. >
02307438 NOV-89-047227; INS-89-008166; EDB-89-053178

Title: Protection and safety functions of different off-gas treatment
systems in radioactive waste incineration

Author(s): Caramelle, D.; Chevalier, G.; Chevalier, G.

Title: Incineration of low level and mixed wastes: 1986

Conference Title: 5. annual conference and exhibit on the incineration of
low-level radioactive waste

Conference Location: Charlotte, NC, USA Conference Date: 23 Apr 1986

Publisher: Univ. of California at Irvine, Irvine, CA

Publication Date: 1986 p F.1-F.7 v

Report Number(s): CONF-860429-

Language: English

Abstract: Gaseous effluent cleaning installations are designed to protect
workmen and environment and must be efficient enough to guarantee that
the amounts of gases and dusts emitted by a furnace operating normally
or accidentally are at an acceptable level in the atmosphere on the
incinerator site. The process equipments necessary to operations and
the monitoring devices must be reliable. The main risk in normal
operation is occupational exposure close to the radioactive products
accumulation points. The accidental risks are mainly related to an
outage of the off-gas cleaning or a tightness failure with radioactive
products dissemination resulting from either internal perturbation
(filter tear, exhauster failure, ...) or external incident (electricity
cut-off, furnace disarrangements, fire or explosion inside the
incinerator). In view of these risks, it is interesting to examine the
safety and protection functions of different components of off-gas
treatment systems.

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Record - 271

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02273745 AIX-20-013242; EDB-89-019479

Title: Assessment of the dose to man from the sediments of a river
receiving radioactive effluents released by a waste treatment facility

Author(s): Zeevaert, T.; Fieuw, G.; Kirchmann, R.; Koch, G.;
Vandecasteele, C.M.

Affiliation: Centre d'Etude de l'Energie Nucleaire, Mol (Belgium)

Source: Ann. Assoc. Belge Radioprot. (Belgium) v 12:2-3. Coden: ABVSD

Publication Date: Apr-Sep 1987 p 247-286

Language: English

Abstract: The river Neet receives liquid low level radioactive waste.

Sediment sampling campaigns and suspended matter collection were performed and two simple models were applied for the assessment of the dose to man. The predicted values of external dose rates on the Neet river banks from the contaminated bed sediment are in good agreement with the measured values. (M.C.B.).

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Record - 272

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02251465 NOV-88-029246; ERA-14-003575; EDB-88-194210

Title: Comparison of groundwater pumping alternatives for mitigating an
area contaminated with hazardous waste

Author(s): Tsai, S.Y.; Zielen, A.J.

Affiliation: Argonne National Lab., IL (US)

Title: Geotechnical and geohydrological aspects of waste management

Conference Title: 8. symposium on geotechnical and geohydrological aspects
of waste management

Conference Location: Ft. Collins, CO, USA Conference Date: 5 Feb 1986

Publisher: A.A. Balkema Publishers, Accord, MA

Publication Date: 1986 p 121-132

Report Number(s): CONF-860205-

Language: English

Abstract: Wastewaters in the cesspools and leaching pits and leachate
generated by precipitation infiltrating through the waste piles have
percolated into the sand and gravel aquifer that lies directly beneath
CAAP and extends into the surrounding area. A contamination survey of
the CAAP site and its vicinity was initiated by the U.S. Army Toxic and
Hazardous Materials Agency (USATHAMA) in 1981. The results of several
field samplings and chemical analyses indicate that explosive compounds
have contaminated the areal aquifer and migrated offsite. The water in
several private wells downgradient of the CAAP site has been
contaminated by significant levels of the explosive compounds.

Migration of the contaminants is expected to continue in the
groundwater flow system, thereby affecting additional groundwater in
the area. In order to control further migration of the contaminants, a
groundwater restoration program was initiated by USATHAMA to study
various groundwater management schemes. The objective of this study is
to numerically simulate various groundwater pumping schemes and
evaluate their effectiveness in controlling plume migration. The
results will be used by USATHAMA as supporting information in their
decision-making process regarding the selection of an appropriate
approach for decontaminating the contaminated aquifer in the area near
the CAAP site.

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Record - 273

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02249144 GBN-88-004952; EDB-88-191889

Title: Investigations on the concentration of radionuclides in sewage

sludges of Ruhrverband wastewater treatment plants 1960 through to 1986

Author(s): Imhoff, K.R.; Koppe, P.; Dietz, F.

Affiliation: Ruhrverband und Ruhrtalsperrenverein, Essen (Germany, F.R.)

Source: Water Res. (United Kingdom) v 22:8. Coden: WATRA

Publication Date: Aug 1988 p 1059-1067

Language: English

Abstract: The Ruhrverband operates a total of 118 municipal wastewater treatment works. Predominantly, biological treatment is applied.

Supplementary to common analyses the digested sludges are investigated concerning radioactivity since 1960. Thus, the additional loading resulting from fall out and wash out after the reactor accident on 26 April 1986 in Chernobyl could be precisely recorded. Prior to the description of the effects of the Chernobyl accident on river water, potable water and on wastewater sludges, a short background information on the occurrence of the accident and its consequences for the F.R.G. is given.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02160233 NOV-88-007535; EDB-88-102966

Title: Lime treatment of liquid waste containing heavy metals,
radionuclides and organics

Author(s): Du Pont, A.

Affiliation: National Lime Association, Arlington, VA (US)

Title: Management of uncontrolled hazardous waste sites

Conference Title: Superfund '86: 7th national conference on management of
uncontrolled hazardous waste sites

Conference Location: Washington, DC, USA Conference Date: 1 Dec 1986

Publisher: Hazardous Materials Control Research Institute, Silver Spring,
MD

Publication Date: 1986 p 306-312

Report Number(s): CONF-861227-

Language: English

Abstract: Lime is well known for its use in softening drinking water and
the treatment of municipal wastewaters. It is becoming important in
the treatment of industrial wastewater and liquid inorganic hazardous
waste; however, there are many questions regarding the use of lime for
the treatment of liquid hazardous waste.

Record - 275

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02156213 EDB-88-098946

Title: Considerations for treatment methodologies applied to mixed wastes
for shallow land disposal

Author(s): Ramsey, R. W. Jr.

Conference Title: American Nuclear Society annual meeting

Conference Location: Reno, NV, USA Conference Date: 15 Jun 1986

Source: Trans. Am. Nucl. Soc. (United States) v 52. Coden: TANSA

Publication Date: 1986 p 26-28

Report Number(s): CONF-860610-Summs.

Language: English

Abstract: While alternative long-term isolation technologies exist and, have been adopted for some wastes landfilling will continue as the disposal of choice for many chemical and radioactive wastes into the foreseeable future because (a) land is relatively cheap and methods of burial are easily accomplished; (b) some wastes are unsuitable or impractical to emplace in alternative disposal sites, hold in storage or process to achieve decomposition, immobilization, or more secure isolation from the environment; and (c) many small-scale generators of waste cannot justify elaborate pretreatment, volume reduction, immobilization, or more sophisticated alternative disposal to be passed on in the cost of their products. As a possible approach to this problem, techniques must be developed and systems adopted that will provide broadly applicable treatment for wastes prior to emplacement in shallow land disposal facilities. Such treatments must prevent post-emplacement deterioration or interactions resulting in migration of contaminants. They must be deployed in a manner to be cost-effective and used by operations on both large and small scale. Where possible, they should also allow for the recycling or recovery of scarce or potentially limited resources.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02156094 NOV-88-007587; INS-88-018696; ERA-13-032360; EDB-88-098827

Title: Treatment scheme for controlling the migration of radium from a tailings impoundment

Author(s): Opitz, B.E.; Graves, B.

Affiliation: Pacific Northwest Labs., Richland, WA 99352 (US)

Title: Radon, radium, and other radioactivity in ground water:

Hydrogeologic impact and application to indoor airborne contamination

Conference Title: Conference on radon, radium, and other radioactivity in ground water: hydrogeologic impact and application to indoor airborne contamination

Conference Location: Somerset, NJ, USA Conference Date: 7 Apr 1987

Publisher: Lewis Publishers, Chelsea, MI

Publication Date: 1987 p 499-510

Report Number(s): CONF-8704123-

Contract Number (DOE): AC06-76RL01830

Language: English

Abstract: Under sponsorship of the Nuclear Regulatory Commission's Uranium Research and Recovery Program, Pacific Northwest Laboratory (PNL) has investigated the use of various neutralizing reagents and techniques to attenuate the movement of contaminants associated with acidic uranium mill tailings. The objective of this study was to identify those contaminants which are not effectively attenuated by common neutralization methods and to develop alternative control measures. Of those contaminants associated with uranium mill tailings which were identified as not being effectively immobilized by tailing neutralization, radium imposes an important environmental concern in terms of potential groundwater contamination. Control or attenuation of radium is of special concern primarily due to its radiological health implications. For that reason, the Environmental Protection Agency (EPA) has implemented strict guidelines governing the maximum allowable concentration in drinking waters. Current EPA guidelines call for total radium activities not to exceed 5 $\mu\text{Ci}/\text{L}$. Due to the high activity of soluble radium in the acidic uranium mill tailings environment (several hundred to several thousand $\mu\text{Ci}/\text{L}$), specific ion removal procedures were investigated for use in attenuating radium in order to prevent future groundwater contamination. Results of these investigations led to the development of a tailing additive comprised of a mixture of hydrated lime and barium chloride, which, added to acidic tailings, can reduce the amount of leachable radium escaping a designated tailing impoundment. In laboratory verification tests, this radium specific tailings treatment reduced the effluent solution activity of radium by three orders of magnitude, from $> 3500 \mu\text{Ci}/\text{L}$ to 1.7 $\mu\text{Ci}/\text{L}$, in comparison with untreated acidic tailings.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02146617 FRD-88-001020; EDB-88-089349

Title: Sources/treatment of uncertainties in the performance assessment of geologic radioactive waste repositories

Author(s): Cranwell, R.M.

Affiliation: Sandia National Labs, Albuquerque, NM (US)

Title: Uncertainty analysis for performance assessments of radioactive waste disposal systems. Proceedings of an NEA workshop

Corporate Source: Nuclear Energy Agency, 75 - Paris (France)

Conference Title: OECD/NEA workshop on uncertainty analysis for systems performance assessments

Conference Location: Seattle, WA, USA Conference Date: 24 Feb 1987

Publisher: Organisation for Economic Co-Operation and Development, Paris, France

Publication Date: 1987 p 53-65

Report Number(s): CONF-870290-

Language: English

Abstract: Uncertainties in the performance assessment of geologic radioactive waste repositories have several sources. The more important ones include: 1) uncertainty in the conditions of a disposal system over the temporal scales set forth in regulations, 2) uncertainty in the conceptualization of the geohydrologic system, 3) uncertainty in the theoretical description of a given conceptual model of the system, 4) uncertainty in the development of computer codes to implement the solution of a mathematical model, and 5) uncertainty in the parameters and data required in the models and codes used to assess the long-term performance of the disposal system. This paper discusses each of these uncertainties and outlines methods for addressing these uncertainties.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02146488 ERA-13-030120; EDB-88-089220

Title: Overview of treatment and conditioning of low-level wastes

Author(s): Trevorrow, L.

Affiliation: Argonne National Lab., IL (USA)

Title: Proceedings from the international symposium on alternative
low-level waste technologies

Conference Title: Conference on all aspects of low level waste

Conference Location: Chicago, IL, USA Conference Date: 28 Feb 1986

Publisher: Illinois Department of Nuclear Safety, Springfield, IL

Publication Date: 1986 p 1-9

Report Number(s): CONF-860223-

Language: English

Abstract: The consideration of alternative technologies in low-level waste management is assumed to be partly a response to current demands for lower risk in waste disposal. One of the determinants of risk in waste disposal is the set of characteristics of the materials placed into disposal cells, i.e., the products of treatment and conditioning operations. The treatment and conditioning operations that have been applied to waste streams are briefly examined. Three operations are the most important determinants of the stability that will contribute to reducing risk at the disposal cell: compaction, high-integrity containers, and solidification. The status of these three operations is reviewed. 22 references.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02129181 NOV-88-000309; ERA-13-024190; INS-88-012925; EDB-88-071910
Title: New treatment facility for low level process effluents at the
Savannah River site
Author(s): Ebra, M.A.; Bibler, J.P.; Johnston, B.S.; Kilpatrick, L.L.;
Poy, F.L.; Wallace, R.M.; Post, R.G.
Affiliation: E.I. du Pont de Nemours and Co., Savannah River Lab., Aiken,
SC 29808 (USA)
Title: Waste management '87: Waste isolation in the US, technical programs,
and public education
Series/Collection Title: Volume 3 - Low-level waste
Conference Title: Waste management '87
Conference Location: Tucson, AZ, USA Conference Date: 1 Mar 1987
Publisher: University of Arizona Nuclear Engineering Dept., Tucson, AZ
Publication Date: 1987 p 747-750
Report Number(s): CONF-870306-
Contract Number (DOE): AC09-76SR00001
Language: English
Abstract: A new facility, the F/H Effluent Treatment Facility (F/H ETF) is
under construction at the Savannah River site. It will decontaminate
process effluents containing low levels of radionuclides and hazardous
chemicals prior to discharge to a surface stream. These effluents,
which are currently discharged to seepage basins, originate in the
chemical separations and high level radioactive waste processing areas,
known as F-Area and H-Area. The new facility will allow closure of the
basins in order to meet the provisions of the Resource Conservation and
Recovery Act by November 1988. A high degree of reliability is
expected from this design as a result of extensive process development
work that has been conducted at the Savannah River Laboratory. This
work has included both bench scale testing of individual unit
operations and pilot scale testing of an integrated facility, 150-285
L/min (40-75 gpm), that contains the major operations.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02129152 NOV-88-002638; EDB-88-071881

Title: Radioactive spent resin treatment system utilizing a
radionuclide-resin separation technique

Author(s): Otoda, T.; Inagaki, Y.; Sagawa, H.; Miyake, T.; Post, R.G.

Affiliation: Mitsubishi Heavy Industries, Ltd., Takasago Research and
Development Center, 2-1-1, Shinhamama, Arai-cho, Takasago 676 (JP)

Title: Waste management '87: Waste isolation in the US, technical programs
and public education

Series/Collection Title: Volume 3 - Low-level waste

Conference Title: Waste management '87

Conference Location: Tucson, AZ, USA Conference Date: 1 Mar 1987

Publisher: University of Arizona Nuclear Engineering Dept., Tucson, AZ

Publication Date: 1987 p 116-122

Report Number(s): CONF-870306-

Language: English

Abstract: In Japan, radioactive spent ion exchange resins which arise in nuclear power plants are mainly stored in exclusive tanks, now. This is not only because the quantity of the spent resins is relatively small and the tank storage has been sufficient to store them for a considerably long term but because the fact that the spent resins are organic materials with a relatively high activity makes it uneasy to produce a stable form by conventional solidification methods. However, recently, the plan and criteria for final storage/disposal of nuclear power plant waste are under development. Considering these conditions, it is necessary in the near future to effectively convert the spent resins into a material of a stable form suitable for the final storage/disposal. Mitsubishi Heavy Industries, Ltd. is developing a spent resin treatment system utilizing a radionuclide-resin separation technique which is flexibly applicable to existing power plants and has obtained prospects of its practical use. This paper places a focus on describing the developmental work on radionuclide-resin separation and related techniques, the key of the treatment system.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
02052558 AIX-18-094267; ERA-13-004375; EDB-87-180517

Title: Environmental isotopes assist in the site assessment of Vaalputs
radioactive waste disposal facility

Author(s): Verhagen, B.T.; Levin, M.; Ainslie, L.C. (ed.)

Affiliation: Wits-CSIR Schonland Research Centre for Nuclear Sciences,
University of the Witwatersrand, Johannesburg, South Africa Nuclear
Development Corp. of South Africa, Pty. Ltd., Pelindaba, Pretoria

Title: Radwaste '86: proceedings volume. Conference on the treatment and
containment of radioactive waste, and its disposal in arid environments

Corporate Source: Nuclear Development Corp. of South Africa (Pty.) Ltd.,
Pelindaba, Pretoria

Conference Title: Conference on the treatment and containment of
radioactive wastes and disposal in arid environments (Radwaste '86)

Conference Location: Cape Town, South Africa Conference Date: 7 Sep 1986

Publication Date: Dec 1986 p 983-999

Report Number(s): INIS-mf-11045; CONF-860909-

Order Number: DE88700435

Language: English

Availability: NTIS (US Sales Only), PC A99/MF A01.

Abstract: The first South African nuclear waste disposal facility is to be
sited in an arid environment with an average annual rainfall of about
78mm. The ground water might therefore be virtually stationary, making
the geohydrology of the area crucial in the assessment of radionuclide
dispersal difficult to study with standard hydraulic methods.

Environmental isotopes, which label the water itself and some of its
dissolved constituents are able to give synoptic information about the
ground water; from this, some projections about future mobility can be
made. Tritium profiles in the unsaturated zone show the limited extent
of rain water infiltration, which generally extends down to 3-4 metres,
with sporadic evidence of deeper penetration through cracks and
rootholes in the thick clay cover. Soil moisture therefore seems to
occur in tightly bound and more mobile components. This is confirmed by
occasionally measurable tritium observed in the saturated zone.

Radiocarbon in the ground water cannot be simply interpreted on account
of the nature of the granite aquifer. Although suggesting ages of
several thousands of years, radiocarbon proves that the water is not
'fossil' or derived from the last pluvial period, postulated to have
occurred some 12,000 years ago. Recharge appears to be more ongoing and
to occur periodically and locally as a result of outliers within the
present climatological regime. Regional movement of ground water is
however very limited, as spatial variations seen in the radiocarbon
data of the ground water are non-systematic. These conclusions are
supported by the distribution of the non-radioactive isotopes, such as
oxygen-18.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02050115 AIX-18-094600; ERA-13-003497; EDB-87-178074

Title: Radioactive fall-out from the Chernobyl disaster, and its aftermath
in Central Europe

Author(s): Mueller-Broich, A.; Ainslie, L.C. (ed.)

Affiliation: Regensburg Univ., Germany, F.R.

Title: Radwaste '86: proceedings volume. Conference on the treatment and
containment of radioactive waste, and its disposal in arid environments

Corporate Source: Nuclear Development Corp. of South Africa (Pty.) Ltd.,
Pelindaba, Pretoria

Conference Title: Conference on the treatment and containment of
radioactive wastes and disposal in arid environments (Radwaste '86)

Conference Location: Cape Town, South Africa Conference Date: 7 Sep 1986

Publication Date: Dec 1986 p 615-634

Report Number(s): INIS-mf-11045; CONF-860909-

Order Number: DE88700435

Language: English

Availability: NTIS (US Sales Only), PC A99/MF A01.

Abstract: Radioactive fall-out originating from the disaster of the nuclear power station at Chernobyl in the Soviet Union was measured in Bavaria and other parts of Central Europe. Nuclide composition and spatial distribution of fall-out are presented and compared to radioactive debris from nuclear bomb tests. The uptake of radioactive material by plants and its passage into human food is discussed. The contribution of direct deposition, redistribution within plants and transfer from soil into plants is considered. Factors determining the paths of radioactive material into milk and meat are outlined. Safety precautions against excessive incorporation of radioactivity issued by the authorities are given. Irradiation of humans from external and internal fall-out is assessed. Nuclides composition is shown to be of major importance only for internal radiation. In view of the dominating abundance of radioiodine and radiocesium the differing physical and biochemical qualities of these nuclides are described in more detail. Finally, the resulting risk of cancer induction including leukemia is considered.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02049220 AIX-18-095898; ERA-13-003113; EDB-87-177179

Title: Safety assessment for radwaste disposal in Korea: Pt. 1.

Development of a code for simplified safety analysis

Author(s): Suh, I.S.; Park, H.H.; Han, K.W.; Hahn, P.S.; Ainslie, L.C.
(ed.)

Affiliation: Korea Advanced Energy Research Inst., Daeduk, Republic of
Korea

Title: Radwaste '86: proceedings volume. Conference on the treatment and
containment of radioactive waste, and its disposal in arid environments

Corporate Source: Nuclear Development Corp. of South Africa (Pty.) Ltd.,
Pelindaba, Pretoria

Conference Title: Conference on the treatment and containment of
radioactive wastes and disposal in arid environments (Radwaste '86)

Conference Location: Cape Town, South Africa Conference Date: 7 Sep 1986

Publication Date: Dec 1986 p 899-913

Report Number(s): INIS-mf-11045; CONF-860909-

Order Number: DE88700435

Language: English

Availability: NTIS (US Sales Only), PC A99/MF A01.

Abstract: A simplified safety analysis code has been established in order
to provide a basic methodology for the preliminary selection of a
disposal method. The disposal type selection is prerequisite to meet
the requirements of low and intermediate level radwaste management
program in Korea. The code covers resaturation and leaching, migration
through fracture-porous media transport such that the rock cavern
disposal option can be evaluated compared with that of shallow land
burial.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02049209 AIX-18-094652; ERA-13-003093; EDB-87-177168

Title: Methodology for performing safety assessments for potential radioactive waste disposal facilities

Author(s): Fitzpatrick, J.; Gralewski, Z.A.; Vande Putte, D.; Waplington, G.; Ainslie, L.C. (ed.)

Affiliation: Electrowatt Engineering Services Ltd., Horsham, UK

Title: Radwaste '86: proceedings volume. Conference on the treatment and containment of radioactive waste, and its disposal in arid environments

Corporate Source: Nuclear Development Corp. of South Africa (Pty.) Ltd., Pelindaba, Pretoria

Conference Title: Conference on the treatment and containment of radioactive wastes and disposal in arid environments (Radwaste '86)

Conference Location: Cape Town, South Africa Conference Date: 7 Sep 1986

Publication Date: Dec 1986 p 351-363

Report Number(s): INIS-mf-11045; CONF-860909-

Order Number: DE88700435

Language: English

Availability: NTIS (US Sales Only), PC A99/MF A01.

Abstract: Current strategies for the management of all types of radioactive wastes have as their ultimate aim the disposal of these wastes safely isolated from man's environment. The primary concern in establishing the suitability of a site is the safety of disposal and therefore an essential requirement is a safety assessment. This paper outlines a methodology developed by Electrowatt Engineering Services (UK) Limited for performing safety assessments of radioactive waste disposal systems. The methodology consists of a step by step approach from establishing the virgin site characteristics, to predicting the risk from releases in the future (up to millions of years). Both simple and more complex mathematical models are used. The simpler models are used to give a first indication of the safety of the system and to help identify data requirements for more complex models. The disposal system is divided into three regions namely near field, far field and biosphere. In the near field the effectiveness of the chosen engineered barriers are assessed in terms of their ability to provide both physical and chemical containment of the radionuclides. For the far field the ability of the chosen site is assessed in terms of inhibiting the transport of nuclides from the near field to the biosphere. Both a reference system and release enhancing scenarios are assessed. In the biosphere various exposure pathways can be analysed based on current human habits and projected future hypothetical practices.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02049207 AIX-18-094637; ERA-13-003091; EDB-87-177166

Title: Vaalputs radiological environmental monitoring programme

Author(s): Van As, D.; Posnik, S.J.; Bain, C.A.R.; Ainslie, L.C. (ed.)

Affiliation: Nuclear Development Corp. of South Africa, Pty. Ltd.,

Pelindaba, Pretoria

Title: Radwaste '86: proceedings volume. Conference on the treatment and containment of radioactive waste, and its disposal in arid environments

Corporate Source: Nuclear Development Corp. of South Africa (Pty.) Ltd.,

Pelindaba, Pretoria

Conference Title: Conference on the treatment and containment of radioactive wastes and disposal in arid environments (Radwaste '86)

Conference Location: Cape Town, South Africa Conference Date: 7 Sep 1986

Publication Date: Dec 1986 p 943-961

Report Number(s): INIS-mf-11045; CONF-860909-

Order Number: DE88700435

Language: English

Availability: NTIS (US Sales Only), PC A99/MF A01.

Abstract: An environmental monitoring programme was initiated two years before radioactive waste was due to be disposed of at the Vaalputs site. During this time a database was established against which future changes in the radiation levels of the environment could be measured. The monitoring network included the measurement of radiation doses, radioactivity levels in soil, vegetation, groundwater, and agricultural produce. A natural radiation dose to the average individual of 2,2 mSv per annum was established. Meteorological parameters were collected and used to assess the potential release and transport of radioactivity through the environment. A survey of the habits of the surrounding population was conducted to identify the principal food chains. In addition to complying with the licensing requirements for the waste disposal site, the environmental monitoring programme is contributing valuable scientific information on evapotranspiration and percolation in semi-arid environments.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02049200 AIX-18-094562; ERA-13-003084; EDB-87-177159

Title: Modelling and prediction of radionuclide migration from shallow, subgrade nuclear waste facilities in arid environments

Author(s): Smith, A.; Ward, A.; Geldenhuys, S.; Ainslie, L.C. (ed.)

Affiliation: Steffen, Robertson and Kirsten, B.C. Inc., Canada Steffen, Robertson and Kirsten, Mining Inc., South Africa

Title: Radwaste '86: proceedings volume. Conference on the treatment and containment of radioactive waste, and its disposal in arid environments

Corporate Source: Nuclear Development Corp. of South Africa (Pty.) Ltd., Pelindaba, Pretoria

Conference Title: Conference on the treatment and containment of radioactive wastes and disposal in arid environments (Radwaste '86)

Conference Location: Cape Town, South Africa Conference Date: 7 Sep 1986

Publication Date: Dec 1986 p 825-836

Report Number(s): INIS-mf-11045; CONF-860909-

Order Number: DE88700435

Language: English

Availability: NTIS (US Sales Only), PC A99/MF A01.

Abstract: Over the past fifteen years, prodigious efforts and significant advances have been made in methods of prediction of the migration rate of dissolved species in aqueous systems. Despite such work, there remain formidable obstacles in prediction of solute transport in the unsaturated zone over the long time periods necessarily related to the radionuclide bearing wastes. The objective of this paper is to consider the methods, issues and problems with the use of predictive solute transport models for radionuclide migration from nuclear waste disposal in arid environments, if and when engineering containment of the waste fails. Having considered the ability for long term solute prediction for a number of geological environments, the advantages of a disposal environment in which the solute transport process is diffusion controlled will be described.

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<DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02049069 ERA-13-003033; EDB-87-177028

Title: Greater confinement disposal and saltstone waste disposal technology

Author(s): Sturm, H.F. Jr.; Stone, J.A.

Affiliation: Savannah River Lab., Aiken, SC

Title: Proceedings of the eight annual DOE low-level waste management

forum: Technical Session 6, Waste treatment

Corporate Source: EG and G Idaho, Inc., Idaho Falls (USA)

Conference Title: 8. annual participants' information meeting of the DOE
Low-Level Waste Management Program

Conference Location: Denver, CO, USA Conference Date: 22 Sep 1986

Publication Date: Feb 1987 p 77-80

Report Number(s): CONF-860990-Pt.6

Order Number: DE87012447

Language: English

Availability: NTIS, PC A05/MF A01; 1.

Abstract: A Greater Confinement Disposal (GCD) demonstration facility
consisting of 20 GCD boreholes, for solid, low-level radioactive waste,
has been in operation at the Savannah River Plant since 1984.

Construction of a Greater Confinement Disposal trench will be completed
in late 1986. Low-Level waste salt solution, separated from high-level
nuclear waste by a process combining precipitation, adsorption, and
filtration, will be mixed with a cement-fly ash blend to form
saltstone. The saltstone will be disposed of onsite in an engineered
disposal area. Based on mathematical predictions, the saltstone
disposal area is designed to meet or exceed ground water standards for
all potential contaminants. 5 references, 2 figures.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

02049068 ERA-13-003032; EDB-87-177027

Title: Stabilization of mixed waste at INEL: summary paper

Author(s): Boehmer, A.M.; Gillins, R.L.; Larsen, M.M.

Title: Proceedings of the eight annual DOE low-level waste management

forum: Technical Session 6, Waste treatment

Corporate Source: EG and G Idaho, Inc., Idaho Falls (USA)

Conference Title: 8. annual participants' information meeting of the DOE
Low-Level Waste Management Program

Conference Location: Denver, CO, USA Conference Date: 22 Sep 1986

Publication Date: Feb 1987 p 74-76

Report Number(s): CONF-860990-Pt.6

Order Number: DE87012447

Language: English

Availability: NTIS, PC A05/MF A01; 1.

Abstract: There is one category of low-level radioactive waste (LLRW) which cannot be disposed of at the Idaho National Engineering Laboratory (INEL). LLRW, which is also hazardous (as defined by the Resource Conservation and Recovery Act (RCRA) in 40 CFR 261), is considered a radioactive mixed waste (RMW). The Department of Energy - Idaho Operations Office has decided that the Radioactive Waste Management Complex (RWMC), which is the INEL's LLRW disposal facility, shall not accept RMW. Proper disposition of a hazardous waste (HW) requires that the HW be sent to an Environmental Protection Agency (EPA) permitted disposal facility. Existing EPA-permitted disposal facilities will not accept radioactively contaminated hazardous waste since they do not have an NRC license and are not designed to handle radioactivity. There are two other options for dealing with RMW: to treat it so that it is no longer hazardous or radioactive, or to store it until it can be treated or legally disposed of. Treatment and storage of a RMW also requires an EPA permit. The INEL has applied to the EPA for a RCRA Part B permit. The permit application includes a storage facility for HW, a storage facility for RMW, incineration of HW and RMW, and stabilization of HW and RMW. This paper describes the stabilization development activities conducted at the INEL by EG and G Idaho, Inc., for the DOE.

Record - 289

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01889877 IFI-86-005330; EDB-87-017519

Title: Comparative behavior of americium and plutonium in wastewater

Author(s): Tsvetaeva, N.E.; Filin, V.M.; Ragimov, T.K.; Rudaya, L.Y.;
Shapiro, K.Y.; Shcherbakov, B.Y.

Conference Title: 2. All-Union conference on the chemistry of the
transplutonium elements

Conference Location: Dimitrovgrad, USSR Conference Date: 21 Jun 1983

Source: Sov. Radiochem. (Engl. Transl.) (United States) v 28:1. Coden:
SVRDA

Publication Date: Sep 1986 p 114-118

Report Number(s): CONF-8306297-

Language: English

Abstract: This paper studies the behavior of trace americium and plutonium in wastewater fed into purification systems. Activities of the elements were determined on a semiconductive alpha-ray spectrometer. The distribution nonuniformity, or heterogeneity, of americium and plutonium per unit volume of wastewater was determined quantitatively before and after passage through filter papers. The two elements were found to be in a colloidal or pseudocolloidal state in the original wastewater sample at pH 6. On acidifying the wastewater from pH 4 to 1 M nitric acid the americium passed quantitatively into the water phase but the most plutonium remained in the colloidal or pseudocolloidal state. The plutonium also passed quantitatively into the water phase in wastewater at a 1 M nitric acid acidity but only after a prolonged (12-day) hold. A knowledge of the heterogeneity of plutonium and americium in wastewaters made it possible to quickly distinguish their state, i.e., colloidal, pseudocolloidal, or in true solution.

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Record - 290

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01885842 AIX-17-082028; ERA-12-008937; EDB-87-013479

Title: Geohydrology of the Vaalputs radioactive waste disposal facility

Author(s): Levin, M.; Hambleton-Jones, B.B.; Raubenheimer, E.; Niemand, N.; Ainslie, L.C. (ed.)

Affiliation: Nuclear Development Corp. of South Africa, Pty. Ltd.,
Pelindaba, Pretoria

Title: Radwaste '86: Abstracts volume. Conference on the treatment and
containment of radioactive waste and its disposal in arid regions

Corporate Source: Nuclear Development Corp. of South Africa (Pty.) Ltd.,
Pelindaba, Pretoria

Conference Title: Conference on the treatment and containment of
radioactive wastes and disposal in arid environments (Radwaste '86)

Conference Location: Cape Town, South Africa Conference Date: 7 Sep 1986

Publication Date: Aug 1986 p vp

Report Number(s): INIS-mf-10514; CONF-860909-Absts.

Order Number: DE87700294

Language: English

Availability: NTIS (US Sales Only), PC A05/MF A01.

Abstract: None

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Record - 291

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01849850 NOV-85-024362; EDB-86-173740

Title: Uranium tailings reclamation - Regulations, design and construction

Author(s): Thiers, G.R. ; Wathen, T.R.; Post, R.G.

Affiliation: Morrison-Knudsen Engineers, Inc., San Francisco, CA 94105

Title: Waste management 86. Volume 1:General interest

Conference Title: Waste management '86

Conference Location: Tucson, AZ, USA Conference Date: 2 Mar 1986

Publisher: University of Arizona, Tucson, AZ

Publication Date: 1986 p 429-432

Report Number(s): CONF-860317-

Language: English

Abstract: The design and construction of systems to clean up or stabilize designated tailings sites are governed by numerous environmental regulations and technical guidelines. Design criteria have been established to fulfill these regulations and guidelines. A compacted soil cover, a radon barrier, will inhibit radon emanation and will prevent groundwater contamination in conformance with the regulations.

To provide environmental protection during the construction of the isolation system requires a variety of federal, state and local permits, approvals and notifications. Temporary features that provide the necessary environmental protection during construction include flood control berms, intercept ditches, sediment control facilities, and evaporation ponds or wastewater treatment facilities. The remedial action recently completed at the Uranium Mill Tailings Remedial Action (UMTRA) site at Canonsburg, Pennsylvania has shown that the design for the isolation of tailings may need to be adjusted in response to unforeseen site conditions that develop during construction. However, this experience also demonstrates that the construction of a waste isolation project can proceed to a successful conclusion and satisfy basic regulatory requirements.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01791510 INS-86-020057; ERA-11-037554; EDB-86-115228

Title: Treatment of radioactive mixed wastes in commercial low-level wastes

Author(s): Kempf, C.R.; MacKenzie, D.R.

Affiliation: Brookhaven National Lab., Upton, NY

Title: Proceedings of the seventh annual participants information meeting.

DOE Low-Level Waste Management Program

Corporate Source: EG and G Idaho, Inc., Idaho Falls (USA)

Conference Title: 7. annual DOE LLWMP participants information meeting

Conference Location: Las Vegas, NV, USA Conference Date: 10 Sep 1985

Publication Date: Feb 1986 p 324-333

Report Number(s): CONF-8509121-

Order Number: DE86010152

Language: English

Availability: NTIS, PC A99/MF A01; 1.

Abstract: Management options for three generic categories of radioactive mixed waste in commercial low-level wastes have been identified and evaluated. These wastes were characterized as part of a BNL study in which a large number of generators were surveyed for information on potentially hazardous low-level wastes. The general management targets adopted for mixed wastes are immobilization, destruction, and reclamation. It is possible that these targets may not be practical for some wastes, and for these, goals of stabilization or reduction of hazard are addressed. Solidification, absorption, incineration, acid digestion, segregation, and substitution have been considered for organic liquid wastes. Containment, segregation, and decontamination and re-use have been considered for lead metal wastes which have themselves been contaminated and are not used for purposes of waste disposal shielding, packaging, or containment. For chromium-containing wastes, solidification, incineration, containment, substitution, chemical reduction, and biological removal have been considered. For each of these wastes, the management option evaluation has necessarily included assessment/estimation of the effect of the treatment on both the radiological and potential chemical hazards present.

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Record - 293

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01783480 EDB-86-107195

Title: The effects of barium chloride treatment of uranium ore on /sup 222/Rn emanation and /sup 226/Ra leachability from mill tailings

Author(s): Ibrahim, S.A.; Church, S.L.; Whicker, F.W.

Affiliation: Colorado State Univ., Fort Collins, CO

Title: Management of uranium mill tailings, low level waste, and hazardous waste

Conference Title: 7. symposium on management of uranium mill tailings, low-level waste and hazardous waste

Conference Location: Ft. Collins, CO, USA Conference Date: 6 Feb 1985

Publisher: Colorado State University, Fort Collins, CO

Publication Date: 1985 p 327-334

Report Number(s): CONF-850242-

Contract Number (DOE): AC02-79EV10305

Language: English

Abstract: The purpose of this laboratory study was to investigate the effectiveness of barium chloride treatment of uranium ore on /sup 222/Rn emanation from mill tailings, /sup 226/Ra level in wastewater, and the leachability of radium from tailings. It has been shown that barium sulfate is an excellent carrier for radium and that barium sulfate crystals have high retention capacity for radon gas produced by radium trapped within the lattice. Ground uranium ore from a mine in Wyoming was mixed with water to form a 1:1 ratio before barium and potassium chlorides were added at concentrations of 0, 10, 25, 50, and 100 mg per liter of slurry. The ore was then subjected to a simulated mill process using sulfuric acid leaching. The liquid representing tailings pond water was separated and analyzed for /sup 226/Ra and the solid fraction, representing mill tailings, was tested for radon emanation and the leachability of radium by deionized water. This study suggests that barium treatment of uranium ore prior to sulfuric acid leaching could be effective in reducing radon emanation from tailings and also in reducing the /sup 226/Ra concentration of wastewater. Leachability of radium from treated tailings was markedly reduced.

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Record - 294

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01761926 EDB-86-085626; INS-87-024455

Title: Radiochemical determination of radionuclides in nuclear power plant
wastewaters and water-coolant reservoirs I. Selection of conditions for
the simultaneous preconcentration of gamma-emitting radionuclides

Author(s): Mel'nikov, V.A.; Epimakhov, V.N.; Moskvin, L.N.

Source: Sov. Radiochem. (Engl. Transl.) (United States) v 26:6. Coden:
SVRDA

Publication Date: Jul 1985 p 745-750

Note: Translated from Radiokhimiya, Vol. 26, No. 6, pp. 783-789,
November-December, 1984

Language: English

Abstract: The authors present a workable method for radiochemical analysis
involving radionuclide preconcentration by a set of the following
sorbents: an initial sorbent to collect the gamma-emitting
radionuclides; and a subsequent sorbent for the preconcentration of Sr.
They discuss the selection of conditions for simultaneous sorptive
preconcentration of the gamma-emitting radionuclides. Experimental
results confirm the usefulness of the method for preconcentrating and
determining radionuclides.

297

Record - 295

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01696646 INS-86-001943; ERA-11-008472; EDB-86-015204

Title: Evaluation of trench chemical treatment for radiostrontium immobilization and evaluation of in situ Cerenkov radiation detection of ^{90}Sr

Author(s): Spalding, B.P.

Affiliation: Oak Ridge National Lab., TN

Title: Proceedings of the sixth annual Participants' Information Meeting
DOE Low-Level Waste Management Program

Corporate Source: EG and G Idaho, Inc., Idaho Falls (USA)

Conference Title: 6. annual Low-Level Waste Management Program
participants' information meeting

Conference Location: Denver, CO, USA Conference Date: 11 Sep 1984

Publication Date: Dec 1984 p 301-321

Report Number(s): CONF-8409115-

Order Number: DE85011095

Language: English

Availability: NTIS, PC A99/MF A01; 1.

Abstract: The corrective measures technology task for humid sites consists of two subtasks. The first has the objective of demonstrating that caustic soda/soda ash injection into a closed trench's backfill can achieve a fixation of radiostrontium from further contamination of surrounding groundwaters. Monitoring of groundwater in and around a demonstration trench, first treated in 1980, has indicated a return to near pretreatment ^{90}Sr concentrations. However, soil samples taken in 1984 showed comparable amounts of ^{90}Sr -CaCO₃ and alkalinity to those found in samples obtained in 1981. Less than 15% of the ^{90}Sr in these samples of backfill from the trench was leachable by 0.1N CaCl₂ indicating that most of the ^{90}Sr has remained in a fixed form up to the present. Depth incremental core samples were obtained immediately downslope of the trench and most of the ^{90}Sr was found near the surface. Such a condition indicated that overflow of groundwater from the trench during wet periods has been the major route for ^{90}Sr migration from the trench. The second subtask has the objective of demonstrating the feasibility of detecting ^{90}Sr in groundwater via in situ Cerenkov radiation measurement. A prototype Cerenkov detector was fabricated of a photomultiplier tube optically coupled to a light-sealed sample chamber for lowering into a well. The device was tested on groundwaters from a group of monitoring wells within an ORNL solid waste storage area. The estimates of ^{90}Sr concentrations were comparable to those found by other counting procedures. A second prototype detector is being designed to employ dual photomultiplier tubes in a coincident counting mode to lower background counting rates.

Record - 296

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01678722 AIX-16-074554; EDB-86-005642

Title: Accidental internal contamination of man by plutonium-239 and caesium-137: Treatment possibilities

Author(s): Dziuk, E.; Baltrukiewicz, Z.; Siekierzynski, M. (Postgraduate Medical Education Centre, Warsaw (Poland))

Title: Assessment of radioactive contamination in man 1984. Proceedings of an international symposium on the assessment of radioactive contamination in man organized by the IAEA in cooperation with the WHO and held in Paris, 19-23 November 1984

Series/Collection Title: Proceedings series

Conference Title: International symposium on assessment of radioactive contamination in man

Conference Location: Paris, France Conference Date: 19 Nov 1984

Publisher: IAEA, Vienna, Austria

Publication Date: 1985 p 415-419

Report Number(s): CONF-841107-; IAEA-SM-276/32

Language: English

Abstract: Three cases of accidental contamination with plutonium-239 and caesium-137 are reported. They include two scientists working with ²³⁹Pu. The source was unsealed during experiments and contamination of the men occurred. Purgatives and DTPA were administered on the first day. The daily excretion of ²³⁹Pu in the urine increased from 0.06 to 0.25 Bq/L in the first patient, and from 0.08 to 0.17 Bq/L in the second. The third case, a woman, was irradiating samples of colloidal suspensions using a source of caesium-137 of 92.5 GBq total activity. Five days later, external and internal contamination was observed. Investigation of the chromosomes in peripheral blood lymphocytes showed chromatide aberrations. Daily excretion of ¹³⁷Cs in urine ranged from 0.44 to 1.28 kBq. Beginning from the first days of her stay in hospital furosemide with potassium and large quantities of liquid were administered. No effect of the diuretic on the excretion of ¹³⁷Cs was observed. It is concluded that in the first two cases, in the men contaminated with ²³⁹Pu, the treatment with DTPA was observed to have a positive result because the treatment was introduced immediately after contamination. In the third case, the diuretic did not influence the excretion of ¹³⁷Cs in the urine, presumably because the treatment was given too late after intake, when ¹³⁷Cs had been already distributed in the body.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01647346 AIX-16-054990; EDB-85-154125

Author(s): Williamson, R.

Title: Physical characterisation and transmission electron microscopy of
gas-filled sputter deposited copper

Corporate Source: UKAEA Atomic Energy Research Establishment, Harwell.
Materials Development Div.

Publication Date: Jan 1985 p 58

Report Number(s): AERE-R-11273

Language: English

Availability: H.M. Stationery Office, London, price Pound 4.25.

Abstract: A process is being developed at AERE Harwell for the immobilisation of ^{85}Kr in a metallic matrix to provide safe containment of the gas arising from the reprocessing of nuclear fuel. The process immobilises the krypton as minute gas bubbles in a metal matrix, by combined ion implantation and sputtering. A 50 kW half scale pilot plant has been built to demonstrate the process on a scale comparable with that of an industrial plant, and a copper matrix 22 mm thick produced. This report describes and summarises assessment tests on the copper matrix and some measurements on a subsequent nickel matrix. A study of the annealing behaviour of minute krypton gas bubbles in a copper matrix has been carried out using the transmission electron microscope to investigate changes in structure, and to relate these with the thermal coefficient of expansion. As the material is annealed, the mean gas bubble diameter increases from 1.5 nm to 3.2 nm at 450 deg C. Twins were propagated during annealing and enabled gas to be transported to the twin and grain boundaries. In agreement with theory, the thermal coefficient of expansion increased from $15.6 \times 10^{-6}/\text{K}$ to $21.4 \times 10^{-6}/\text{K}$ as the bubble size increased due to annealing.

300

Record - 298

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01488654 AIX-15-063824; EDB-84-186463

Title: Transport of zinc and manganese tracers across the Magela Creek system, Northern Territory

Author(s): Airey, P.L.; Calf, G.E.; Davison, A.; Easey, J.F. (Australian Atomic Energy Commission Research Establishment, Lucas Heights); Lucas, P. (Ranger Uranium Mines, Jabiru (Australia)); Morley, A. (Pancontinental Mining Ltd., Sydney (Australia))

Title: Proceedings of international specialist conference on water regime in relation to milling, mining and waste treatment including rehabilitation with emphasis on uranium mining

Conference Title: International specialist conference on water regime in relation to milling, mining and waste treatment

Conference Location: Darwin, Australia Conference Date: 4 Sep 1983

Publisher: The Association, Melbourne, Australia

Publication Date: 1983 p vp

Report Number(s): CONF-8309275-

Language: English

Abstract: A study has been made of the transport of ^{54}Mn and ^{65}Zn released into Magela Creek near Jabiru and into the Leichhardt Billabong on the Magela Plains. Near Jabiru, both isotopes were systematically removed from the surface water by adsorption on the bottom sediments. The ^{54}Mn was preferentially removed initially; the ^{65}Zn adsorption became relatively more significant further downstream. Systematic differences are thought to reflect the time-dependent evolution of the species distribution in fresh water systems. The heavy metal tracers injected into the Leichhardt Billabong were non-selectively removed by the vegetation as the radioactive plume crossed onto the shallow flood plain.

Record - 299

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01488589 AIX-15-063772; EDB-84-186398

Title: Groundwater induced migration of uranium and its daughter products
in the vicinity of the Ranger No. 1 orebody

Author(s): Airey, P.L.; Golian, C.; Nightingale, T.; Roman, D.; Short,
S. (Australian Atomic Energy Commission Research Establishment, Lucas
Heights)

Title: Proceedings of international specialist conference on water regime
in relation to milling, mining and waste treatment including
rehabilitation with emphasis on uranium mining

Conference Title: International specialist conference on water regime in
relation to milling, mining and waste treatment

Conference Location: Darwin, Australia Conference Date: 4 Sep 1983

Publisher: The Association, Melbourne, Australia

Publication Date: 1983 p vp

Report Number(s): CONF-8309275-

Language: English

Abstract: Extensive measurements of uranium series disequilibria have been
made in ore samples from the Ranger No. 1 ore body and in the
intersecting groundwater. A four-compartment open system model has
been developed from which it is possible to define regions of net
uranium leaching and of net deposition within the ore body. From
knowledge of the average flow rate of the groundwater obtained from
carbon-14 dating, and the dissolved uranium concentrations, the extent
to which the migration of uranium has been retarded by the aquifer over
the accessible time scale (10^{sup} 4/ - 10^{sup} 5/ years) has been
calculated.

302

Record - 300

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01485229 AIX-15-064926; EDB-84-183038

Title: Natural analogues - a way to increase confidence in predictions of long-term performance of radioactive waste disposal

Author(s): Birchard, G.F.; Alexander, D.H. (Nuclear Regulatory Commission, Washington, DC (USA))

Title: Proceedings of international specialist conference on water regime in relation to milling, mining and waste treatment including rehabilitation with emphasis on uranium mining

Conference Title: International specialist conference on water regime in relation to milling, mining and waste treatment

Conference Location: Darwin, Australia Conference Date: 4 Sep 1983

Publisher: The Association, Melbourne, Australia

Publication Date: 1983 p vp

Report Number(s): CONF-8309275-

Language: English

Abstract: The US NRC is responsible for evaluating sites and designs for HLW repositories. It is concerned about long-term predictions and scaling laboratory experiments to field conditions and has therefore supported a substantial natural analogues effort. Brief details of some of the projects supported are given. They include studies of existing low-level waste sites and mill tailings piles, the effect of speciation on radionuclide migration, radionuclide migration from rich uranium ore bodies, and the kinetics of field geochemical retardation processes using isotopic ratios.

Record - 301

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
01396670 INS-84-011638; ERA-09-029280; EDB-84-094468

Title: Reduction of radiostrontium mobility in acid soils by carbonate treatment

Author(s): Browman, M.G.; Spalding, B.P.

Affiliation: Oak Ridge National Lab., TN

Source: J. Environ. Qual. (United States) v 13:1. Coden: JEVQA

Publication Date: Jan-Mar 1984 p 166-172

Contract Number (DOE): W-7405-ENG-26

Language: English

Abstract: Development of chemical treatments to immobilize ^{90}Sr in soil to prevent its leaching from radioactive waste disposed in shallow land burial sites is highly desirable. Six in situ carbonate-precipitating treatments, varying the amounts of carbonate, alkaline earth cation (Ca or Ba as chlorides), and order of addition were examined for their ability to immobilize radiostrontium in laboratory soil columns. The $\text{Na}_{\text{sub} 2}\text{CO}_{\text{sub} 3}$ -followed by $\text{CaCl}_{\text{sub} 2}$ -treatment was most consistently successful at reducing the leachability of radiostrontium by 0.05M $\text{CaCl}_{\text{sub} 2}$ from three low organic matter-acid soils, immobilizing as much as 53% of added radiostrontium. For the high organic matter-slightly acid soil, $\text{Na}_{\text{sub} 2}\text{CO}_{\text{sub} 3}$ alone, without supplemental Ca or Ba, resulted in the best immobilization (39%); dissolution of soil organic matter and the alkalinity-induced aggregate dispersion probably interfered with $\text{CaCO}_{\text{sub} 3}$ and/or $\text{BaCO}_{\text{sub} 3}$ precipitation. Success of the treatments is based primarily on their ability to generate, in situ, $\text{Ca}(\text{Sr}, \text{Mg})\text{CO}_{\text{sub} 3}$ or $\text{Ba}(\text{Ca}, \text{Mg}, \text{Sr})\text{CO}_{\text{sub} 3}$ precipitates that exchange radiostrontium very slowly with eluting Ca ions. Allied tests with ^{137}Cs , which is commonly codisposed with ^{90}Sr , indicated that the treatments describe did not interfere with the natural tendency of the selected soils to fix ^{137}Cs strongly.

Record - 302

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01354267 EDB-84-051946

Title: Redistribution and increased brain uptake of lead in rats after treatment with diethyldithiocarbamate

Author(s): Oskarsson, A.; Chambers, P.L.; Chambers, C.M. (Trinity Coll., Dublin (Ireland)); Gitter, S. (Tel Aviv Univ. (Israel). Inst. for Occupational Health) (eds.)

Title: Toxicology in the use, misuse and abuse of food, drugs and chemicals

Conference Title: International conference of the European Society of Toxicology

Conference Location: Tel Aviv, Israel Conference Date: 21 Mar 1982

Publisher: Springer, Berlin, Germany, F.R.

Publication Date: 1983 p 279-284

Report Number(s): CONF-8203168-

Note: With 125 figs.

Language: English

Abstract: Diethyldithiocarbamate (DDTC), a chelating agent, is an active metabolite of disulfiram (Antabus) and is used in the rubber industry. The effect of DDTC on the tissue distribution of ^{203}Pb was studied in rats. Two groups of rats were given an i.v. injection of 100 $\mu\text{Ci}/\text{kg}$ ^{203}Pb (28.6 nmol/kg b.wt.) as lead acetate. After 10 min one group received 2 mmol/kg b.wt. of DDTC as an i.p. injection. Rats were killed 4 and 72 h after injection of ^{203}Pb and tissue concentration and excretion of ^{203}Pb was determined by gamma counting. The brain concentration of ^{203}Pb in DDTC-treated rats was nine times higher than in controls after 4 h and 14 times higher after 72 h. Treatment with DDTC also increased the lead concentration in fat about seven times at both survival intervals. On the other hand, uptake of ^{203}Pb in bone was reduced by treatment with DDTC and at 4 h also kidney and blood had a lower concentration of ^{203}Pb in DDTC-treated rats compared to controls. Kidney and femur of DDTC-treated rats had an increased ^{203}Pb concentration at 72 h compared to 4 h. Most of the lead was excreted via feces; 28% of the dose in DDTC-treated rats and 16% in controls during the first 72 h after injection. The urinary excretion of ^{203}Pb was higher in control rats (11% of the dose) than in DDTC-treated rats (6%). The results indicate that a lipid-soluble complex of lead and DDTC is formed, which is capable of penetrating the blood-brain barrier to a much higher extent than inorganic lead. The toxic effects of the lead-DDTC complex are not known, but one may expect that inorganic lead is released causing adverse effects in the central nervous system, when the lead-DDTC complex is further metabolized.

Record - 303

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01351503 EDB-84-049182

Author(s): Spalding, B.P.

Title: Field demonstration of in situ treatment of buried low-level radioactive solid waste with caustic soda and soda ash to immobilize ^{90}Sr

Corporate Source: Oak Ridge National Lab., TN (USA)

Publication Date: Feb 1984 p 79

Report Number(s): ORNL/TM-8990

Order Number: DE84009115

Contract Number (DOE): W-7405-ENG-26

Note: Portions are illegible in microfiche products. Original copy available until stock is exhausted

Language: English

Availability: NTIS, PC A05/MF A01; 1.

Abstract: A low-level radioactive solid waste disposal trench was injected on four occasions with solutions of caustic soda, soda ash, caustic soda, and lime/soda ash, respectively. Because investigations had indicated that ^{90}Sr could be coprecipitated with soil calcium carbonate by treatment with soda ash, this demonstration was undertaken as a test of its technical feasibility. After concentrations of ^{90}Sr and water hardness decreased within the intratrench monitoring wells; one well at the foot of the trench decreased from over 100 to a persistent level of less than 10 kBq of ^{90}Sr per liter. Recharge of ^{90}Sr from the trench to a sump immediately below was reduced by about 90%. Water hardness and ^{90}Sr concentrations were strongly correlated through time within each monitoring well, indicating that ^{90}Sr behaved as a tracer for soil calcium and magnesium. The disappearance of ^{90}Sr from the trench water, therefore, was an in situ water softening. Soil samples retrieved from the trench indicated that as much as 98% of the total ^{90}Sr was present as a coprecipitate with calcium carbonate. The hydrologic characterization of this trench indicated an average void space of 41% and an average trench-wall hydraulic conductivity of 3.4×10^{-7} m/s. Sampling of the trench's discharge contamination plume indicated that it had resulted from a combination of subsurface seepage and bathtub overflow during infrequent periods of intense precipitation. A generic assessment of soda ash treatment indicated that treatment would be most effective for soils of high cation exchange capacity with either low (< 20%) or high (> 80%) basic cation saturation of that cation exchange capacity.

Record - 304

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01315621 AIX-14-777248; EDB-84-013294

Title: Treatment, storage and disposal of low- and intermediate-level reactor wastes at Olkiluoto power plant

Author(s): Haerkonen, H.; Lehtinen, P.; Ruuskanen, A. (Teollisuuden Voima Oy (Finland))

Title: Conditioning of radioactive wastes for storage and disposal.

Proceedings of an international symposium organized by the IAEA, the CEC and the OECD NEA and held in Utrecht, the Netherlands, 21-25 June 1982

Series/Collection Title: Proceedings series

Conference Title: International symposium on the conditioning of radioactive wastes for storage and disposal

Conference Location: Utrecht, Netherlands Conference Date: 21 Jun 1982

Publisher: IAEA, Vienna, Austria

Publication Date: 1983 p 407-418

Report Number(s): CONF-820651-; IAEA-SM-261/14

Language: English

Abstract: Low- and intermediate-level waste is continuously produced during operation of a nuclear power plant. Reactor waste management can generally be divided into three main stages: conditioning, storage and disposal. At Olkiluoto power plant intermediate-level liquid waste is solidified by incorporation into bitumen. Compressible dry waste is compacted into 200 L steel drums. At present, all reactor waste produced is stored in the waste buildings of the plant units. A separate storage building for low-level waste is under construction and design of a storage facility for bituminized waste has been started. A great number of geological and hydrogeological investigations have been performed to assess the suitability of the bedrock at the power plant site for the disposal of low- and intermediate-level waste. As a part of this assessment, a preliminary design of an underground repository has been performed. Safety assessments indicate clearly that all low- and intermediate-level waste from the operation and decommissioning of Olkiluoto power plant can be stored and disposed of in a safe way. Consequently, current conditioning practices are considered fully adequate for storage and disposal.

Record - 305

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01238812 ERA-08-043366; EDB-83-138862

Author(s): Sherwood, D.R.; Serne, R.J.

Title: Tailings treatment techniques for uranium mill waste: a review of existing information (Neutralization processes, fixation processes, and specific constituent removal)

Corporate Source: Pacific Northwest Lab., Richland, WA (USA)

Publication Date: Jul 1983 p 81

Report Number(s): NUREG/CR-2938; PNL-4453

Order Number: DE83015038

Contract Number (DOE): AC06-76RL01830

Language: English

Availability: NTIS, PC A05/MF A01 - GPO \$4.50.

Abstract: Of primary concern at uranium mill sites in the United States is the potential of ground-water contamination from mill wastes that are disposed in tailings impoundments. Although many systems have been used to control seepage from tailings impoundments, most of these systems are limited in their ability to handle an excess of tailings solution.

Three general amelioration methods were identified: neutralization, fixation and specific constituent removal. During neutralization, a reagent is added to the tailings solution to neutralize the acidity and raise the pH to reduce the solubility of various pH sensitive contaminants. Fixation processes add materials such as lime, cement or asphalt to the waste to produce a physically stable composition that resists leaching of hazardous constituents. Specific constituent removal encompasses varying techniques, such as alternate ore leaching processes, effluent treatment with sorption, or ion exchange agents or selected precipitation that reduce specific constituent concentrations in tailings solution. Neutralization processes appear to be best suited for treating uranium mill tailings because they can, at a reasonable cost, limit the solution concentration of many contaminants. The effectiveness of the process depends on the reagent used as well as the waste being treated. Of the six reagents studied (lime, limestone, caustic soda, soda ash, combined limestone/lime and combined alumina/lime/soda), a combined treatment of limestone and lime seems best, especially for tailings containing ferric iron as the limestone economically buffers the solution acidity while the lime takes the pH to 8.0, an optimum level for heavy metal removal. For those tailings containing ferrous iron, lime alone works best. The costs for the lime/limestone or lime processes range from \$0.20 to \$1.00 per 1000 gal of treated water, excluding capital equipment costs.

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Record - 306

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01234297 AIX-14-717394; EDB-83-134346

Title: Biosphere pathways analysis for nuclear fuel waste management:
treatment of uncertainties and variability

Author(s): Mehta, K.; Sherman, G.R. (Atomic Energy of Canada Ltd., Pinawa,
Manitoba. Whiteshell Nuclear Research Establishment)

Title: Environmental migration of long-lived radionuclides. Proceedings
of an international symposium on migration in the terrestrial
environment of long-lived radionuclides from the nuclear fuel cycle
organized by the IAEA, the CEC and the OECD NEA and held in Knoxville,
USA, 27-31 July 1981

Conference Title: International symposium on migration in the terrestrial
environment of long-lived radionuclides from the nuclear fuel cycle

Conference Location: Knoxville, TN, USA Conference Date: 27 Jul 1981

Publisher: IAEA, Vienna, Austria

Publication Date: 1982 p 719-727

Report Number(s): CONF-810722-; IAEA-SM-257/85P

Language: English

Abstract: The Canadian concept for nuclear fuel waste management involves
burial of immobilized fuel waste in an underground vault located within
a hard-rock formation in the Canadian Shield. The environmental impact
of such a vault for the distant future is being analysed using the
method of pathways analysis. This paper briefly describes a preliminary
analysis of the total system, focusing on the pathways in the
biosphere. The parameters that characterize the biosphere are neither
constant nor precisely known. Our analysis takes into account
uncertainties and variability by using probability distributions for
parameter values rather than a single average value or a most
conservative value. The method is used to evaluate the sensitivity of
the estimated dose equivalent to man to the biosphere parameters used.

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Record - 307

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01220051 INS-83-008255; ERA-08-029218; EDB-83-120095

Title: Evaluation of geologic materials to limit biological intrusion of low-level waste site covers

Author(s): Hakonson, T.E.; White, G.C.; Karlen, E.M.

Affiliation: Los Alamos National Lab., NM

Title: Proceedings of the ANS topical meeting on the treatment and handling of radioactive wastes

Conference Title: ANS topical meeting on treatment and handling of radioactive wastes

Conference Location: Richland, WA, USA Conference Date: 19 Apr 1982

Publisher: Battelle Press, Columbus, OH

Publication Date: 1982 p 491-496

Report Number(s): CONF-820424-

Order Number: DE83007269

Language: English

Abstract: The long-term integrity of low-level waste shallow land burial sites is dependent on the interaction of physical, chemical, and biological factors that modify the waste containment system. This paper reports the preliminary results of a screening study to-determine the effectiveness of four biobarrier materials to stop plant root and animal penetration into simulated low-level wastes. Experiments employed 288 lysimeters consisting of 25-cm-diam PVC pipe, with four factors tested: plant species (alfalfa, barley, and sweet clover); top soil thickness (30 and 60 cm); biobarrier material (crushed tuff, bentonite clay, cobble, and cobble-gravel); and biobarrier thickness (clay-15, 30, and 45 cm, others 30, 60, and 90 cm). The crushed tuff, a sandy backfill material, offers little resistance to root and animal intrusion through the cover profile, while bentonite clay, cobble, and cobble-gravel combinations do reduce plant root and animal intrusion thorough cover profiles. However, dessication of the clay barrier by invading plant roots may limit the usefulness of this material as a moisture and/or biological barrier. The cobble-gravel combination appears to be the best candidate for further testing on a larger scale because the gravel helps impede the imigration of soil into the cobble layer - the probable cause of failure of cobble-only biobarriers.

Record - 308

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

01133198 EDB-83-033205

Author(s): Robertson, D.E.

Title: The reduction of reactor effluent water radionuclides by the addition of sodium silicate to process water; 105D half plant addition

Corporate Source: Pacific Northwest Lab., Richland, WA (USA)

Publisher: Pacific Northwest Lab., Richland, WA

Publication Date: Aug 1966 p 14

Academic Degree: Thesis (Ph.D.)

Language: English

Abstract: Research and development on the reduction of radionuclides discharged to the Columbia River in reactor effluent is described.

Sodium silicate was added to the process water supplying 1/2 of the D Reactor at an average concentration of 15 ppm, which gradually reduced the radionuclide concentration entering the Columbia River. After the 8th month an equilibrium condition was reached, and the levels of ⁷⁶As, ⁵¹Cr, ²³⁹Np, ³²P, ¹²⁴Sb, and ⁶⁴Cu were lowered by factors of about 9.0, 7.0, 6.0, 3.0, 3.0 to 5.0 and 1.5 respectively. Concentration of ⁶⁵Zn remained unchanged. The only significant increases were due to ²⁴Na, and trace amounts of ¹⁴⁰La and other rare earth elements. Cobalt-60 and ⁴⁶Sc behaved erratically. The studies suggest that if sodium silicate were used on a full scale (5 reactor basis), river concentration of radionuclides could be proportionally reduced.

Record - 309

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
00880106 EDB-82-054948

Author(s): Blanco, R.E.; Parker, F.L.

Title: Waste treatment and disposal semiannual progress report,
July-December 1965

Corporate Source: Oak Ridge National Lab., TN (USA)

Publication Date: Jun 1966 p 101

Report Number(s): ORNL-TM-1465

Contract Number (DOE): W-7405-ENG-26

Language: English

Availability: NTIS.

Abstract: Developments are reported for studies on: solidification of high-level wastes-engineering and laboratory studies; incorporation of intermediate-level waste in asphalt; water-recycle process; engineering, economic, and safety evaluations for tank storage; disposal by hydrofracturing; disposal in natural salt formations; soil studies; behavior of radionuclides in the ground; disposal of gases into permeable formations; and safety evaluation.

312

Record - 310

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00862940 AIX-12-640964; ERA-07-017467; EDB-82-037780

Title: Actinide diffusion in waste glasses

Author(s): Matzke, H. (Commission of the European Communities, Karlsruhe (Germany, F.R.). European Inst. for Transuranium Elements)

Title: Thermodynamics of nuclear materials 1979. Proceedings

Conference Title: International symposium on thermodynamics of nuclear materials

Conference Location: Julich, F.R. Germany Conference Date: 29 Jan 1979

Publisher: IAEA, Vienna, Austria

Publication Date: 1980 p 311-324

Report Number(s): CONF-790111-(Vol.1); IAEA-SM-236/05

Language: English

Abstract: The diffusion of ^{233}U and of ^{238}Pu and ^{239}Pu in phosphate glass, in different borosilicate glasses and in glass ceramics was investigated. Glasses with and without added simulated fission products were used. Some glasses also contained $\text{Gd}_{2}\text{O}_{3}$ as a neutron poison. The method of thin tracer layers and high resolution alpha spectroscopy were used to measure both depth and time dependence of diffusion. Diffusion rates were immeasurably small for $T < 390^{\circ}\text{C}$ (diffusion coefficient, $D < 5 \times 10^{-18} \text{ cm}^2/\text{s}^{1/2}$). Since the softening points of some glasses are as low as 500°C , only a limited temperature range was available for making accurate measurements. Above the softening points, the diffusion profiles became distorted due to plastic flow of the glass. Further complications arose due to nucleation of crystallites and subsequent crystallization of part of the glass for long annealing times and at high diffusion temperatures. The kinetics of the crystallization process, verified by optical microscopy and X-ray diffractometry, could be obtained from the time dependence of tracer penetration since differently crystallized glasses show different diffusion behaviour. In the crystallized glasses (glass ceramics), composite tracer penetration profiles were frequently observed. These could be unfolded to give a set of up to three Gaussians yielding different diffusion coefficients for different components of the glass ceramics. The effects of α -radiation damage and radiation enhancement of diffusion were also studied using curium and americium-containing glasses. In all cases, the measured D-values were small, indicating that, from the diffusion point of view, the glasses are a safe medium in which to store actinides. Observed plutonium gradients in leaching experiments are therefore stable until the gel-like surface layers get mechanically 'pealed off'.

Record - 311

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00858091 AIX-12-638191; EDB-82-032930

Title: Removal of inhaled ^{241}Am oxide particles of various sizes from beagle dogs using lung lavage and chelation treatment

Author(s): Muggenburg, B.A.; Mewhinney, J.A. (Lovelace Biomedical and Environmental Research Inst., Albuquerque, NM (USA))

Source: Health Phys. (United Kingdom) v 41:1. Coden: HLTPA

Publication Date: Jul 1981 p 123-133

Language: English

Abstract: The combined treatments of lung lavage and chelation therapy were evaluated for the removal of inhaled ^{241}AmO ₂ aerosols in Beagle dogs. Groups 1 to 3 were exposed to monodisperse particles of ^{241}AmO ₂ of 0.75, 1.5 and 3.0 μm aerodynamic diameter (AD) respectively; a fourth group was exposed to polydisperse particles of ^{241}AmO ₂ with an activity median aerodynamic diameter (AMAD) of 1.8 μm . Treatment consisted of 5 lung lavages of the right and left lungs. Treated dogs were also given 18 intravenous injections of DTPA. The dogs were sacrificed 64 days after inhalation exposure. The amount of ^{241}Am removed from lung in the lavage fluid for Groups 1 to 4 represented 41, 46, 42 and 33 % of the initial lung burden, respectively. The amount of ^{241}Am excreted in the urine from the treated dogs in excess of that excreted by the untreated dogs for Groups 1 to 4 was 20, 19, 8 and 26 %, respectively. More ^{241}Am was excreted in the urine from dogs that inhaled smaller particle sized aerosols. As a result of the removal of ^{241}Am activity, the 64-day cumulative absorbed radiation doses to lung, liver and skeleton were reduced by 50, 90 and 85 %, respectively.

314

Record - 312

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00755889 ERA-06-019231; INS-81-008767; EDB-81-064148

Title: Chemical treatments of soil to decrease radiostrontium leachability

Author(s): Spalding, B.P.

Affiliation: Oak Ridge National Lab., TN

Source: J. Environ. Qual. (United States) v 10:1. Coden: JEVQA

Publication Date: Jan 1981 p 42-46

Contract Number (DOE): W-7405-ENG-26

Language: English

Abstract: The leachability of radiostrontium from radioactive waste and through soil is one of the most salient problems with shallow-land burial as a disposal method. The continuous leaching of buried waste at the Oak Ridge National Laboratory (ORNL), for periods up to 30 years, by lateral ground water flow has led to the contamination of surrounding soils and streams with ^{90}Sr . The goal of the present investigation was to evaluate methods to effect either the in situ fixation or reduced leachability of ^{90}Sr in soil. Small columns of three soils, collected from the solid waste disposal areas at ORNL, were labeled with ^{85}Sr as a convenient tracer for ^{90}Sr .

After this labeling, but prior to leaching, the soil columns were percolated with equivalent amounts of sodium salt solutions of hydroxide, fluoride, carbonate, phosphate, silicate, or aluminate.

Leaching was then initiated with 0.1N CaCl_{2} which was selected to qualitatively simulate ground water which contains Ca as the dominant dissolved cation. With two soils, high in indigenous exchangeable Ca^{2+} , only 30 to 35% of the ^{85}Sr could be leached from the carbonate-treated columns. Presumably, the ^{85}Sr was coprecipitated with the nascent CaCO_3 formed during this treatment. In contrast, >98% of the ^{85}Sr was readily leached from all untreated soils. Other anions fixed variable but generally less ^{85}Sr than the carbonate treatment. Thus, sodium carbonate appears to have a potential application to immobilize ^{90}Sr in situ in contaminated soil.

315

Record - 313

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00719786 EDB-81-028039

Title: Removal of radioactivity from water in the protection of environmental health

Author(s): James, G.V.

Affiliation: Western Counties Labs., Bristol, England

Source: Int. J. Environ. Stud. (United Kingdom) v 16:1. Coden: IJEVA

Publication Date: Nov 1980 p 17-22

Language: English

Abstract: The introduction deals with discharges of radioactive effluents, and investigations of the radioactivity in the atmosphere are described which lead to the considerations of adsorption following. A literature search showed that some work had been done on river muds and on some fresh water plants and their uptake of radioactivity. Experiments were performed with muds and with activated carbon and the uptake of radioactivity by these agents was shown to be due to adsorption.

Suggestions are made as to protection of employees who may be called upon to take action to safeguard supplies for the populace. Finally, a brief discussion follows dealing with the effects of these proposals on environmental health.

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Record - 314

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
00638907 AIX-11-520670; EDB-80-078432

Title: Radionuclide concentrations in two sewage treatment plants on
Western Lake Ontario, Canada

Author(s): Durham, R.W.; Joshi, S.R. (Inland Waters Directorate,
Burlington, Ontario (Canada). Canada Centre for Inland Waters)

Source: J. Radioanal. Chem. (Hungary) v 54:1-2. Coden: JRACB

Publication Date: 1979 p 367-370

Language: English

Abstract: Radionuclide concentrations in digester sludge and effluent
samples from Hamilton and Dundas sewage treatment plants, located at
the western tip of Lake Ontario, have been determined by
high-resolution ..gamma..-ray spectrometry. The radionuclides ⁵¹Cr, ⁷⁵Se and ¹³¹I, which are used in nuclear medicine
procedures, were found in sludge samples. Very low concentrations of
⁵¹Cr, entering Lake Ontario through the Hamilton plant effluent
discharge, have little effect on lake water quality.

Record - 315

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >
00558825 AIX-10-433053; EDB-79-138291

Title: Effect of combined alginate treatments on the distribution and
excretion of an old radiostrontium contamination

Author(s): Vanderborght, O.L.J.; Van Puymbroeck, S.; Babakova, I. (Centre
d'Etude de l'Energie Nucleaire, Mol (Belgium))

Source: Health Phys. (United Kingdom) v 35:2. Coden: HLTPA

Publication Date: Aug 1978 p 255-258

Language: English

Abstract: A combined treatment of alginate administered both in
intraperitoneal injections and in the diet with a starch containing
dough, increases up to 5 times the concentration of ⁸⁵Sr in the
blood of mice with a 9-week-old radiostrontium contamination. This
combined treatment overcomes the decrease of urinary ⁸⁵Sr
excretion, formerly obtained with alginate diets. The availability of
the mobilised ⁸⁵Sr for renal excretion, for fecal excretion and
for equilibrium between blood and organs is different depending on the
mobilizing treatment (injection or diet). The radiostrontium content
of liver, kidney and spleen is also increased four to six times by the
combined treatment.

Record - 316

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546749 AIX-10-430142; EDB-79-126215

Title: Development of a diagnostic model for inhaled promethium-147 oxide.

Animal studies

Author(s): Shipler, D.B.; Ballou, J.E.; Griffin, B.I.; Nelson, I.C.

(Battelle Pacific Northwest Labs., Richland, WA (USA))

Title: Diagnosis and treatment of incorporated radionuclides (Sm 145, Pm 143 kinetics)

Conference Title: IAEA international seminar on diagnosis and treatment of incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 209-221

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/28

Language: English

Abstract: Rats and beagles were exposed by inhalation to an aerosol containing stable Sm₂O₃ tagged with ¹⁴⁵Sm₂O₃ and ¹⁴³Pm₂O₃. The animals were sacrificed at 0, 14 and 30 days post-exposure to compare the kinetics and translocation of ¹⁴⁵Sm and ¹⁴³Pm. Quantitative analysis for ¹⁴⁵Sm and ¹⁴³Pm in several tissues and excreta indicate that the two rare-earth elements were mobilized and distributed similarly by the rats and dogs. Results indicate that within the error of the measurement technique, samarium acts as a carrier for promethium. The data also indicate that activities measured in faecal samples could be used to predict lung burdens of ¹⁴⁷Pm. At activity levels and sintering temperatures employed in the rat exposures, there was sufficient activity in urine samples to permit its use as an indicator of lung burdens of ¹⁴⁷Pm. At activity levels and sintering temperatures employed in the dog exposures, this was not the case.

Record - 317

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546744 AIX-10-430120; EDB-79-126210

Title: Removal of inhaled ^{239}Pu and ^{238}Pu from beagle dogs by lung lavage and chelation treatment

Author(s): Muggenburg, B.A.; Mewhinney, J.A.; Miglio, J.J.; Slauson, D.O.; McClellan, R.O. (Lovelace Biomedical and Environmental Research Inst., Albuquerque, NM (USA))

Title: Diagnosis and treatment of incorporated radionuclides

Conference Title: IAEA international seminar on diagnosis and treatment of incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 341-354

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/30

Language: English

Abstract: Studies were conducted in beagle dogs to determine the efficiency of treatment by lung lavage and injections of chelating agents in removing inhaled plutonium of varied chemical forms and particle sizes. Polydisperse aerosols of ^{239}Pu were produced at different temperatures from 325°C to 1150°C to evaluate the effect of the chemical form of the particles. Aerosols of ^{238}Pu were produced at 1150°C only but were of different particle size or size distributions. Three dogs that inhaled each different plutonium aerosol were treated by lung lavages starting two days after the exposure. Subsequent lavages were performed on days 7, 10, 14, 21, 28, 35, 42, and 49 after exposure. Intravenous injections of 100 mg of diethylenetriaminepentaacetic acid (DTPA) as the calcium salt were given on days 1, 2, 3 and 4 after exposure and twice weekly thereafter to the time of sacrifice, 56 days after exposure. The 10 lung lavages removed from 18 to 49% of the initial lung burden of plutonium. The recovery of plutonium by lavage was similar irrespective of the temperature at which the aerosol was produced, however, lavage recovery decreased somewhat with increasing particle size. The efficacy of DTPA treatment increased with decreasing production temperature of the ^{239}Pu . Treatment with DTPA was not affected by particle size of the 0.8- and 1.9- μm monodisperse ^{239}Pu aerosol. The effectiveness of lung lavage decreased as the solubility of the aerosol particles increased whereas the effectiveness of the DTPA treatment increased as the solubility of the inhaled aerosol increased as shown by the lowest temperature aerosol and the aerosol-containing soluble fraction. These findings correlated qualitatively with a 2-hour in-vitro solubility test on the exposure aerosols.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546735 AIX-10-430137; EDB-79-126201

Title: Excretion rate and retention of plutonium 10,000 days after acquisition

Author(s): Rundo, J.; Starzyk, P.M.; Sedlet, J.; Larsen, R.P.; Oldham, R.D.; Robinson, J.J. (Argonne National Lab., IL (USA))

Title: Diagnosis and treatment of incorporated radionuclides

Conference Title: IAEA international seminar on diagnosis and treatment of incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 15-22

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/23

Language: English

Abstract: Three persons who had been injected with known amounts of plutonium in 1945 to 1947 were hospitalized on a metabolic ward in 1973. All excreta were collected for at least eight days and the samples were analysed for plutonium. For the two subjects who had been injected intravenously with tetravalent ^{239}Pu as the citrate, the urinary excretion rates were 7.6 and 4.7 pCi/day at approximately 10^{4} days after injection; these rates corresponded to $2.52 \times 10^{-3}\%$ and $1.41 \times 10^{-3}\%$ of the injected doses per day respectively.

The faecal excretion rates were about 40% of the urinary rates. The third subject received an intramuscular injection of hexavalent ^{238}Pu (as the nitrate) in the left leg, which was amputated four days later. Almost 50% of the amount injected was found at the injection site and the urinary excretion rate about 9500 days later was 0.06 pCi/day, corresponding to not less than $1.2 \times 10^{-4}\%$ of the initial systemic burden. From our results for the two subjects with ^{239}Pu , together with previously published excretion rates shortly after injection, and with some reasonable assumptions, we calculated the total excretion in, and hence the retention at, 10^{4} days. The observed excretion rates at 10^{4} days were approximately an order of magnitude higher than those predicted by Langham's equations for urinary and faecal excretion rates as functions of time, and the estimated total excretion was two to three times higher than the predictions obtained by integrating Langham's equations. The possible role of osteoporosis is discussed briefly.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546734 AIX-10-430134; EDB-79-126200

Title: Assessment of plutonium in lung for both chronic and acute exposure conditions

Author(s): Ramsden, D. (UKAEA, Winfrith. Atomic Energy Establishment)

Title: Diagnosis and treatment of incorporated radionuclides

Conference Title: IAEA international seminar on diagnosis and treatment of incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 139-161

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/9

Language: English

Abstract: The assessment of plutonium oxide in the lungs of a specific group of workers in an Experimental Fuels Laboratory is done on a routine basis for chronic exposure and on demand following suspected incidents. This assessment is based on both direct and indirect methods. Such methods are briefly discussed and a summary of the results of the programme during the past five years is presented. Acute intakes, after the early clearance phase, appear to be removed from the lung according to a two-term exponential pattern; the intermediate phase is of the order of 30-day half period and the long-term phase has a half period in excess of 200 days. Chronic levels of activity in the lung, not associated with known intakes, were low. The correlations of data from air sampling, bioassay, nose blows, faeces and urine samples with direct lung counting are briefly discussed together with the accuracy of the procedure.

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< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546732 AIX-10-430123; EDB-79-126198

Title: Comparison of results of drug therapy of /sup 239/Pu incorporation
after wound contamination

Author(s): Ohlenschlaeger, L.; Schieferdecker, H. (Gesellschaft fuer
Kernforschung m.b.H., Karlsruhe (Germany, F.R.))

Title: Diagnosis and treatment of incorporated radionuclides (Na/sub
3/(Ca-DTPA) and Na/sub 3/(Zn-DTPA))

Conference Title: IAEA international seminar on diagnosis and treatment of
incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 491-496

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/6

Language: English

Abstract: The results of drug therapy are compared for a /sup 239/Pu
incorporation after wound contamination that caused a systemic burden
of 7 nCi. When the initial therapy with Na/sub 3/(Ca-DTPA) was
terminated and the natural rate of plutonium removal in urine from the
systemic burden was established, the conditions for a comparative
evaluation of the results of medical treatment were almost identical.
The parameters chosen for the comparison were the modes of application,
the therapeutics applied and the dose-effect relations. The chelating
agents used for the therapy were Na/sub 3/(Ca-DTPA) and Na/sub
3/(Zn-DTPA).

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Record - 321

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546728 AIX-10-430105; EDB-79-126194

Title: Tritium levels in urine and blood samples of occupationally exposed persons. Results of routine checks in the Reactor Centre Seibersdorf

Author(s): Irlweck, K.; Teherani, D.K.; Hefner, A.; Sorantin, H.
(Oesterreichische Studiengesellschaft fuer Atomenergie G.m.b.H.,
Seibersdorf. Forschungszentrum)

Title: Diagnosis and treatment of incorporated radionuclides

Conference Title: IAEA international seminar on diagnosis and treatment of incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 591-597

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/56

Language: English

Abstract: Tritium levels in urine and blood samples of occupationally exposed persons were investigated with a Tri Carb liquid scintillation counter. The concentrations in the urine were determined as tritiated water and those in the blood as total tritium. The methods are described. The detection limit for HTO was about 2 pCi/ml and that for total tritium 7 pCi/ml. Tritium concentrations in daily urine of occupationally exposed persons at the Reactor Centre, Seibersdorf, were up to 10 pCi HTO/ml. The arithmetic mean of the results of investigations on 16 persons was 3.8 ± 2.1 pCi HTO/ml. Tritium levels in blood were notably higher than expected for a homogeneous distribution of HTO in the body fluids. Tritium concentrations in the blood of occupationally exposed persons at the Centre varied between 26 and 58 pCi/ml. An estimation of tritium intake based on these results showed, in the most unfavourable case, no more than 0.5% of the maximum permissible body burden for occupationally exposed persons.

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Record - 322

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546727 AIX-10-430097; EDB-79-126193

Title: Elimination of americium-241 after a case of accidental inhalation

Author(s): Edvardsson, K.A.; Lindgren, L. (Aktiebolaget Atomenergi,
Studsvik (Sweden))

Title: Diagnosis and treatment of incorporated radionuclides

Conference Title: IAEA international seminar on diagnosis and treatment of
incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 497-501

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/8

Language: English

Abstract: In handling a ^{241}Am source one person received an internal contamination of about 140 nCi of americium oxide, which was deposited in the lung region. Elimination of the activity was followed for more than 3 months by external gamma counting and excreta analyses. During the first week after the inhalation about 80% of the total intake was eliminated with an effective half-life of less than 2 days. The remaining activity, deposited in the lung region, was eliminated with an effective half-life of about 17 days. About 15% of the activity eliminated from the lung region from the 10th to the 50th day was eliminated in the faeces.

Record - 323

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00546724 AIX-10-430094; EDB-79-126190

Title: Enhancement of ^{241}Am excretion by intravenous administration of $\text{Na}/\text{sub 3}/(\text{Ca-DTPA})$ in man and baboon. A comparison

Author(s): Cohen, N.; Wrenn, McD.E.; Guilmette, R.A.; Lo Sasso, T. (New York Univ., NY (USA). Inst. of Environmental Medicine)

Title: Diagnosis and treatment of incorporated radionuclides

Conference Title: IAEA international seminar on diagnosis and treatment of incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: International Atomic Energy Agency, Vienna, Austria

Publication Date: 1976 p 461-475

Report Number(s): STI/PUB-411; CONF-751205-; IAEA-SR-6/20

Language: English

Abstract: The trisodium calcium salt of diethylenetriaminepentaacetic acid ($\text{Na}/\text{sub 3}/(\text{Ca-DTPA})$) was administered to both an adult and an adolescent male subject in an effort to enhance the excretion of ^{241}Am contamination acquired as early as 12 years prior to therapy. Similar chelation procedures were employed in several adult and juvenile baboons with soft tissue and skeletal concentrations of ^{241}Am resulting from single injections of ^{241}Am citrate. By employing approximately the same dose-rate schedule for $\text{Na}/\text{sub 3}/(\text{Ca-DTPA})$ infusion, the efficacy of ^{241}Am decorporation in man and baboon has been compared with respect to subject age and route of excretion by use of external in-vivo counting and radiochemical analysis. Significant conclusions of this comparison are as follows: 1. The effectiveness of DTPA in accelerating the excretion of ^{241}Am is much greater in the juvenile than in the adult, both for man and baboon. 2. In baboons, ^{241}Am removed from the skeleton by DTPA treatment is primarily excreted in urine. The human data is consistent with this observation. 3. Excretion of ^{241}Am via the faeces is enhanced both in man and in baboon by treatment with DTPA. In the baboon, the source of ^{241}Am excreted in the faeces is the liver; this is probably also true for man. 4. Treatment with $\text{Na}/\text{sub 3}/(\text{Ca-DTPA})$ caused depletion of zinc resulting in inhibition of the metalloenzyme aminolevulinic acid dehydratase (ALAD) during ^{241}Am chelation regimens in man and baboon.

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Record - 324

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00534140 AIX-10-430410; ERA-04-052215; EDB-79-113605

Title: Considerations in the assessment of plutonium deposition in man

Author(s): Voelz, G.; Umbarger, J.; McInroy, J.; Healy, J. (Los Alamos
Scientific Lab., NM (USA))

Title: Diagnosis and treatment of incorporated radionuclides

Conference Title: IAEA international seminar on diagnosis and treatment of
incorporated radionuclides

Conference Location: Vienna, Austria Conference Date: 8 Dec 1975

Publisher: IAEA, Vienna

Publication Date: 1976 p 163-175

Report Number(s): CONF-751205-; IAEA-SR-6/33

Language: English

Abstract: Data from human cases of plutonium inhalation are used to illustrate several important problems in the current methods of estimating plutonium body burdens. Individuals exposed to $\sup{238}\text{PuO}/\sub{2}$ particles in a highly insoluble matrix showed an unusually slow rising urinary excretion curve over 300 - 400 days. In-vivo chest counts during the first 6 months estimated lung burdens to be 10 - 30 nCi, but urinary excretion methods calculate residual systemic body burdens of 50 - 100 nCi at 1200 days after exposure. Current assumptions used in the in-vivo calibration do not consider possible lung distribution of particulates soon after exposure that could alter the interpretation significantly. Tissue analysis of a lung from another case after recent inhalation exposure shows a significantly lesser concentration of plutonium in the subpleural region - the principal region of plutonium measurement by in-vivo chest counting - as compared to distributions found years after exposure. Tissue analyses indicate that urinary excretion estimates of body burden over the long term tend to err on the high side up to a factor of 5 or more. This procedure serves well for the purpose of protection of workers, but high estimates can lead to unnecessary job reassessments for the individual worker and can cause misleading conclusions when such data are used uncritically for reference in health effects studies. Additional research is needed to improve urinary excretion data analysis to reflect newer information derived from tissue data and to seek further understanding of the sources of variation in in-vivo counting technology so it can be used with greater confidence.

Record - 325

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00343490 EDB-78-032118

Author(s): Drbal, L.F.

Title: Technology of radioiodine treatment in boiling water reactors

Publisher: Kansas State Univ., Manhattan, KS

Publication Date: 1975 p 488

Academic Degree: Thesis (Ph. D.)

Language: English

Availability: University Microfilms Order No. 77-16,013.

Abstract: The Atomic Energy Commission has developed systems models for

estimating the radiation dose to the human thyroid resulting from radioactive iodine released from a nuclear power plant. These models, known to be highly conservative, have been adopted in governmental regulatory practices. According to these models, compliance with the newly proposed limits would require substantial modifications in radioactive waste treatment systems for nuclear power plants.

Additional costs for plants now planned or under construction could amount to several hundred millions of dollars. There is understandable reluctance on the part of the industry to meet these costs which have been justified only on the basis of these highly conservative models.

The goal the studies described has been to explore the need for modifying radioactive waste treatment systems and, specifically, to determine the major conservatisms in currently used models and to identify problem areas for which further research effort is justified.

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Record - 326

< DIALOG File 103: (c) format only 1994 Dialog Info.Svcs. >

00296106 AIX-08-334887; EDB-77-134515

Title: Effect of ascorbate ions in DTPA treatment after contamination by mixed plutonium dioxide-sodium burning products

Author(s): Metivier, H.; Masse, R.; Nolibe, D.; Nenot, J.C.; Lafuma, J.
(CEA Centre d'Etudes de Bruyeres-le-Chatel, 92 - Montrouge (France))

Source: Health Phys. (United Kingdom) v 32:5. Coden: HLTPA

Publication Date: May 1977 p 450-452

Language: English

Abstract: Plutonium toxicity problems arising from the use of molten sodium cooled fast breeder reactors involving the accidental mixing and ignition of sodium contaminated by plutonium dioxide have been investigated. The possibility of using the strong reducing agent, ascorbate ion, in order to reduce Pu VI to a chemical form more complexable by DTPA, has been tested using male and female rats. Urine, feces, liver and skeletal measurements of ^{239}Pu daughter products were carried out. It was shown that the transportable fraction was not significantly modified by the associate ascorbate-DTPA treatment. However the skeletal burden which represents 2.2% with DTPA, reached only 1.6% with ascorbate association and 0.3% with preventive ascorbate injections. Whatever the DTPA ascorbate treatment, the liver burden was not modified significantly. Difference observable only with preventive ascorbate treatment cancels out ascorbate association in order to greatly increase DTPA therapy efficiency, but seems to indicate that the Pu-proteins associations in blood is reduced more easily by ascorbate than association of Pu with local proteins. Ascorbate reduction can also be observed in urinary elimination in that preventive ascorbate, followed by DTPA-ascorbate, leads to a quicker urinary elimination than DTPA or DTPA plus ascorbate post treatment.

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Record - 327

<DIALOG File 399: (c) 1994 American Chemical Society>

120143068 CA: 120(12)143068k JOURNAL

The removal of radioactive cobalt, cesium, and iodine in a conventional municipal wastewater treatment plant

AUTHOR(S): Stetar, Elisabeth A.; Boston, Harry L.; Larsen, Ingvar L.; Mobley, Michael H.

LOCATION: Performance Technol. Group, Inc., Nashville, TN, 37208, USA

JOURNAL: Water Environ. Res. DATE: 1993 VOLUME: 65 NUMBER: 5 PAGES:

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Wastewater treatment,secondary...

in removal of radionuclide, in combination with activated-sludge process

Wastewater treatment,activated-sludge process...

in removal of radionuclide, in combination with secondary treatment

CAS REGISTRY NUMBERS:

7440-46-2 7440-48-4 7553-56-2 miscellaneous, removal of radioactive, from municipal wastewater, efficiency study with isotope tracer in

10043-66-0 13967-70-9 13981-38-9 uses, tracer, in radionuclide removal study from wastewater

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Record - 328

<DIALOG File 399: (c) 1994 American Chemical Society>

120119105 CA: 120(10)119105z TECHNICAL REPORT

The distillation and incineration of 132,000 liters (35,000 gallons) of mixed-waste hexone solvents from Hanford's REDOX plant

AUTHOR(S): Rasmussen, O. R.; Cowan, R. H.; Heine, W. F.

LOCATION: Westinghouse Hanford Co., Richland, WA, USA

JOURNAL: Report DATE: 1992 NUMBER: WHC-EP-0570; Order No. DE93001752

PAGES: 30 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1993, 18(2), Abstr. No. 2791 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: distn incineration mixed hexone solvent waste, fuel reprocessing solvent waste distn incineration, reactor fuel reprocessing solvent waste treatment, spent fuel reprocessing solvent waste treatment, nuclear fuel reprocessing solvent waste treatment

DESCRIPTORS:

Kerosine...

distn. and incineration of, from nuclear fuel reprocessing
Radioactive wastes...
hexone solvent, from nuclear fuel reprocessing, distn. and incineration
of
Distillation... Incineration...
of mixed-waste hexone solvents from nuclear fuel reprocessing
CAS REGISTRY NUMBERS:
108-10-1 distn. and incineration of, from nuclear fuel reprocessing
126-73-8 uses, distn. and incineration of, from nuclear fuel reprocessing

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Record - 329

<DIALOG File 399: (c) 1994 American Chemical Society>
120119072 CA: 120(10)119072m CONFERENCE PROCEEDING
Molten salt treatment to minimize and optimize waste
AUTHOR(S): Gat, Uri; Crosley, S. M.; Gay, R. L.
LOCATION: Oak Ridge Natl. Lab., Oak Ridge, TN, USA
JOURNAL: Proc. Int. Conf. Technol. Expo. Future Nucl. Syst.: Emerging
Fuel Cycles Waste Disposal Options DATE: 1993 VOLUME: 1, PAGES: 671-4
CODEN: 59PFAE LANGUAGE: English PUBLISHER: Am. Nucl. Soc., La Grange
Park, Ill
SECTION:
CA271011 Nuclear Technology
CA260XXX Waste Treatment and Disposal
IDENTIFIERS: radioactive waste molten salt treatment, reactor molten salt
radioactive waste treatment, oxidizer molten salt hazardous waste treatment
, mixed waste molten salt treatment
DESCRIPTORS:
Actinides... Nuclear materials and Fissile materials...
Radioelements, long-lived, reactions...
burning or transmutation of, in molten salt reactor
Nuclear reactors, fuel assemblies...
molten salt, in radioactive waste treatment
Radioactive wastes... Wastes, hazardous...
treatment of, combination molten salt oxidizer and reactor for

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Record - 330

<DIALOG File 399: (c) 1994 American Chemical Society>
120085745 CA: 120(8)85745r JOURNAL
Effluent testing at the Oak Ridge mixed waste incinerator
AUTHOR(S): Bostick, William D.; Hoffmann, Douglas P.; Bunch, Diane H.;
Gibson, Luther V., Jr.; Shor, Joel T.
LOCATION: Oak Ridge K-25 Site, Oak Ridge, TN, USA
JOURNAL: Proc., Annu. Meet. - Air Waste Manage. Assoc. DATE: 1992
VOLUME: 85th NUMBER: Vol. 8B PAGES: Paper No. 92/38.02, 14 pp. CODEN:
PAMEE5 ISSN: 1052-6102 LANGUAGE: English
SECTION:
CA260005 Waste Treatment and Disposal
CA259XXX Air Pollution and Industrial Hygiene

CA261XXX Water

IDENTIFIERS: mixed waste incineration Oak Ridge Lab, air pollution control blowdown metal component, particulate metal component incinerator flue gas, copptn filtration treatment incinerator blowdown

DESCRIPTORS:

Air pollution...

by trace metals and particles, from mixed waste incineration, at Oak Ridge Lab., Tennessee

Wastewater treatment,pptn....

co- of incinerator air pollution control equipment blowdown, ferric sulfate for, trace metal removal by, at Oak Ridge Lab., Tennessee

Trace elements,metals,miscellaneous...

in incinerator flue gases and blowdown effluents, copptn. and filtration removal of, at Oak Ridge Lab., Tennessee

Wastes,hazardous...

mixed, incineration of, emissions and blowdown from, trace metals in, treatment of, at Oak Ridge Lab., Tennessee

Wastewater treatment,filtration...

of incinerator air pollution control equipment blowdown, trace metal removal by, at Oak Ridge Lab., Tennessee

Incineration...

of mixed toxic wastes, emissions and blowdown from, trace metals and particles in, treatment of, at Oak Ridge Lab., Tennessee

Flue gases,incinerator...

particulate matter and metals in, from mixed waste combustion, treatment of, at Oak Ridge Lab., Tennessee

CAS REGISTRY NUMBERS:

10028-22-5 copptn. treatment of incinerator air pollution control equipment blowdown with, at Oak Ridge Lab., Tennessee

7440-09-7 7440-21-3 miscellaneous, in airborne particulates, from mixed waste incineration at Oak Ridge Lab., Tennessee

7429-90-5 7440-22-4 miscellaneous, in copptd. and filtered effluent from incinerator blowdown discharges

7439-95-4 7440-28-0 7782-49-2 miscellaneous, in flue gases, from mixed waste incineration at Oak Ridge Lab., Tennessee

7439-89-6 7439-92-1 7439-96-5 7439-97-6 7440-02-0 7440-38-2 7440-39-3
7440-41-7 7440-43-9 7440-47-3 7440-50-8 7440-61-1 7440-66-6

7723-14-0 7782-50-5 miscellaneous, incineration of mixed wastes contg., particulate emissions and blowdown from, treatment of, at Oak Ridge Lab., Tennessee

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Record - 331

<IALOG File 399: (c) 1994 American Chemical Society>

120085635 CA: 120(8)85635e JOURNAL

Treatment of uranium containing wastewaters

AUTHOR(S): Potts, Michael E.; Hampshire, Lyle H.

LOCATION: Anal. Dev. Corp., Colorado Springs, CO, USA

JOURNAL: Proc., Annu. Meet. - Air Waste Manage. Assoc. DATE: 1992

VOLUME: 85th NUMBER: Vol. 8B PAGES: Paper No. 92/38.07, 11 pp. CODEN:

PAMEE5 ISSN: 1052-6102 LANGUAGE: English

SECTION:

CA260002 Waste Treatment and Disposal

332

IDENTIFIERS: uranium contg wastewater chem treatment, calcium hydroxide removal radionuclide metal wastewater, potassium ferrate removal radionuclide metal wastewater, pptn wastewater treatment metal radionuclide removal, ion exchange polishing pptn effluent

DESCRIPTORS:

Wastewater treatment,ion exchange...

for polishing pptn. treatment effluent, at uranium and trace metal removal facility

Wastewater treatment sludge...

generation of, by pptn. of radionuclides and metals with calcium hydroxide vs. potassium ferrate, ultimate disposal cost in relation to

Radioelements,miscellaneous... Trace elements,metals,miscellaneous...

removal of, from wastewater, by pptn. with calcium hydroxide or potassium ferrate, comparison of

Wastewater treatment,pptn....

removal of radionuclides and metals by, calcium hydroxide vs. potassium ferrate for, comparison of

CAS REGISTRY NUMBERS:

7439-89-6 7439-95-4 7440-50-8 7440-61-1 7440-70-2 miscellaneous,

removal of, from wastewater, by pptn. with calcium hydroxide or potassium ferrate, comparison of

1305-62-0P preparation, removal of radionuclides and metals from wastewater by pptn. with, potassium ferrate pptn. comparison with

39469-86-8 removal of radionuclides and metals from wastewater by pptn. with, calcium hydroxide pptn. comparison with

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Record - 332

<IALOG File 399: (c) 1994 American Chemical Society>

120085597 CA: 120(8)85597u JOURNAL

Effect of temperature and retention time on biomethanation of cheese

whey-poultry waste-cattle dung

AUTHOR(S): Desai, Manik; Patel, Vikram; Madamwar, Datta

LOCATION: Post Grad. Dep. Biosci., Sardar Patel Univ., Vallabh Vidyanagar, 388120, India

JOURNAL: Environ. Pollut. DATE: 1993 VOLUME: 83 NUMBER: 3 PAGES:

311-15 CODEN: ENPOEK ISSN: 0269-7491 LANGUAGE: English MEETING DATE: 940000

SECTION:

CA260001 Waste Treatment and Disposal

IDENTIFIERS: anaerobic biodegrdn mixed waste, cheese whey poultry cattle manure biodegrdn, biogas methane prodn biodegrdn mixed waste

DESCRIPTORS:

Wastewater treatment,digestion, anaerobic...

biodegrdn. of cheese whey-poultry waste-cattle manure by, temp. and retention time and solids content and stirring effect on

Waste solids,poultry by-products...

cheese whey-cattle manure and, anaerobic biodegrdn. of, temp. and retention time and solids content and stirring effect on, in digesters

Manure...

cheese whey-poultry waste and, anaerobic biodegrdn. of, temp. and retention time and solids content and stirring effect on, in digesters

Decomposition, biochem., anaerobic...

of cheese whey-poultry waste-cattle manure by, in digesters, temp. and retention time and solids content and stirring effect on

Whey...

poultry waste-cattle manure and, anaerobic biodegrdn. of, temp. and retention time and solids content and stirring effect on, in digesters

Fuel gases, biogas...

prodn. of, from anaerobic biodegrdn. of cheese whey-poultry waste-cattle manure, temp. and retention time and solids content and stirring effect on

CAS REGISTRY NUMBERS:

74-82-8P preparation, prodn. of, from anaerobic biodegrdn. of cheese whey-poultry waste-cattle manure, temp. and retention time and solids content and stirring effect on

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Record - 333

<DIALOG File 399: (c) 1994 American Chemical Society>

119280730 CA: 119(26)280730p JOURNAL

Biological treatment of special laundry wastewater in the Jaslovske Bohunice nuclear power plant

AUTHOR(S): Franta, P.; Tejnecky, M.

LOCATION: Nucl. Res. Inst. Rez Plc, Rez, Czech Rep., 25068

JOURNAL: Nucleon (Rez, Czech.) DATE: 1993 NUMBER: 2 PAGES: 14-19

CODEN: NLEQEM LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: reactor power plant laundry wastewater treatment, radioactive wastewater laundry biol treatment, laundering wastewater contaminated biol treatment

DESCRIPTORS:

Radioactive wastes, wastewaters...

biol.-based treatment of, from laundering contaminated clothing

Wastewater treatment sludge...

from pptn. processes with contaminated laundry, biol. treatment of

Wearing apparel, protective...

laundering of, treatment of wastewaters contg. surfactant and radionuclides from, biol.-based

Surfactants, nonionic...

treatment of contaminated clothing laundering wastewaters based on washing agent of

Soaps...

treatment of contaminated clothing laundering wastewaters contg. washing agent based on

Laundering...

wastewaters from, contg. radionuclides and surfactants, biol. treatment of

CAS REGISTRY NUMBERS:

7786-81-4 14874-78-3 collector soln. of, in contaminated clothing laundering wastewater pptn. treatment

52627-67-5 flocculation by, in pptn. treatment for contaminated clothing laundering wastewaters

10198-40-0 13966-31-9 13967-73-2 14762-78-8 15726-30-4 miscellaneous,
removal of, in laundry wastewater treatment
151534-22-4 sorbent, for contaminated clothing laundering wastewaters
12173-10-3 sorbent of, for contaminated clothing laundering wastewaters
1305-62-0 7705-08-0 10361-37-2 uses, collector soln. of, in contaminated
clothing laundering wastewater pptn. treatment
7664-93-9 uses, in contaminated clothing laundering wastewater pptn.
treatment
109189-92-6 135667-73-1 washing agent, biol. treatment of contaminated
clothing laundering wastewater in relation to

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Record - 334

<DIALOG File 399: (c) 1994 American Chemical Society>
119277959 CA: 119(26)277959q JOURNAL
Model for strontium-cesium-calcium-magnesium-sodium ion-exchange
equilibria on chabazite
AUTHOR(S): Perona, Joseph J.
LOCATION: Oak Ridge Natl. Lab., Oak Ridge, TN, 37831, USA
JOURNAL: AIChE J. DATE: 1993 VOLUME: 39 NUMBER: 10 PAGES: 1716-20
CODEN: AICEAC ISSN: 0001-1541 LANGUAGE: English
SECTION:
CA260003 Waste Treatment and Disposal
CA208XXX Radiation Biochemistry
IDENTIFIERS: strontium 90 removal wastewater chabazite zeolite, cesium
137 removal wastewater chabazite zeolite, ion exchange wastewater treatment
radionuclide removal, modeling solid phase activity coeff
DESCRIPTORS:
Simulation and Modeling, physicochemical...
of strontium-cesium-calcium-magnesium-sodium ion exchange system data
for design of chabazite zeolite ion exchange columns, radionuclide
removal from wastewater in relation to
Wastewater treatment, ion exchange...
removal of strontium-90 and cesium-137 by, multicomponent chabazite
zeolite systems for, equil. of,
strontium-cesium-calcium-magnesium-sodium system data modeling for,
solid phase activity coeffs. in
CAS REGISTRY NUMBERS:
10045-97-3 10098-97-2 miscellaneous, removal of, from wastewater, in
chabazite zeolite ion exchange columns, multicomponent equil. of,
strontium-cesium-calcium-magnesium-sodium system modeling for, solid
phase activity coeffs. in relation to

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Record - 335

<DIALOG File 399: (c) 1994 American Chemical Society>
119255959 CA: 119(24)255959n TECHNICAL REPORT
Technology needs assessment: Evaluation of the molten salt oxidation
process technology
CORPORATE AUTHOR(S): Chem.-Nuclear Geotech Inc.

LOCATION: Grand Junction, CO, USA

JOURNAL: Report DATE: 1992 NUMBER: DOE/ID/12584-97, GJPO-105; Order No. DE92040889 PAGES: 69 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res. Abstr. 1992, 17(12), Abstr. No. 32916 AVAIL: NTIS

SECTION:

CA260005 Waste Treatment and Disposal

CA252XXX Electrochemical, Radiational, and Thermal Energy Technology

IDENTIFIERS: molten salt oxidn hazardous waste treatment, mixed waste treatment salt oxidn, sodium carbonate molten salt oxidn, potassium carbonate molten salt oxidn

DESCRIPTORS:

Wastes...

mixed, molten salt oxidn. of, evaluation of, technol. needs assessment in relation to

Wastes,hazardous...

molten salt oxidn. of, evaluation of, technol. needs assessment in relation to

Salts,molten,uses...

treatment of mixed hazardous wastes by oxidn. in, evaluation of, technol. needs assessment in relation to

CAS REGISTRY NUMBERS:

584-08-7 in conjunction with sodium carbonate, molten salt oxidn.

treatment of mixed hazardous wastes by, evaluation of, technol. needs assessment in relation to

497-19-8 uses, alone or in conjunction with potassium carbonate or sodium chloride, molten salt oxidn. treatment of mixed hazardous wastes by, evaluation of, technol. needs assessment in relation to

7647-14-5 uses, in conjunction with sodium carbonate, molten salt oxidn. treatment of mixed hazardous wastes by, evaluation of, technol. needs assessment in relation to

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Record - 336

<DIALOG File 399: (c) 1994 American Chemical Society>

119082016 CA: 119(8)82016x TECHNICAL REPORT

Assessment of incineration and melting treatment technologies for RWMC buried waste

AUTHOR(S): Geimer, R.; Hertzler, T.; Gillins, R.; Anderson, G. L.

LOCATION: Sci. Appl. Int. Corp., Idaho Falls, ID, USA

JOURNAL: Report DATE: 1992 NUMBER: EGG-WTD-10035; Order No. DE92012522

PAGES: 109 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1992, 17(7), Abstr. No. 18000 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: incineration melting buried waste RWMC, radioactive waste buried incineration melting RWMC, mixed waste buried incineration melting RWMC, incinerator buried mixed waste, melter buried mixed waste

DESCRIPTORS:

Incinerators... Melting,app....

for buried mixed waste

Incineration... Melting...

of buried mixed waste
Radioactive wastes... Wastes...
treatment of RWMC buried, incineration and melting

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Record - 337

<DIALOG File 399: (c) 1994 American Chemical Society>
119058108 CA: 119(6)58108h TECHNICAL REPORT
Experience base for Radioactive Waste Thermal Processing Systems: A
preliminary survey
AUTHOR(S): Mayberry, J.; Geimer, R.; Gillins, R.; Stevenson, E. M.;
Dalton, D.; Anderson, G. L.
LOCATION: Sci. Appl. Int. Corp., Idaho Falls, ID, USA
JOURNAL: Report DATE: 1992 NUMBER: EGG-WTD-10037; Order No. DE92017990
PAGES: 93 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.
Abstr. 1992, 17(10), Abstr. No. 27777 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: radioactive waste thermal processing system, mixed
transuranic waste thermal treatment

DESCRIPTORS:

Heat...

processing by, of mixed radioactive wastes

Soil pollution...

radioactive, thermal processing systems for

Transuranium elements...

thermal processing of mixed waste contg.

Radioactive wastes...

transuranic, thermal processing systems for

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Record - 338

<DIALOG File 399: (c) 1994 American Chemical Society>
119055301 CA: 119(6)55301e TECHNICAL REPORT
Data evaluation technical memorandum on the K-1407C Retention Basin at
the Oak Ridge K-25 Site, Oak Ridge, Tennessee: Environmental Restoration
Program
AUTHOR(S): Beal, D.; Bock, J.; Hatmaker, T.; Zolyniak, J.; Goddard, P.;
Kucsmas, D.
LOCATION: Oak Ridge K-25 Site, TN, USA
JOURNAL: Report DATE: 1991 NUMBER: K/ER-40; Order No. DE92006589
PAGES: 265 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.
Abstr. 1992, 17(6), Abstr. No. 15209 AVAIL: NTIS

SECTION:

CA260005 Waste Treatment and Disposal

CA271XXX Nuclear Technology

IDENTIFIERS: scrubber sludge retention basin cleanup closure, hazardous
sludge retention basin cleanup closure, radioactive sludge retention basin
cleanup closure

DESCRIPTORS:

Wastewater treatment sludge...

radionuclide-contg., sites contg., cleanup of, of Oak Ridge, Tennessee
Radioelements, miscellaneous...

sludge contg., site contg., cleanup of, of Oak Ridge, Tennessee

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Record - 339

<DIALOG File 399: (c) 1994 American Chemical Society>

118221717 CA: 118(22)221717w JOURNAL

Removal of heat-generating nuclides from high-level liquid wastes through
mixed zeolite columns

AUTHOR(S): Mimura, Hitoshi; Akiba, Kenichi; Igarashi, Hiroshi

LOCATION: Inst. Adv. Mater. Process., Tohoku Univ., Sendai, Japan, 980

JOURNAL: J. Nucl. Sci. Technol. DATE: 1993 VOLUME: 30 NUMBER: 3

PAGES: 239-47 CODEN: JNSTAX ISSN: 0022-3131 LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: removal heat generating nuclide liq waste, radioactive waste
liq radionuclide removal, zeolite removal radionuclide liq waste, high
level waste radionuclide removal zeolite

DESCRIPTORS:

Adsorption...

of cesium and strontium, on mixed zeolite columns in radioactive waste
treatment

Nitration, retro...

pptrn. by, in removal of heat-generating nuclides from high-level liq.
waste

Zeolites, A, uses...

removal by, of heat-generating radionuclides

Actinides... Rare earth metals, miscellaneous...

removal of, from high-level liq. waste simulant through mixed zeolite
columns

Radioactive wastes, liq. high-level...

removal of heat-generating nuclides from, mixed zeolite columns in
CAS REGISTRY NUMBERS:

7439-89-6 7440-24-6 7440-26-8 7440-35-9 7440-46-2 7440-53-1

10045-97-3 13967-73-2 14596-10-2 14596-12-4 14683-23-9

miscellaneous, removal of, from high-level liq. waste by mixed zeolite
columns

7697-37-2 miscellaneous, removal of, from radioactive liq. wastes,
heat-generating nuclide removal in relation to

14809-56-4 miscellaneous, removal of metastable, from high-level liq.
waste by mixed zeolite columns

64-18-6 reactions, denitration by, of radioactive liq. wastes,
heat-generating nuclide removal in relation to

12173-30-7 removal by, of heat-generating radionuclides

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Record - 340

<DIALOG File 399: (c) 1994 American Chemical Society>

118219048 CA: 118(22)219048k JOURNAL
Simultaneous detection of short-lived thallium-201, metastable
technetium-99 and iodine-131 isotopes in sewage sludge using low energy
photon spectrometry

AUTHOR(S): Barci-Funel, G.; Dalmasso, J.; Magne, J.; Ardisson, G.

LOCATION: Fac. Sci., Univ. Nice, 06034, Nice, Fr.

JOURNAL: Sci. Total Environ. DATE: 1993 VOLUME: 130-131, PAGES: 37-42

CODEN: STENDL ISSN: 0048-9697 LANGUAGE: English

SECTION:

CA260006 Waste Treatment and Disposal

CA271XXX Nuclear Technology

CA279XXX Inorganic Analytical Chemistry

IDENTIFIERS: radionuclide detn sewage sludge photon spectrometry

DESCRIPTORS:

Radioelements,analysis...

detn. of short-lived, in sewage sludge, low energy photon spectrometry
in

Wastewater treatment sludge...

short-lived radionuclide detn. in, low energy photon spectrometry in

CAS REGISTRY NUMBERS:

10043-66-0 10045-97-3 13967-70-9 14133-76-7 15064-65-0 analysis, detn.
of, in sewage sludge, low energy photon spectrometry in

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Record - 341

<DIALOG File 399: (c) 1994 American Chemical Society>

118178497 CA: 118(18)178497k CONFERENCE PROCEEDING

Treatment of mixed wastes by the Molten Salt Oxidation process

AUTHOR(S): Stelman, D.; Stewart, A. E.; Yosim, S. J.; Gay, R. L.

LOCATION: Rockwell Int. Corp. Rocketdyne Div., Canoga Park, CA, 91303,
USA

JOURNAL: Therm. Treat. Radioact. Hazard. Chem., Mixed Med. Wastes, Proc.

Incineration Conf., 11th EDITOR: Wacks, Morton E (Ed), DATE: 1992

PAGES: 795-9 CODEN: 58OMAN LANGUAGE: English PUBLISHER: Univ. Calif.,
Irvine, Irvine, Calif

SECTION:

CA271011 Nuclear Technology

CA221XXX General Organic Chemistry

CA225XXX Benzene, Its Derivatives, and Condensed Benzenoid Compounds

CA260XXX Waste Treatment and Disposal

CA268XXX Phase Equilibria, Chemical Equilibria, and Solutions

CA272XXX Electrochemistry

IDENTIFIERS: perchloroethylene distn bottom oxidn, molten salt oxidn
treatment mixed waste, sodium carbonate melt oxidn waste, radioactive mixed
waste treatment molten salt, hazardous waste nonradioactive oxidn

DESCRIPTORS:

Steam...

formation of, from oxidn. of mixed wastes by molten salt

Salts, molten, uses...

in treatment of mixed radioactive wastes

Fission fragments and products...

retention of simulated, in molten salt oxidn.

Waste solids...

treatment of, by molten salt oxidn.

Radioactive wastes...

treatment of mixed, by molten salt oxidn.

CAS REGISTRY NUMBERS:

92-52-4D chloro devirs., destruction of waste contg., in molten salt

58-14-0 107-44-8 505-60-2 12002-48-1 50782-69-9 destruction of waste
contg., in molten salt

101-81-5 1321-94-4 25340-17-4 25550-14-5 28106-30-1 30581-98-7

53563-67-0 56832-73-6 formation of degrdn.-product, in

perchloroethylene bottoms, treatment of mixed waste by molten salt
oxidn. in relation to

91-20-3P 92-52-4P 100-42-5P 129-00-0P 1330-20-7P preparation,
formation of degrdn.-product, in perchloroethylene bottoms, treatment
of mixed waste by molten salt oxidn. in relation to

124-38-9P preparation, formation of, from oxidn. of mixed wastes by molten
salt

7439-92-1 7439-96-5 7440-02-0 7440-18-8 7440-24-6 7440-46-2 7440-47-3

7440-48-4 7440-53-1 7553-56-2 properties, retention of, in salt
melt, treatment of mixed waste in relation to

7681-82-5 properties, retention of iodine in salt melt contg.

7440-07-5 7440-61-1 reactions, molten salt oxidn. of perchloroethylene
distrn. bottoms contg., at various temps. and stoichiometric conditions

1333-74-0 7440-44-0 reactions, oxidn. of, in molten salts, treatment of
mixed wastes in relation to

7789-18-6 retention of cesium in salt melt contg.

10138-01-9 retention of europium in salt melt contg.

12035-83-5 retention of plutonium in salt melt contg.

146785-88-8 retention of ruthenium in salt melt contg.

10042-76-9 retention of strontium in salt melt contg.

127-18-4 uses, bottoms from distrn. of degraded, treatment of mixed waste
by molten salt oxidn. in relation to

497-19-8 uses, treatment of mixed wastes by oxidn. in melt contg.

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<IALOG File 399: (c) 1994 American Chemical Society>

118153713 CA: 118(16)153713q BOOK

1992 Incineration Conference: Thermal Treatment of Radioactive, Hazardous
Chemical, Mixed and Medical Wastes. Proceedings of the 1992 Incineration
Conference, Albuquerque, New Mexico, May 11-15, 1992

AUTHOR(S): Wacks, Morton E.; Editor

LOCATION: USA

DATE: 1992 PAGES: 823 pp. CODEN: BOOKA7 LANGUAGE: English PUBLISHER:
(Univ. Calif., Irvine, Irvine, Calif.)

SECTION:

CA260005 Waste Treatment and Disposal

CA271XXX Nuclear Technology

IDENTIFIERS: incineration mixed waste book, radioactive mixed waste
incineration book, hazardous chem waste incineration book, medical mixed
waste incineration book

DESCRIPTORS:

340

Radioactive wastes... Wastes,hazardous... Wastes,medical...
incineration of mixed
Incineration...
of mixed waste

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Record - 343

<DIALOG File 399: (c) 1994 American Chemical Society>
118134522 CA: 118(14)134522k CONFERENCE PROCEEDING
Fate of tritium, carbon-14, and iodine-131 in wet scrubber air pollution
control systems on chemical and medical waste incinerators
AUTHOR(S): Brady, Jack D.
LOCATION: Andersen, Peachtree City, GA, 30269, USA
JOURNAL: Therm. Treat. Radioact., Hazard. Chem., Mixed Med. Wastes, Proc.
Incineration Conf., 11th EDITOR: Wacks, Morton E (Ed), DATE: 1992
PAGES: 395-404 CODEN: 58OMAN LANGUAGE: English PUBLISHER: Univ.
Calif., Irvine,Irvine, Calif

SECTION:

CA271011 Nuclear Technology
CA259XXX Air Pollution and Industrial Hygiene

IDENTIFIERS: incinerator exhaust gas wet scrubbing radionuclide,
radioactive waste incineration exhaust gas scrubbing

DESCRIPTORS:

Radioactive wastes...

incineration of, wet scrubbing treatment of exhaust gas in
Incineration...

of radioactive wastes, wet scrubbing of exhaust gases from
Scrubbers,wet...

radioactive waste incinerator exhaust gas treatment with
CAS REGISTRY NUMBERS:

51-90-1 7665-54-5 7790-26-3 13670-17-2 incinerator exhaust gas of, wet
scrubbing in relation to
10028-17-8 10043-66-0 14762-75-5 uses, incineration of wastes contg.,
wet scrubbing treatment of exhaust gases from

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Record - 344

<DIALOG File 399: (c) 1994 American Chemical Society>
118131200 CA: 118(14)131200t JOURNAL
Oxidation processes in the separation of solids from supercritical water
AUTHOR(S): Dell'Orco, P. C.; Glynna, Ernest F.; Buelow, S.
LOCATION: Univ. Texas, Austin, TX, 78712, USA
JOURNAL: ACS Symp. Ser. DATE: 1993 VOLUME: 514 NUMBER: Supercritical
Fluid Engineering Science PAGES: 314-26 CODEN: ACSMC8 ISSN: 0097-6156
LANGUAGE: English

SECTION:

CA260002 Waste Treatment and Disposal
CA271XXX Nuclear Technology

IDENTIFIERS: sodium salt sepn supercrit water oxidn, nitrate sodium sepn
supercrit water, chloride sodium sepn supercrit water, sulfate sodium sepn

supercrit water, bicarbonate sodium sepn supercrit water, radioactive waste
supercrit water oxidn

DESCRIPTORS:

Wastewater treatment, oxidn., supercrit....

in supercrit. water, sodium salt sepn. in, of radionuclide-contg.
effluents

Radioelements, miscellaneous...

wastewater contg., supercrit. water oxidn. of, sodium salt sepn. in
CAS REGISTRY NUMBERS:

7439-89-6 7440-02-0 7440-47-3 miscellaneous, corrosion product, in
effluents from supercrit. water oxidn. process, sodium salt removal in
relation to

144-55-8 7440-46-2 7631-99-4 7647-14-5 7757-82-6 miscellaneous,
removal of, from supercrit. water, radionuclide-contg. wastewater
treatment in relation to

7732-18-5 miscellaneous, sodium salt sepn. from supercrit.,
radionuclide-contg. wastewater treatment in relation to

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Record - 345

<DIALOG File 399: (c) 1994 American Chemical Society>

118108594 CA: 118(12)108594r CONFERENCE PROCEEDING

State of the art review of air pollution control technologies for mixed
waste incinerators

AUTHOR(S): Boddy, M.; Clark, W.; Seeker, W. R.; Springsteen, B.

LOCATION: Energy and Environ. Res. Corp., Irvine, CA, 92718, USA

JOURNAL: Therm. Treat. Radioact., Hazard. Chem., Mixed Med. Wastes, Proc.

Incineration Conf., 11th EDITOR: Wacks, Morton E (Ed), DATE: 1992

PAGES: 787-94 CODEN: 58OMAN LANGUAGE: English PUBLISHER: Univ. Calif.,
Irvine, Irvine, Calif

SECTION:

CA259000 Air Pollution and Industrial Hygiene

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: review waste incineration flue gas treatment

DESCRIPTORS:

Flue gases, incinerator...

from mixed wastes, treatment of

Incineration...

of wastes, flue gases from, treatment of

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Record - 346

<DIALOG File 399: (c) 1994 American Chemical Society>

118089243 CA: 118(10)89243g JOURNAL

Comparison of nickel complexation with extracted and non-extracted humic
and fulvic materials

AUTHOR(S): Warwick, P.; Hall, A.; Patterson, M.

LOCATION: Dep. Chem., Loughborough Univ. Technol., Loughborough/Leics.,
UK,

JOURNAL: Radiochim. Acta DATE: 1992 VOLUME: 58-59 NUMBER: Pt. 1

342

PAGES: 137-44 CODEN: RAACAP ISSN: 0033-8230 LANGUAGE: English
SECTION:

CA271011 Nuclear Technology

CA219XXX Fertilizers, Soils, and Plant Nutrition

CA261XXX Water

CA268XXX Phase Equilibria, Chemical Equilibria, and Solutions

CA279XXX Inorganic Analytical Chemistry

IDENTIFIERS: nickel complexation humic fulvic material, radionuclide migration complexing humic material, radioactive waste repository humic fulvic material

DESCRIPTORS:

Chromatography, column and liquid...

high-performance size-exclusion, in comparison of nickel complexation with extd. and non-extd. humic and fulvic materials

Water purification...

nickel complexation with extd. and non-extd. humic and fulvic materials in relation to

Fulvic acids... Humus and Humic substances...

nickel complexation with extd. and nonextd.

Electric conductivity and conduction...

of working solns. of fulvic and humic substances, complexation of nickel in relation to

Radioactive wastes...

repositories for, nickel complexation with humic and fulvic materials in relation to

CAS REGISTRY NUMBERS:

9013-34-7 in treatment of moorland water contg. nickel complexes with humic and fulvic substances

7440-02-0 reactions, complexation of, with extd. and non-extd. humic and fulvic materials, comparison of

7647-14-5 uses, in gradient elution of nickel complexes with humic and fulvic substances from DEAE-cellulose column

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<DIALOG File 399: (c) 1994 American Chemical Society>

118086857 CA: 118(10)86857z CONFERENCE PROCEEDING

Waste treatment evaluation for aqueous mixed waste from incineration

AUTHOR(S): Burns, H. Holmes

LOCATION: Westinghouse Savannah River Co., Aiken, SC, 29801, USA

JOURNAL: Therm. Treat. Radioact., Hazard. Chem., Mixed Med. Wastes, Proc.

Incineration Conf., 11th EDITOR: Wacks, Morton E (Ed), DATE: 1992

PAGES: 683-8 CODEN: 580MAN LANGUAGE: English PUBLISHER: Univ. Calif., Irvine, Irvine, Calif

SECTION:

CA260002 Waste Treatment and Disposal

CA259XXX Air Pollution and Industrial Hygiene

CA271XXX Nuclear Technology

IDENTIFIERS: incinerator blowdown wastewater treatment technol, radioactive waste incineration blowdown wastewater treatment, hazardous waste incineration blowdown wastewater treatment

DESCRIPTORS:

343

Radioactive wastes... Wastes,hazardous...
incineration of mixed wastes contg., offgas treatment in, blowdown
wastewater from, treatment of
Wastewater treatment... Wastewater treatment,evapn....
of blowdown stream, from incineration offgas treatment
Flue gases,incinerator...
treatment of, blowdown wastewater from, waste solids from, treatment of
Waste solids...
treatment of, from blowdown wastewater treatment, in incineration
offgas cleaning

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<DIALOG File 399: (c) 1994 American Chemical Society>
118068667 CA: 118(8)68667h CONFERENCE PROCEEDING
Inorganic screens for aqueous effluent treatment
AUTHOR(S): Hooper, E. W.
LOCATION: Radwaste Treat. Div., AEA Technol., Harwell, UK, OX11 0RA
JOURNAL: Ion Exch. Adv., Proc. IEX '92 EDITOR: Slater, M. J (Ed),
DATE: 1992 PAGES: 310-17 CODEN: 58RKA LANGUAGE: English PUBLISHER:
Elsevier,London, UK

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: radionuclide removal aq radioactive waste sorption, pptn
radionuclide removal aq radioactive waste, filtration radionuclide removal
aq radioactive waste

DESCRIPTORS:

Ion exchangers...

for radioactive aq. wastes

Filtration...

in radionuclide level redn.

Precipitation...

in radionuclide level redn. in aq. radioactive wastes

Radioactive wastes...

inorg. sorbents for aq.

Radioelements,miscellaneous...

removal of, inorg. sorbents for

Silica gel,uses...

sorbent, for radionuclides from aq. waste solns.

CAS REGISTRY NUMBERS:

10045-97-3 10098-97-2 10198-40-0 13966-31-9 13967-48-1 13967-71-0
13981-37-8 13982-30-4 13982-39-3 14234-35-6 14391-76-5 14392-02-0
14596-12-4 15117-48-3 miscellaneous, removal of, from aq. radioactive
waste solns. by various techniques
1309-33-7 1310-14-1 11128-94-2 12173-10-3 12214-43-6 13772-29-7
54189-42-3 100091-20-1 145686-47-1 145686-48-2 145687-36-1
145687-37-2 145687-38-3 sorbent, for radionuclides from aq. waste
solns.
1313-13-9 uses, sorbent, for radionuclides from aq. waste solns.

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Record - 349

<DIALOG File 399: (c) 1994 American Chemical Society>

118066175 CA: 118(8)66175x PATENT

Process for the treatment of mixed solid wastes containing radionuclides, metals, and hazardous organic compounds

INVENTOR(AUTHOR): Gilles, Greg; Husain, Matt

LOCATION: USA

ASSIGNEE: Chemical Waste Management, Inc.

PATENT: United States ; US 5160636 A DATE: 921103

APPLICATION: US 822424 (920117)

PAGES: 11 pp. CODEN: USXXAM LANGUAGE: English CLASS: 210763000; B01D-011/02A

SECTION:

CA260004 Waste Treatment and Disposal

CA219XXX Fertilizers, Soils, and Plant Nutrition

CA271XXX Nuclear Technology

IDENTIFIERS: hazardous mixed solid waste decontamination, radionuclide removal mixed solid waste, metal removal mixed solid waste, org compd removal mixed solid waste, remediation hazardous mixed solid waste

DESCRIPTORS:

Waste solids,contaminated soils... Waste solids,debris... Waste solids,landfill... Waste solids,sludges...

metals and hazardous org. compds. in, removal of, decontamination process for

Decontamination...

of hazardous mixed solid wastes, process for

Metals,miscellaneous... Organic compounds,miscellaneous... Volatile substances...

removal of, from mixed solid wastes, decontamination process for

CAS REGISTRY NUMBERS:

7782-44-7 miscellaneous, volatile pollutant catalytic oxidn. with, in mixed solid waste decontamination

7440-47-3 uses, oxidn. catalyst contg., for removal of volatile substances, from mixed solid wastes

1344-28-1 uses, oxidn. catalyst support contg., for removal of volatile substances, from mixed solid wastes

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Record - 350

<DIALOG File 399: (c) 1994 American Chemical Society>

117159416 CA: 117(16)159416w JOURNAL

Uptake of cerium, cobalt and cesium by *Potamogeton crispus*

AUTHOR(S): Hafez, Mohamed B.; Hafez, Nabil; Ramadan, Yasser S.

LOCATION: Hot Lab. Cent., At. Energy Auth., Cairo, Egypt,

JOURNAL: J. Chem. Technol. Biotechnol. DATE: 1992 VOLUME: 54 NUMBER: 4

PAGES: 337-40 CODEN: JCTBED ISSN: 0268-2575 LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

CA211XXX Plant Biochemistry

CA219XXX Fertilizers, Soils, and Plant Nutrition

IDENTIFIERS: aquatic plant uptake radionuclide, *Potamogeton crispus*

345

uptake cerium cobalt cesium, radioactive waste low level liq treatment

DESCRIPTORS:

Radioactive wastes, liq. low-level...

treatment of, by aquatic plant

Potamogeton crispus...

uptake of cerium and cesium and cobalt by, radioactive low-level liq.

waste treatment in relation to

CAS REGISTRY NUMBERS:

7440-45-1 7440-46-2 7440-48-4 10045-97-3 10198-40-0 14762-78-8

properties, uptake of, by Potamogeton crispus

994-36-5 uptake of radionuclides by Potamogeton crispus in presence of

60-00-4 7447-40-7 7647-14-5 7705-08-0 7789-75-5 uses, uptake of

radionuclides by Potamogeton crispus in presence of

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Record - 351

<IALOG File 399: (c) 1994 American Chemical Society>

117117608 CA: 117(12)117608e JOURNAL

A review of plasma destruction of hazardous mixed waste

AUTHOR(S): Donaldson, A. D.; Apa, R. P.; Eddy, Thomas L.; Flinn, J. E.

LOCATION: Idaho Natl. Eng. Lab., EG and G Idaho, Inc., Idaho Falls, ID, USA

JOURNAL: HTD (Am. Soc. Mech. Eng.) DATE: 1991 VOLUME: 161 NUMBER: Heat Transfer Therm. Plasma Process. PAGES: 41-51 CODEN: ASMHD8 ISSN: 0272-5673 LANGUAGE: English

SECTION:

CA260000 Waste Treatment and Disposal

CA271XXX Nuclear Technology

IDENTIFIERS: review plasma destruction hazardous radioactive waste

DESCRIPTORS:

Radioactive wastes... Wastes,hazardous...

plasma destruction of

Decomposition,plasma...

waste treatment by, hazardous mixed

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<IALOG File 399: (c) 1994 American Chemical Society>

117099415 CA: 117(10)99415h TECHNICAL REPORT

Key radionuclides that determine performance of geologic disposal system for high-level radioactive wastes

AUTHOR(S): Ahn, Joonhong

LOCATION: Fac. Eng., Tokyo Univ., Tokyo, Japan,

JOURNAL: Kyoto Daigaku Genshoro Jikkensho, (Tech. Rep.) DATE: 1991

NUMBER: KURRI-TR-361 PAGES: 68-78 CODEN: KDGHDH ISSN: 0287-9808

LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

CA253XXX Mineralogical and Geological Chemistry

IDENTIFIERS: radioactive waste geol disposal, radionuclide performance

346

geol repository, high level radioactive waste repository

DESCRIPTORS:

Radioelements,miscellaneous...

annihilation and group sepn. treatment of, geol. disposal system
performance assessment in relation to

Actinides...

annihilation and group sepn. treatment of, geol. radioactive waste
disposal system performance assessment in relation to

Radioactive wastes,high-level...

geol. disposal system for, group sepn. and annihilation treatment in
relation to

Geological formations...

radioactive waste repositories, radionuclide group sepn. and
annihilation treatment in relation to

CAS REGISTRY NUMBERS:

14133-76-7 15726-30-4 miscellaneous, annihilation and group sepn.
treatment of, geol. radioactive waste disposal system performance in
relation to

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Record - 353

<DIALOG File 399: (c) 1994 American Chemical Society>

117096683 CA: 117(10)96683h TECHNICAL REPORT

Initial study of halide-tolerant mediators for the electrochemical
treatment of mixed and hazardous wastes

AUTHOR(S): Farmer, J. C.; Wang, F. T.; Hawley-Fedder, R.; Lewis, P. R.;
Summers, L. J.; Foiles, L.

LOCATION: Lawrence Livermore Natl. Lab., CA, USA

JOURNAL: Report DATE: 1991 NUMBER: UCRL-LR-107781; Order No. DE91017528

PAGES: 10 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1991, 16(11), Abstr. No. 30073 AVAIL: NTIS

SECTION:

CA260004 Waste Treatment and Disposal

CA267XXX Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms

CA271XXX Nuclear Technology

CA272XXX Electrochemistry

IDENTIFIERS: org waste mediated electrochem oxidn, iron 6 mediated
electrochem oxidn waste, cobalt 3 mediated electrochem oxidn waste, silver
2 mediated electrochem oxidn waste

DESCRIPTORS:

Oxidation,electrochemical...

metal ion-mediated, of ethylene glycol, organohalide and hazardous and
mixed waste treatment in relation to

Wastes...

organohalide-contg., treatment of, by mediated electrochem. oxidn.

Oxidation catalysts,electrochem....

silver divalent ion and cobalt trivalent ion and iron hexavalent ion,
for mediated electrochem. oxidn. of ethylene glycol, treatment of
organohalide and hazardous and mixed wastes in relation to

Wastes,hazardous...

treatment of, by mediated electrochem. oxidn.

Halogen compounds... Organic compounds,halo,miscellaneous...

wastes contg., treatment of, mediated electrochem. oxidn. in
CAS REGISTRY NUMBERS:

107-21-1 reactions, electrochem. oxidn. of, metal ion-mediated,
organohalide and hazardous and mixed waste treatment in relation to
14127-55-0 15046-91-0 22541-63-5 uses, in mediated electrochem. oxidn.
of ethylene glycol, organohalide and hazardous and mixed waste
treatment in relation to

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Record - 354

<DIALOG File 399: (c) 1994 American Chemical Society>

117078478 CA: 117(8)78478r TECHNICAL REPORT

Soil washing: a preliminary assessment of its applicability to Hanford

AUTHOR(S): Gerber, M. A.; Freeman, H. D.; Baker, E. G.; Riemath, W. F.

LOCATION: Pac. Northwest Lab., Richland, WA, USA

JOURNAL: Report DATE: 1991 NUMBER: PNL-7787: Order No. DE91018654

PAGES: 84 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1991, 16(12), Abstr. No. 35063 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: soil washing Hanford site, radionuclide removal soil washing
, hazardous waste removal soil washing, radioactive waste removal soil

washing

DESCRIPTORS:

Soil pollution...

by hazardous and radioactive waste, washing treatment of

Metals, heavy, properties...

removal of contaminants, from soils by washing

Wastes, hazardous...

removal of, from contaminated soils by washing

Organic compounds, miscellaneous... Radioelements, miscellaneous...

removal of, from soils by washing

Radioactive wastes...

soil contamination by, washing treatment of

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<DIALOG File 399: (c) 1994 American Chemical Society>

117078477 CA: 117(8)78477q TECHNICAL REPORT

Estimation of uranyl acetate volatilities in the molten salt processor
under pyrolytic operating conditions

AUTHOR(S): Krikorian, O. H.

LOCATION: Lawrence Livermore Natl. Lab., Livermore, CA, USA

JOURNAL: Report DATE: 1991 NUMBER: UCRL-ID-107877; Order No. DE91018659

PAGES: 16 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1991, 16(12), Abstr. NO. 34732 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: uranium volatility gaseous uranyl acetate, uranyl acetate
volatility molten salt processor, radioactive mixed waste molten salt

348

processor, pyrolysis uranyl acetate molten salt processor

DESCRIPTORS:

Radioactive wastes...

treatment of mixed, in molten salt processor, volatility of uranium as gaseous uranyl acetate under pyrolytic conditions in relation to

CAS REGISTRY NUMBERS:

7440-61-1 properties, volatility of, as gaseous uranyl acetate in mixed waste molten salt processor under pyrolytic conditions

112-40-3 pyrolysis of, uranyl acetate vapor pressure calcn. for, uranium volatility in relation to

124-38-9 7782-44-7 uses, in pyrolysis of dodecane in mixed waste molten salt processor, uranyl acetate vapor pressure calcn. for, uranium volatility in relation to

541-09-3 volatility of uranium as gaseous, in mixed waste molten salt processor under pyrolytic operation

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Record - 356

<DIALOG File 399: (c) 1994 American Chemical Society>

117075706 CA: 117(8)75706c JOURNAL

A study of reclaiming and reuse of electroplating mixed wastewaters

AUTHOR(S): Li, Chunhua; Wu, Shan

LOCATION: Beijing Polytec. Univ., Beijing, Peop. Rep. China,

JOURNAL: Water Treat. DATE: 1992 VOLUME: 7 NUMBER: 1 PAGES: 105-16

CODEN: WTREE2 ISSN: 0921-2639 LANGUAGE: English

SECTION:

CA260002 Waste Treatment and Disposal

CA261XXX Water

CA272XXX Electrochemistry

IDENTIFIERS: electroplating wastewater electrocoagulation reclamation reuse

DESCRIPTORS:

Wastewater treatment, reclamation...

of electroplating effluent, after electrocoagulation, for reuse for rinsing of nickel-plated parts

Wastewater treatment, electrocoagulation...

of electroplating effluent, for reuse for rinsing of nickel-plated parts

Metals, heavy, miscellaneous...

removal of, from electroplating wastewater, by electrocoagulation, effluent from, reuse of, for rinsing of nickel-plated parts

Electrodeposition and Electroplating...

wastewater from, electrocoagulation of, effluent from, reuse of, in rinsing of nickel-plated parts

CAS REGISTRY NUMBERS:

7439-89-6 7440-02-0 7440-47-3 7440-50-8 7440-66-6 miscellaneous, removal of, from electroplating wastewater, by electrocoagulation, effluent from, reuse of, for rinsing of nickel-plated parts

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<DIALOG File 399: (c) 1994 American Chemical Society>

116223497 CA: 116(22)223497g TECHNICAL REPORT

Engineering-scale test 4: in situ vitrification of toxic metals and volatile organics buried in INEL soils

AUTHOR(S): Shade, J. W.; Tixier, J. S.; Farnsworth, R. K.; Charboneau, B.

L.

LOCATION: Pac. Northwest Lab., Richland, WA, USA

JOURNAL: Report DATE: 1991 NUMBER: PNL-7611; Order No. DE91015486

PAGES: 41 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1991, 16(10), Abstr. No. 25983 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

CA219XXX Fertilizers, Soils, and Plant Nutrition

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: insitu vitrification buried mixed transuranic waste, toxic metal buried waste insitu vitrification, volatile org buried waste insitu vitrification, soil pollution buried waste insitu vitrification, radioactive waste buried insitu vitrification, hazardous mixed buried waste insitu vitrification

DESCRIPTORS:

Soil pollution...

in-situ vitrification of mixed transuranic waste

Volatile substances...

org., in-situ vitrification of mixed transuranic buried waste contg.

Radioactive wastes...

vitrification of buried mixed transuranic, in-situ

Cement...

vitrification of buried mixed transuranic waste and orgs. in form of sludge/grease mixts., in-situ

Combustibles...

vitrification of buried mixed transuranic waste contg., in-situ

Transuranium elements...

vitrification of buried mixed waste contg., in-situ

CAS REGISTRY NUMBERS:

7439-92-1 7439-97-6 7440-22-4 7440-38-2 7440-39-3 7440-43-9 7440-47-3

7782-49-2 11121-90-7 12597-68-1 miscellaneous, vitrification of buried mixed transuranic waste contg., in-situ

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<DIALOG File 399: (c) 1994 American Chemical Society>

116223479 CA: 116(22)223479c JOURNAL

Improved cement barriers applied in nuclear wastes

AUTHOR(S): Ghattas, N. K.; Eskander, S. B.; Bayoumi, T. A.

LOCATION: Radioisot. Dep., At. Energy Auth., Egypt,

JOURNAL: Cem. Concr. Res. DATE: 1992 VOLUME: 22 NUMBER: 2-3 PAGES:

311-18 CODEN: CCNRAI ISSN: 0008-8846 LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

CA258XXX Cement, Concrete, and related Building Materials

IDENTIFIERS: radionuclide release barrier cement radioactive waste,

350

ferrocyanide cement radionuclide release barrier waste, polymer cement
radionuclide release barrier waste

DESCRIPTORS:

Cement...

barrier, to radionuclide release in radioactive wastes, chem. or
polymer treated

Polymers,uses...

cement impregnated with, as barrier for radionuclide release from
radioactive wastes

Radioactive wastes...

immobilization of, chem. or polymer treated cement in

CAS REGISTRY NUMBERS:

9011-14-7 cement impregnated with, as barrier to radionuclide release from
radioactive wastes

13408-63-4 in cement chem. treatment as barrier to radionuclide release
from radioactive waste

10045-97-3 10198-40-0 miscellaneous, release of, from radioactive wastes,
chem. treated or polymer impregnated cement as barrier to

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Record - 359

<DIALOG File 399: (c) 1994 American Chemical Society>

116223452 CA: 116(22)223452p TECHNICAL REPORT

Lawrence Livermore National Laboratory environmental report for 1990

AUTHOR(S): Sims, J. M.; Surano, K. A.; Lamson, K. C.; Balke, B. K.;
Steenhoven, J. C.; Schwoegler, D. R.; et al.

LOCATION: Lawrence Livermore Natl. Lab., Livermore, CA, USA

JOURNAL: Report DATE: 1990 NUMBER: UCRL-50027-90; Order No. DE92001797

PAGES: 330 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1992, 17(1), Abstr. No. 1716 AVAIL: NTIS

SECTION:

CA271010 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: radiol survey environment LLNL

DESCRIPTORS:

Air pollution... Food contamination... Plant... Soil pollution...

Wastewater treatment... Waters,natural, ground...

by radionuclides in chem. compds., in nuclear installation environment,
monitoring for

Nuclear installations...

environmental monitoring program at LLNL

Radiation...

measurement of direct, in environmental monitoring program at LLNL

Chemical compounds... Radioelements,miscellaneous...

monitoring of, in nuclear installation environment

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<DIALOG File 399: (c) 1994 American Chemical Society>

116180384 CA: 116(18)180384y JOURNAL

Treatment of mixed waste sludge

AUTHOR(S): Alperin, E. S.; Groen, Arend; Fox, R. D.

LOCATION: IT Corp., Knoxville, TN, USA

JOURNAL: Proc., Annu. Meet. - Air Waste Manage. Assoc. DATE: 1991

VOLUME: 84th NUMBER: Vol. 11 PAGES: Paper 91/25.7, 14 pp. CODEN:

PAMEE5 ISSN: 1052-6102 LANGUAGE: English

SECTION:

CA260004 Waste Treatment and Disposal

CA237XXX Plastics Manufacture and Processing

CA259XXX Air Pollution and Industrial Hygiene

CA271XXX Nuclear Technology

IDENTIFIERS: mixed waste org thermal removal, acrylonitrile manuf sludge org removal, uranium contg sludge org removal, acrylamide removal thermal mixed waste, benzene thermal removal mixed waste

DESCRIPTORS:

Wastewater treatment sludge...

from acrylonitrile manuf., uranium-contg., hazardous org. removal from, thermal treatment process for

Radioactive wastes...

uranium-contg., from acrylonitrile manuf., hazardous org. removal from, thermal treatment process for

CAS REGISTRY NUMBERS:

71-43-2 79-06-1 miscellaneous, removal of, from uranium-contg. wastewater treatment sludge from acrylonitrile manuf., thermal treatment process for

7440-61-1 miscellaneous, wastewater treatment sludge contg., from acrylonitrile manuf., hazardous org. removal from, thermal treatment process for

107-13-1P preparation, wastewater treatment sludge from manuf. of, uranium-contg., hazardous org. removal from, thermal treatment process for

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<DIALOG File 399: (c) 1994 American Chemical Society>

116180383 CA: 116(18)180383x JOURNAL

Physical/chemical treatment of mixed waste solids

AUTHOR(S): Morris, Michael I.; Alperin, E. S.; Fox, R. D.

LOCATION: Martin Marietta Energy Syst., Oak Ridge, TN, USA

JOURNAL: Proc., Annu. Meet. - Air Waste Manage. Assoc. DATE: 1991

VOLUME: 84th NUMBER: Vol. 11 PAGES: Paper 91/25.5, 16 pp. CODEN:

PAMEE5 ISSN: 1052-6102 LANGUAGE: English

SECTION:

CA260004 Waste Treatment and Disposal

CA204XXX Toxicology

CA219XXX Fertilizers, Soils, and Plant Nutrition

CA259XXX Air Pollution and Industrial Hygiene

CA271XXX Nuclear Technology

IDENTIFIERS: mixed waste PCB thermal removal, radioactive waste PCB removal, chlorobiphenyl removal mixed waste thermal, org removal waste gas mixed waste

DESCRIPTORS:

Waste gases...

352

from polychlorinated biphenyl removal from mixed wastes, treatment of, system for

Radioactive wastes,low-level...

mixed, polychlorinated biphenyl removal from, by thermal treatment, and treatment of waste gas therefrom

Waste solids,contaminated soils...

polychlorinated biphenyl- and radioelement-contg., org. removal from, by thermal treatment, and treatment of waste gas therefrom

CAS REGISTRY NUMBERS:

92-52-4D chloro derivs., removal of, from low-level mixed waste by thermal treatment, and treatment of waste gases therefrom

7440-26-8 7440-61-1 miscellaneous, radioactive waste contg.

polychlorinated biphenyls and, low-level, org. removal from, by thermal treatment, and treatment of waste gas therefrom

11097-69-1 89577-78-6 removal of, from low-level mixed waste by thermal treatment, and treatment of waste gases therefrom

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Record - 362

<DIALOG File 399: (c) 1994 American Chemical Society>

116161096 CA: 116(16)161096q JOURNAL

Electrochemical treatment of mixed and hazardous wastes. Oxidation of ethylene glycol and benzene by silver (II)

AUTHOR(S): Farmer, Joseph C.; Wang, Francis T.; Hawley-Fedder, Ruth A.; Lewis, Patricia R.; Summers, Leslie J.; Foiles, Linda

LOCATION: Lawrence Livermore Natl. Lab., Univ. California, Livermore, CA, 94550, USA

JOURNAL: J. Electrochem. Soc. DATE: 1992 VOLUME: 139 NUMBER: 3

PAGES: 654-62 CODEN: JESOAN ISSN: 0013-4651 LANGUAGE: English

SECTION:

CA272002 Electrochemistry

CA222XXX Physical Organic Chemistry

CA260XXX Waste Treatment and Disposal

CA271XXX Nuclear Technology

IDENTIFIERS: hazardous waste destruction silver mediated electrooxidn, benzene indirect electrooxidn argentic mediated, ethylene glycol indirect electrooxidn argentic mediate, carbon dioxide formation hazardous waste electrooxidn, low level radioactive waste conversion electrooxidn, mixed waste conversion low level radioactive

DESCRIPTORS:

Electrolytic cells,diaphragm...

ceramic and glass and Nafion, for argentic-mediated oxidn. of benzaldehyde and ethylene glycol, hazardous waste destruction in relation to

Radioactive wastes,low-level...

conversion of mixed waste to, mediated electrochem. oxidn. in

Wastes,hazardous...

destruction of, electrochem., argentic-mediated

Oxidation,electrochemical...

indirect, of ethylene glycol and benzene by argentic mediator, hazardous waste destruction in relation to

CAS REGISTRY NUMBERS:

66796-30-3 cation-exchange in membrane, in electrolytic cell for
argentie-mediated electrochem. oxidn. of benzene and ethylene glycol
79-20-9 formation of, in argentic-mediated electrochem. oxidn. of benzene
88-75-5 93-58-3 99-65-0 100-25-4 528-29-0 573-56-8 586-11-8 619-24-9
15254-69-0 58763-41-0 109145-24-6 formation of, in argentic-mediated
electrochem. oxidn. of benzene in presence of nitrate, hazardous waste
destruction in relation to
64-19-7P 67-64-1P preparation, formation of, in argentic-mediated
electrochem. oxidn. of benzene
124-38-9P preparation, formation of, in argentic-mediated electrochem.
oxidn. of benzene and ethylene glycol in diaphragm cell
51-28-5P 65-85-0P 92-52-4P 98-95-3P 100-02-7P 100-47-0P 100-52-7P
106-51-4P 108-88-3P 108-95-2P 123-31-9P preparation, formation of,
in argentic-mediated electrochem. oxidn. of benzene in presence of
nitrate, hazardous waste destruction in relation to
50-00-0P 64-18-6P preparation, formation of, in argentic-mediated
electrochem. oxidn. of ethylene glycol in diaphragm cell
7440-22-4 reactions, oxidn. by electrogenerated divalent, in mediated
electrochem. oxidn. of ethylene glycol and benzene, hazardous waste
destruction in relation to
107-21-1 reactions, oxidn. of, argentic-mediated electrochem., hazardous
waste treatment in relation to
7440-06-4 uses, electrode, argentic-mediated electrochem. oxidn. of
benzene and ethylene glycol on, in diaphragm cell, hazardous waste
restriction in relation to

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Record - 363

<IALOG File 399: (c) 1994 American Chemical Society>

116158166 CA: 116(16)158166g JOURNAL

The effects of transient nitrogen loadings on nitrifying activated
sludges in completely mixed and plug-flow reactors

AUTHOR(S): Horan, N. J.; Azimi, A. A.

LOCATION: Dep. Civ. Eng., Univ. Leeds, Leeds, UK, LS2 9JT

JOURNAL: Water Res. DATE: 1992 VOLUME: 26 NUMBER: 3 PAGES: 279-84

CODEN: WATRAG ISSN: 0043-1354 LANGUAGE: English

SECTION:

CA260001 Waste Treatment and Disposal

IDENTIFIERS: nitrogen loading transient wastewater nitrification,
activated sludge wastewater nitrification, plug flow wastewater
nitrification, flow completely mixed wastewater nitrification

DESCRIPTORS:

Wastewater treatment,nitrification...

in plug and mixed flow system, comparison of

Wastewater treatment,activated-sludge process...

in plug and mixed flow system, comparison of nitrification in relation
to

Flow...

plug and mixed, in wastewater nitrification

Nitrites...

removal of, from wastewater, by nitrification, plug flow and completely
mixed flow in relation to

Nitrates, miscellaneous...

removal of, from wastewater, nitrification in plug flow and completely mixed flow in relation to

CAS REGISTRY NUMBERS:

14798-03-9 miscellaneous, removal of, from wastewater, by nitrification, plug flow and completely mixed flow in relation to

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Record - 364

<IALOG File 399: (c) 1994 American Chemical Society>

116137763 CA: 116(14)137763j CONFERENCE PROCEEDING

Novel organic, inorganic and modified inorganic materials for waste treatment

AUTHOR(S): Hudson, Michael J.

LOCATION: Dep. Chem., Univ. Reading, Reading/Berkshire, UK, RG6 2AD

JOURNAL: New Sep. Chem. Tech. Radioact. Waste Other Specific Appl. (Proc. Tech. Semin.) EDITOR: Cecille, L. (Ed), Casarci, M. (Ed), Pietrelli, L. (Ed), DATE: 1991 PAGES: 281-5 CODEN: 57QAAO LANGUAGE: English

PUBLISHER: Elsevier, London, UK
SECTION:

CA271000 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: review adsorbent radioactive waste treatment, ion exchanger radionuclide waste treatment review

DESCRIPTORS:

Adsorbents... Ion exchangers...
for radioactive waste treatment

Radioelements, preparation...

sepn. of, adsorbents and ion exchangers for

Radioactive wastes...

treatment of, adsorbents and ion exchangers for

CAS REGISTRY NUMBERS:

16834-09-6D amine intercalation compds., for radioactive waste treatment

20344-49-4D hydrophobic amine-modified, for radioactive waste treatment

1072-71-5 pptn. of cadmium by, radioactive waste treatment in relation to

7440-43-9 reactions, pptn. of, dithiothiadiazole in, radioactive waste

treatment in relation to

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Record - 365

<IALOG File 399: (c) 1994 American Chemical Society>

116070135 CA: 116(8)70135k CONFERENCE PROCEEDING

Geoforecasting: assessing the long-term evolution of geological confinement systems

AUTHOR(S): Ringrose, P.; Bonne, A.; Peaudcerf, P.; Fourniguet, J.; Kleissen, F.; Patyn, J.; Wilmot, R.

LOCATION: Dames and Moore Int., Twickenham, UK, TW1 3NJ

JOURNAL: Radioact. Waste Manage. Disposal, (Proc. Eur. Community Conf.),

3rd EDITOR: Cecille, L (Ed), DATE: 1991 PAGES: 472-87 CODEN: 57NLA8

LANGUAGE: English MEETING DATE: 900000 PUBLISHER: Elsevier, London, UK

355

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: radioactive waste repository geoforecasting radionuclide transport, computer code repository geoforecasting radionuclide treatment

DESCRIPTORS:

Computer program...

for radio and element migration in geol. repositories

Geological formations...

radioactive waste repositories, geoforecasting for radionuclide migration in

Radioactive wastes...

repositories for, geoforecasting for radionuclide transport in

Radioelements, miscellaneous...

transport of, in geol. formations, geoforecasting methods for

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<IALOG File 399: (c) 1994 American Chemical Society>

115242211 CA: 115(22)242211e JOURNAL

Wet oxidation by hydrogen peroxide for the treatment of mixed radioactive and toxic organic wastes and wastewaters

AUTHOR(S): Piccinno, T.; Salluzzo, A.; Nardi, L.

LOCATION: Cent. Ric. Energ. Casaccia, ENEA, 00060, S. M. di Galeria, Italy

JOURNAL: Waste Manage. (N. Y.) DATE: 1991 VOLUME: 11 NUMBER: 3

PAGES: 125-33 CODEN: WAMAE2 ISSN: 0956-053X LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: hydrogen peroxide radioactive mixed waste treatment, org toxic wastewater treatment, wet oxidn hydrogen peroxide

DESCRIPTORS:

Amines, tertiary, uses and miscellaneous... Aromatic hydrocarbons, uses and miscellaneous... Kerosine...

in wet oxidn. study by hydrogen peroxide for treatment of mixed radioactive wastes

Olive oil...

in wet oxidn. study by hydrogen peroxide for treatment of toxic org. wastewaters

Radioactive wastes...

org., in nuclear fuel reprocessing, wet oxidn. by hydrogen peroxide for treatment of simulated

Wastes, toxic...

org., wet oxidn. by hydrogen peroxide for treatment for mixed

Herbicides...

s-triazine based, wet oxidn. by hydrogen peroxide pretreatment of toxic org. waste and wastewaters in relation to

Wastewater treatment...

wet oxidn. by hydrogen peroxide for treatment of mixed-radioactive and toxic org. wastes and

CAS REGISTRY NUMBERS:

1912-24-9 as herbicides model in wet oxidn. study by hydrogen peroxide for

356

treatment of toxic org. wastes and wastewaters
7782-63-0 catalyst, in wet oxidn. study by hydrogen peroxide for mixed radioactive waste treatment
92-52-4D chloro derivs., in wet oxidn. study by hydrogen peroxide for treatment of toxic org. wastewaters
7664-93-9 reactions, oxidizing mixt. of hydrogen peroxide and, in wet oxidn. treatment of mixed radioactive and toxic org. wastes and wastewaters
7722-84-1 reactions, wet oxidn. by, for treatment of mixed radioactive and toxic org. wastes and wastewaters
108-67-8 126-73-8 uses and miscellaneous, in wet oxidn. study by hydrogen peroxide for treatment of mixed radioactive wastes
11096-82-5 wet oxidn. by hydrogen peroxide for treatment of simulated toxic org. wastes and wastewaters

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Record - 367

<DIALOG File 399: (c) 1994 American Chemical Society>
115216948 CA: 115(20)216948f JOURNAL
Supercritical water oxidation for treatment of mixed wastes
AUTHOR(S): Rofer, Cheryl K.
LOCATION: Earth Environ. Sci. Div., Los Alamos Natl. Lab., Los Alamos, NM
, 87545, USA
JOURNAL: Waste Manage. (Tucson, Ariz.) DATE: 1991 NUMBER: Vol. 1
PAGES: 931-4 CODEN: PSWMDY ISSN: 0275-6196 LANGUAGE: English
SECTION:
CA271011 Nuclear Technology
CA260XXX Waste Treatment and Disposal
IDENTIFIERS: mixed waste treatment supercrit water oxidn, radioactive
mixed waste treatment
DESCRIPTORS:
Radioactive wastes...
mixed, supercrit. water oxidn. for treatment of
CAS REGISTRY NUMBERS:
7732-18-5 reactions, oxidn. of, supercrit., for radioactive mixed waste
treatment

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Record - 368

<DIALOG File 399: (c) 1994 American Chemical Society>
115216916 CA: 115(20)216916u JOURNAL
The application of novel extraction chromatographic materials to the
reduction and removal of radionuclides from waste solutions
AUTHOR(S): Horwitz, R. Philip; Dietz, Mark L.; Rajkovich, Susan B.;
Einolf, David M.
LOCATION: ElChroM Ind., Inc., Darien, IL, 60559, USA
JOURNAL: Radioact. Radiochem. DATE: 1991 VOLUME: 2 NUMBER: 2 PAGES:
10, 12 CODEN: RARAE6 ISSN: 1045-845X LANGUAGE: English
SECTION:
CA271011 Nuclear Technology

CA261XXX Water

IDENTIFIERS: radioactive waste soln chromatog treatment

DESCRIPTORS:

Chromatography, column and liquid...

in radionuclide extn. from waste solns.

Radioactive wastes, wastewaters...

radionuclide removal from, extn. chromatog. in

Radioactive wastes, liq....

strontium removal from, extn. chromatog. in

Waters, natural, ground...

uranium removal from, extn. chromatog. in

CAS REGISTRY NUMBERS:

37380-43-1 137087-21-9 in extn. chromatog. removal of radionuclides from waste solns.

137087-69-5 in extn. chromatog. sepn. of strontium from radioactive waste soln.

7440-61-1P preparation, removal of, from groundwater, extn. chromatog. in

7440-24-6P preparation, removal of, from radioactive waste solns., extn. chromatog. in

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<DIALOG File 399: (c) 1994 American Chemical Society>

115216669 CA: 115(20)216669r JOURNAL

The pilot plant testing of the continuous extraction of radionuclides using immobilized biomass

AUTHOR(S): Tsezos, Marios; McCready, Ronald G. L.

LOCATION: Dep. Chem. Eng., McMaster Univ., Hamilton, ON, Can.,

JOURNAL: Environ. Sci. Res. DATE: 1991 VOLUME: 41 NUMBER: Environ. Biotechnol. Waste Treat. PAGES: 249-60 CODEN: EVSRBT ISSN: 0090-0427

LANGUAGE: English

SECTION:

CA271000 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: review biomass sorbent radionuclide wastewater

DESCRIPTORS:

Biomass...

immobilized, in treatment of radioactive wastewater

Radioactive wastes, wastewaters...

processing of, immobilized microbial biomass in

Radioelements, preparation...

selective extn. of, immobilized microbial biomass in

CAS REGISTRY NUMBERS:

7440-61-1P preparation, sepn. of, immobilized microbial biomass in

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Record - 370

<DIALOG File 399: (c) 1994 American Chemical Society>

115080674 CA: 115(8)80674d JOURNAL

Retention of some radionuclides in furnace lining during incineration of

radioactive wastes

AUTHOR(S): Gulis, G.

LOCATION: Nucl. Power Plants Res. Inst., 918 64, Trnava, Czech.

JOURNAL: J. Radioanal. Nucl. Chem. DATE: 1991 VOLUME: 150 NUMBER: 2

PAGES: 261-7 CODEN: JRNCDM ISSN: 0236-5731 LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: radionuclide retention furnace lining incineration,
radioactive solid waste incineration

DESCRIPTORS:

Incinerators...

for radioactive solid waste treatment, radionuclide retention in
furnace lining of

Radioactive wastes,solid...

incineration of, radionuclide retention in furnace lining during

Linings,furnace...

radionuclide retention in, during incineration of solid radioactive
waste

Health physics...

radionuclide retention in furnace lining during incineration of solid
radioactive wastes in relation to

Radioelements,properties...

retention of, in furnace lining during incineration of solids

CAS REGISTRY NUMBERS:

10045-97-3 10198-40-0 13966-31-9 13967-73-2 13982-39-3 properties,

retention of, in furnace lining during incineration of solid

radioactive wastes

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<DIALOG File 399: (c) 1994 American Chemical Society>

115059172 CA: 115(6)59172d JOURNAL

Removal of cesium-137 and cobalt-60 from real radioactive waste solution
by precipitation-flocculation method

AUTHOR(S): Lazic, S.; Vukovic, Z.

LOCATION: Radiat. Prot. Dep., Boris Kidric Inst. Nucl. Sci., 11001,
Belgrade, Yugoslavia

JOURNAL: Radioact. Waste Manage. Nucl. Fuel Cycle DATE: 1991 VOLUME: 15
NUMBER: 4 PAGES: 241-50 CODEN: RWMCD4 ISSN: 0739-5876 LANGUAGE:

English

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: radionuclide removal liq waste, radioactive liq waste
radionuclide removal, cesium 137 removal liq waste, cobalt 60 removal liq
waste, wastewater radioactive decontamination pptn flocculation

DESCRIPTORS:

Radioactive wastes,liq.... Radioactive wastes,wastewaters...

cesium-137 and cobalt-60 removal from, by pptn.-flocculation method

Polymers,uses and miscellaneous...

flocculation with, in radioactive wastewater decontamination treatment

Polyelectrolytes,anionic... Polyelectrolytes,cationic...

flocculation with, in radioactive wastewater treatment

359

CAS REGISTRY NUMBERS:

102903-50-4 119938-23-7 120026-42-8 120920-02-7 135152-96-4
135152-97-5 135152-98-6 flocculation with anionic polyelectrolyte of,
in radioactive wastewater decontamination treatment
102640-52-8 113355-84-3 113355-85-4 flocculation with cationic
polyelectrolyte of, in radioactive wastewater decontamination treatment
131094-50-3 flocculation with nonionic polyelectrolyte of, in radioactive
wastewater decontamination treatment
15415-49-3D solid solns. with cobalt dipotassium ferrocyanide, pptn. with,
in radioactive wastewater decontamination treatment
13821-10-8D solid solns. with dicobalt ferrocyanide, pptn. with, in
radioactive wastewater decontamination treatment
10045-97-3 10198-40-0 uses and miscellaneous, removal of, from
radioactive wastewater by pptn.-flocculation method

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<DIALOG File 399: (c) 1994 American Chemical Society>

115014814 CA: 115(2)14814y TECHNICAL REPORT
Superfund Record of Decision (EPA Region 9): Nineteenth Avenue Landfill,
Phoenix, AZ. (first remedial action), September 1989
CORPORATE AUTHOR(S): United States Environmental Protection Agency
LOCATION: Off. Emerg. Rem. Response, Washington, DC, USA
JOURNAL: Report DATE: 1989 NUMBER: EPA/ROD/R09-89/402; Order No.
PB90-220534 PAGES: 433 pp. CODEN: D8REP4 LANGUAGE: English CITATION:
Gov. Rep. Announce. Index (U. S.) 1990, 90(15), Abstr. No. 038,754 AVAIL:
NTIS

SECTION:

CA260005 Waste Treatment and Disposal

CA219XXX Fertilizers, Soils, and Plant Nutrition

CA261XXX Water

CA271XXX Nuclear Technology

IDENTIFIERS: landfill remediation Superfund Phoenix Arizona, hazardous
landfill remediation Phoenix Arizona

DESCRIPTORS:

Water pollution...

by mixed waste-contg. Superfund disposal landfill, remediation in
relation to, in Phoenix, Arizona

Radioactive wastes...

in mixed waste landfill, at Superfund disposal site, remediation in
relation to, in Phoenix, Arizona

Waste gases...

methane-contg., from mixed waste landfill Superfund site, collection
system for, in Phoenix, Arizona

Waste solids,landfill...

mixed waste-contg., Superfund, remediation of, in Phoenix, Arizona
CAS REGISTRY NUMBERS:

74-82-8 uses and miscellaneous, from mixed waste landfill, collection
system for, at Superfund site, Phoenix, Arizona

108-88-3 1330-20-7 uses and miscellaneous, in mixed waste landfill, at
Superfund disposal site, remediation in relation to, in Phoenix,
Arizona

360

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114216504 CA: 114(22)216504n JOURNAL

Grout disposal system for Hanford site mixed waste

AUTHOR(S): Van Beek, J. E.; Wodrich, D. D.

LOCATION: Westinghouse Hanford Co., USA

JOURNAL: Proc. Symp. Waste Manage. DATE: 1990 NUMBER: Waste Manage. '90, Vol. 1 PAGES: 797-802 CODEN: PSWMDY ISSN: 0275-6196 LANGUAGE:

English

SECTION:

CA271011 Nuclear Technology

CA258XXX Cement, Concrete, and related Building Materials

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: radioactive waste grout disposal, hazardous mixed waste
grout disposal

DESCRIPTORS:

Radioactive wastes, liq....

disposal of, in concrete vaults, Grout Treatment Facility for
Cement...

in radioactive liq. waste immobilization for disposal in concrete
vaults

Grout...

in radioactive liq. wastes immobilization for disposal in concrete
vaults

Wastes, hazardous...

mixed, grout disposal system for Hanford

Concrete...

vaults, for disposal of grout-immobilized radioactive liq. wastes

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114213613 CA: 114(22)213613m JOURNAL

Electrochemical ion exchange

AUTHOR(S): Bridger, Nevill J.; Jones, Christopher P.; Neville, Mark D.

LOCATION: Appl. Electrochem. Group, AEA Technol., Didcot/Oxfordshire, UK,
OX11 0RA

JOURNAL: J. Chem. Technol. Biotechnol. DATE: 1991 VOLUME: 50 NUMBER: 4
PAGES: 469-81 CODEN: JCTBED ISSN: 0268-2575 LANGUAGE: English

SECTION:

CA260002 Waste Treatment and Disposal

CA271XXX Nuclear Technology

IDENTIFIERS: electrochem ion exchange wastewater treatment

DESCRIPTORS:

Wastewater treatment, ion exchange...

electrochem., electrodialysis vs.

Wastewater treatment, electrochem....

ion exchange, electrodialysis vs.

361

Radioelements,uses and miscellaneous...

removal of, from PWR wastewater, electrochem. ion exchange in

Nuclear reactors,water-cooled, PWR...

wastewater from, radionuclides removal from, electrochem. ion exchange
in

CAS REGISTRY NUMBERS:

10198-40-0 13966-06-8 13966-31-9 13967-71-0 13967-76-5 13981-38-9

13981-50-5 13982-04-2 13982-39-3 14133-76-7 14391-76-5 14392-02-0

14683-10-4 uses and miscellaneous, removal of, from PWR wastewater,
electrochem. ion exchange in

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Record - 375

<IALOG File 399: (c) 1994 American Chemical Society>

114131541 CA: 114(14)131541x TECHNICAL REPORT

CURE: clean use of reactor energy

CORPORATE AUTHOR(S): Westinghouse Hanford Co.

LOCATION: Richland, WA, USA

JOURNAL: Report DATE: 1990 NUMBER: WHC-EP-0268; Order No. DE90013614

PAGES: 197 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res.

Abstr. 1990, 15(18), Abstr. No. 40443 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: radioactive waste treatment CURE process, radionuclide redn
radioactive waste treatment, neutron transmutation radioactive waste

DESCRIPTORS:

Radioactive wastes...

before disposal treatment of, to reduce inventory of long-lived
radionuclides, tech. feasibility of enhancing repository performance by

CAS REGISTRY NUMBERS:

12586-31-1 chemical and physical effects, radioactive waste treatment by

transmutation with, enhancement of repository performance by

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Record - 376

<IALOG File 399: (c) 1994 American Chemical Society>

114097431 CA: 114(11)97431z JOURNAL

Microbial biosorption of radionuclides in liquid effluent treatment

AUTHOR(S): McEldowney, S.

LOCATION: Sch. Biotechnol., Polytech. Cent. London, London, UK, W1M 8JS

JOURNAL: Appl. Biochem. Biotechnol. DATE: 1990 VOLUME: 26 NUMBER: 2

PAGES: 159-79 CODEN: ABIBDL ISSN: 0273-2289 LANGUAGE: English

SECTION:

CA208000 Radiation Biochemistry

CA271XXX Nuclear Technology

IDENTIFIERS: review radioactive waste treatment microorganism

DESCRIPTORS:

Microorganism...

in radionuclides biosorption in liq. effluent treatment

Radioelements,uses and miscellaneous...

362

removal of, in liq. effluent treatment using microbial biosorption
Radioactive wastes...

treatment of, in liq. effluent by microbial biosorption

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Record - 377

<DIALOG File 399: (c) 1994 American Chemical Society>

113120296 CA: 113(14)120296z JOURNAL

Treating mixed wastewater containing three organophosphorus pesticides by activated carbon adsorption

AUTHOR(S): Huang, Jinxia; Zhang, Hongtao

LOCATION: Dep. Chem., Hubei Univ., Wuhan, Peop. Rep. China,

JOURNAL: Water Treat. DATE: 1989 VOLUME: 4 NUMBER: 4 PAGES: 441-7

CODEN: WTREE2 LANGUAGE: English

SECTION:

CA260003 Waste Treatment and Disposal

CA205XXX Agrochemical Bioregulators

IDENTIFIERS: organophosphorus pesticide adsorption wastewater treatment, activated carbon organophosphorus pesticide adsorption

DESCRIPTORS:

Wastewater treatment, adsorption...

organophosphorus pesticide removal by, activated carbon for Pesticides...

organophosphorus, removal of, from wastewater, by activated carbon adsorption

CAS REGISTRY NUMBERS:

60-51-5 121-75-5 298-00-0 removal of, from wastewater, by activated carbon adsorption

7723-14-0 uses and miscellaneous, org., removal of, from wastewater, by activated carbon adsorption

100-02-7 uses and miscellaneous, removal of, from wastewater, by activated carbon adsorption

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Record - 378

<DIALOG File 399: (c) 1994 American Chemical Society>

112167557 CA: 112(18)167557e TECHNICAL REPORT

Waste assessment radiological characterization of the Weldon Spring Site

Raffinate Pits

CORPORATE AUTHOR(S): MK-Ferguson Co.

LOCATION: St. Charles, MO, USA

JOURNAL: Report DATE: 1989 NUMBER: DOE/OR/21548-062; Order No. DE89016202 PAGES: 100 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res. Abstr. 1989, 14(21), Abstr. No. 44805 AVAIL: NTIS

SECTION:

CA271011 Nuclear Technology

IDENTIFIERS: waste assessment radiol raffinate pit, sampling radiol assessment waste, disposal treatment radioactive waste pit, thorium decay series waste radiol characterization, uranium decay series waste radiol characterization

363

DESCRIPTORS:

Sampling...

 in waste assessment radiol. characterization of Weldon Spring Site
 Raffinate Pits

Radioactive wastes,liq....

 radiol. characterization of Weldon Spring Site Raffinate Pits contg.

Radioactive decay series,thorium... Radioactive decay series,uranium...

 radiol. characterization of Weldon Spring Site Raffinate Pits contg.

 long-lived radionuclides from

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<DIALOG File 399: (c) 1994 American Chemical Society>

112167068 CA: 112(18)167068w JOURNAL

Overview of cleanup and treatment of radioactively contaminated sites

AUTHOR(S): Chilton, B. D.; Pfuderer, H. A.

LOCATION: Oak Ridge Natl. Lab., Oak Ridge, TN, USA

JOURNAL: Nucl. Saf. DATE: 1989 VOLUME: 30 NUMBER: 4 PAGES: 519-33

CODEN: NUSAAZ ISSN: 0029-5604 LANGUAGE: English

SECTION:

CA271000 Nuclear Technology

IDENTIFIERS: review radioactivity contaminated site cleanup treatment,
radionuclide contaminated site cleanup treatment review

DESCRIPTORS:

Radioelements,uses and miscellaneous... Transuranium elements...
 cleanup and treatment methods for, at radioactively contaminated sites

Thorium ores...

 cleanup and treatment methods for sites contaminated with

Radioactive wastes...

 cleanup and treatment of radioactively contaminated sites in relation
 to

Uranium ores...

 mining of, tailings from, cleanup and treatment of radon at sites of

CAS REGISTRY NUMBERS:

10043-92-2 properties, cleanup and treatment methods for, at uranium mill
 tailing sites

7440-07-5 7440-61-1 properties, cleanup and treatment methods for weapons
 test sites contaminated with

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Record - 380

<DIALOG File 399: (c) 1994 American Chemical Society>

112041907 CA: 112(6)41907a JOURNAL

Calculation of radionuclide ground deposition by means of measurements on
sewage sludge

AUTHOR(S): Erlandsson, Bengt; Bjurman, Bjorn; Mattsson, Soeren

LOCATION: Dep. Nucl. Phys., Univ. Lund, S-223 62, Lund, Swed.

JOURNAL: Water, Air, Soil Pollut. DATE: 1989 VOLUME: 45 NUMBER: 3-4

PAGES: 329-44 CODEN: WAPLAC ISSN: 0049-6979 LANGUAGE: English

SECTION:

364

CA260006 Waste Treatment and Disposal
CA259XXX Air Pollution and Industrial Hygiene
CA271XXX Nuclear Technology
IDENTIFIERS: sludge wastewater radionuclide fallout calcn

DESCRIPTORS:

Wastewater treatment...

effluent from, fallout calcn. from, of Lund, Sweden

Wastewater...

fallout calcn. from, of Lund, Sweden

Radioelements,uses and miscellaneous...

in wastewater and sludge, fallout calcn. from, in Lund, Sweden

Wastewater treatment sludge...

radionuclides in, fallout calcn. from, of Lund, Sweden

Radioactive fallout...

radionuclides in wastewater and sludge for calcn. of, of Lund, Sweden

CAS REGISTRY NUMBERS:

10043-66-0 10045-97-3 13966-02-4 13967-48-1 13967-70-9 14392-02-0

biological studies, in wastewater and sludge, fallout calcn. from, in
Lund, Sweden

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<DIALOG File 399: (c) 1994 American Chemical Society>

111203812 CA: 111(22)203812z TECHNICAL REPORT

Radioactivity of sludge in Finland in 1987

AUTHOR(S): Puhakainen, Marketta; Rahola, Tua

LOCATION: Finn. Cent. Radiat. Nucl. Saf., SF-00101, Helsinki, Finland

JOURNAL: Sateilyturvakeskus, (Rapp.) STUK-A DATE: 1989 NUMBER: STUK-A84

PAGES: 30 pp. CODEN: SARSE3 ISSN: 0781-1705 LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: sewage sludge radionuclide municipal wastewater treatment,
aluminum sulfate sewage sludge radionuclide concn, radioactive fallout
sewage sludge wastewater treatment

DESCRIPTORS:

Nuclear reactors,power plants...

accidents, Chernobyl, radionuclide concn. in sewage aluminum sulfate
sludge from municipal wastewater treatment plants in relation to

Radioactive fallout...

from Chernobyl reactor accident, radionuclide concn. in sewage aluminum
sulfate sludge from

Radioelements,uses and miscellaneous...

in sewage aluminum sulfate sludge, from municipal wastewater-treatment
plants

Wastewater treatment sludge...

municipal, radionuclide concn. in aluminum sulfate

CAS REGISTRY NUMBERS:

10043-01-3 sewage sludge, from municipal wastewater treatment plants,
detn. of radionuclide concn. in

10043-66-0 10045-97-3 10198-40-0 13966-00-2 13966-02-4 13966-31-9
13967-48-1 13967-70-9 13968-53-1 13981-38-9 13981-50-5 14234-35-6

365

14392-02-0 14596-12-4 14683-10-4 14762-78-8 uses and miscellaneous,
concn. of, in sewage sludge from municipal wastewater treatment plants
14391-76-5 uses and miscellaneous, concn. of metastable, in sewage sludge
from municipal wastewater treatment plants

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<DIALOG File 399: (c) 1994 American Chemical Society>

110238825 CA: 110(26)238825n JOURNAL

Remedial actions for mixed chemical/radioactive wastes at the Colonie
Interim Storage Site

AUTHOR(S): Tardiff, M. F.; Atwood, M. D.

LOCATION: Bechtel Natl. Inc., Oak Ridge, TN, 37830, USA

JOURNAL: Proc. Symp. Waste Manage. DATE: 1988 NUMBER: Waste Manage.
'88, Vol. 1 PAGES: 975-8 CODEN: PSWMDY ISSN: 0275-6196 LANGUAGE:

English

SECTION:

CA271011 Nuclear Technology

CA257XXX Ceramics

CA258XXX Cement, Concrete, and related Building Materials

CA272XXX Electrochemistry

IDENTIFIERS: mixed chem radioactive waste remedial action, uranium
product cadmium electroplating, calcium hypochlorite destruction cyanide
waste, sodium cyanide removal electroplating bath, hazardous mixed waste
management

DESCRIPTORS:

Cement...

in solidification of sludges from remedial actions on mixed
chem.-radioactive wastes

Radioactive wastes... Wastes,hazardous...

management of, at interim storage site, remedial actions for

CAS REGISTRY NUMBERS:

143-33-9 destruction of, in mixed chem.-radioactive wastes at interim
storage site, calcium hypochlorite for

7778-54-3 in destruction of cyanide in mixed chem.-radioactive wastes at
interim storage site

1344-09-8 in solidification of sludges from remedial actions on mixed
chem.-radioactive wastes

57-12-5 properties, destruction of, in mixed chem.-radioactive wastes at
interim storage site, calcium hypochlorite for

7440-43-9 uses and miscellaneous, electroplating of, from cyanide baths,
on uranium products, waste treatment in relation to

7440-61-1 uses and miscellaneous, remedial actions for mixed
chem.-radioactive waste contg.

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Record - 383

<DIALOG File 399: (c) 1994 American Chemical Society>

110198547 CA: 110(22)198547q JOURNAL

Nitrogen removal in an intermittently aerated completely mixed reactor

AUTHOR(S): Lin, Kwan Chow; Tsang, Kwok Wai Richard
LOCATION: Dep. Civ. Eng., Univ. New Brunswick, Fredericton, NB, Can., E3B
5A3

JOURNAL: Environ. Technol. Lett. DATE: 1989 VOLUME: 10 NUMBER: 1
PAGES: 1-8 CODEN: ETLEDB ISSN: 0143-2060 LANGUAGE: English
SECTION:

CA260001 Waste Treatment and Disposal
CA217XXX Food and Feed Chemistry

IDENTIFIERS: potato processing wastewater nitrification denitrification,
intermittently aerated completely mixed wastewater, aerobic anaerobic
treatment potato wastewater

DESCRIPTORS:

Wastewater treatment,biol.... Wastewater treatment,denitrification...

Wastewater treatment,nitrification...

of potato processing effluent, intermittently aerated completely mixed
reactors in

Potato...

processing of, wastewater from, nitrogen removal from, intermittently
aerated completely mixed reactors in

Nitrates,uses and miscellaneous... Nitrites...

removal of, from potato processing wastewater, in intermittently
aerated completely mixed reactors

CAS REGISTRY NUMBERS:

7727-37-9 14798-03-9 uses and miscellaneous, removal of, from potato
processing wastewater, in intermittently aerated completely mixed
reactors

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Record - 384

<DIALOG File 399: (c) 1994 American Chemical Society>
110178886 CA: 110(20)178886w CONFERENCE PROCEEDING

Heavy metal and radionuclide uptake by fungi and yeasts

AUTHOR(S): Gadd, G. M.; White, C.; De Rome, L.

LOCATION: Dep. Biol. Sci., Univ. Dundee, Dundee, UK, DD1 4HN

JOURNAL: Biohydrometall., Proc. Int. Symp. EDITOR: Norris, Paul R. (Ed),
Kelly, Don P (Ed), DATE: 1988 PAGES: 421-35 CODEN: 56MJA0 LANGUAGE:
English MEETING DATE: 870000 PUBLISHER: Sci. Technol. Lett.,Kew, UK

SECTION:

CA260001 Waste Treatment and Disposal

CA271XXX Nuclear Technology

IDENTIFIERS: heavy metal radionuclide sorption fungi yeast

DESCRIPTORS:

Metals,heavy,biological studies...

fungi and yeast uptake of, wastewater treatment in relation to

Aspergillus niger... Cladosporium resinae... Rhizopus arrhizus...

Saccharomyces cerevisiae...

heavy metal and radionuclide uptake from water by, wastewater treatment
in relation to

Wastewater treatment,biol....

heavy metal uptake by fungi and yeasts in

Radioactive wastes,liq....

treatment of, fungi and yeasts in

CAS REGISTRY NUMBERS:

7440-24-6 7440-29-1 7440-50-8 7440-61-1 biological studies, fungi and yeast uptake of, wastewater treatment in relation to

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Record - 385

<DIALOG File 399: (c) 1994 American Chemical Society>

110159881 CA: 110(18)159881z PATENT

Removal of heavy metals from waste liquids and stack gases with microorganisms

INVENTOR(AUTHOR): Revis, Nathaniel W.; Osborne, Tanya R.; Hadden, Charles T.

LOCATION: USA

PATENT: United States ; US 4789478 A DATE: 881206

APPLICATION: US 63579 (870617) *US 918767 (861014)

PAGES: 6 pp. Cont.-in-part of U.S. Ser. No. 918,767, abandoned. CODEN:

USXXAM LANGUAGE: English CLASS: 210611000; C02F-001/62A; C02F-003/34B

SECTION:

CA260001 Waste Treatment and Disposal

CA259XXX Air Pollution and Industrial Hygiene

CA271XXX Nuclear Technology

IDENTIFIERS: heavy metal removal microorganism wastewater, radionuclide removal wastewater treatment microorganism, sulfur dioxide removal stack gas, stack gas sulfur trioxide removal, Citrobacter Desulfomonas metal removal wastewater

DESCRIPTORS:

Microorganism,sulfate-reducing...

dissimilatory, wastewater treatment with Citrobacter freundii and, for removal of heavy metals as sulfides

Flue gases...

heavy metal and sulfur oxides in, removal of, microorganisms in

Sulfides,uses and miscellaneous...

heavy metal, pptn. from wastewaters of, Citrobacter freundii and Desulfomonas in

Coating materials,paints...

manuf. of, wastewater from, heavy metal ions removal from, microorganisms in

Electrodeposition and Electroplating...

of metal, wastewater from, heavy metal ions removal from, with microorganisms

Power,nuclear...

plants, wastewater from, radionuclide removal from, microorganism in

Radioactive wastes,wastewaters...

radionuclide removal from, microorganisms in

Metals,heavy,uses and miscellaneous...

removal of, from wastewaters, Citrobacter Fruendii and Desulfomonas in

Scrubbers,gas...

wastewater from, heavy metal ions in, removal of, microorganisms in

Mines and Mining...

wastewater from, heavy metal ions removal from, microorganisms in

Desulfomonas pigra... Desulfomonas...

wastewater treatment with Citrobacter freundii and, for removal of

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heavy metals as sulfides
Citrobacter freundii... wastewater treatment with Desulfomonas and, for removal of heavy metals as sulfides
Wastewater treatment,biol.... with Citrobacter freundii and Desulfomonas, for heavy metal ion removal as sulfides
CAS REGISTRY NUMBERS:
7446-09-5 7446-11-9 uses and miscellaneous, removal of, from absorbent liq. from stack gas treatment, Citrobacter freundii and Desulfomonas in
7439-89-6 7439-92-1 7439-97-6 7440-43-9 7440-50-8 7440-66-6 uses and miscellaneous, removal of, from wastewaters, Citrobacter freundii and Desulfomonas in

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Record - 386

<DIALOG File 399: (c) 1994 American Chemical Society>
109011186 CA: 109(2)11186k TECHNICAL REPORT
New TNX Seepage Basin: environmental information document
AUTHOR(S): Dunaway, J. K. W.; Johnson, W. F.; Kingley, L. E.; Simmons, R. V.; Bledsoe, H. W.
LOCATION: Savannah River Lab., Aiken, SC, USA
JOURNAL: Report DATE: 1986 NUMBER: DPST-85-698; Order No. DE87013040
PAGES: 173 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res. Abstr. 1987, 12(20), Abstr. No. 41959 AVAIL: NTIS

SECTION:

CA260005 Waste Treatment and Disposal
CA259XXX Air Pollution and Industrial Hygiene
CA261XXX Water

IDENTIFIERS: environmental effect waste seepage basin, wealth effect waste seepage basin

DESCRIPTORS:

Air pollution...

by chems., from waste seepage basin, human exposure health risks in relation to, at Savannah River Plant site, South Carolina

Wastewater treatment sludge... Wastewater...

disposal of, seepage basin for, environmental effects of, at Savannah River Plant site, South Carolina

Radioelements,properties...

environmental transport of, from waste seepage basin, health risks in relation to, at Savannah River Plant, South Carolina

Environmental transport...

of chem. and radionuclide pollutants from waste seepage basin, human exposure health risks in relation to, at Savannah River Plant site, South Carolina

Water pollution...

of groundwater, by leachate from waste seepage basin, human exposure health risks in relation to, at Savannah River Plant site, South Carolina

CAS REGISTRY NUMBERS:

67-66-3 14797-55-8 biological studies, groundwater pollution by, human exposure risks from, leaching of waste seepage basin in relation to, at

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Savannah River Plant, South Carolina
7440-23-5 7440-66-6 biological studies, groundwater pollution by,
leaching from waste seepage basin in relation to, at Savannah River
Plant site, South Carolina

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Record - 387

<IALOG File 399: (c) 1994 American Chemical Society>
108137219 CA: 108(16)137219w JOURNAL
Biomagnetic separation and extraction process
AUTHOR(S): Watson, J. H. P.; Ellwood, D. C.
LOCATION: Inst. Cryog., Univ. Southampton, Southampton, UK,
JOURNAL: IEEE Trans. Magn. DATE: 1987 VOLUME: MAG-23 NUMBER: 5, Pt. 2
PAGES: 3751-2 CODEN: IEMGAQ ISSN: 0018-9464 LANGUAGE: English
SECTION:
CA260001 Waste Treatment and Disposal
CA271XXX Nuclear Technology
IDENTIFIERS: biomagnetic removal metal wastewater, radionuclide removal
wastewater biomagnetic, uranyl ion removal wastewater biomagnetic
DESCRIPTORS:
Separators,magnetic...
in wastewater treatment, for removal of microorganisms coated with
paramagnetic metals
Wastewater treatment,sepn., magnetic...
of microorganisms coated with paramagnetic metal salts
Radioactive wastes,liq....
radioelement removal from, biomagnetic process in
Metals,uses and miscellaneous... Radioelements,uses and miscellaneous...
removal of paramagnetic, from wastewater, biomagnetic process in

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Record - 388

<IALOG File 399: (c) 1994 American Chemical Society>
108064383 CA: 108(8)64383h DISSERTATION
Removal of radionuclides from process streams, a series of applications
AUTHOR(S): Menetrez, Marc Yves
LOCATION: North Carolina State Univ., Raleigh, NC, USA
DATE: 1987 PAGES: 183 pp. CODEN: DABBBA LANGUAGE: English CITATION:
Diss. Abstr. Int. B 1987, 48(6), 1755 AVAIL: Univ. Microfilms Int., Order
No. DA8717278
SECTION:
CA271011 Nuclear Technology
IDENTIFIERS: radionuclide removal process stream, waste radioactive
treatment process stream
DESCRIPTORS:
Radioelements,uses and miscellaneous...
removal of, from process streams
Radioactive wastes,liq....
treatment of, removal of radionuclides from process streams in relation
to

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Record - 389

<DIALOG File 399: (c) 1994 American Chemical Society>

108012896 CA: 108(2)12896h JOURNAL

Three-dimensional groundwater flow and advection diffusion code for treating decay chain of radioactive materials by finite element method

AUTHOR(S): Kawamura, Ryuji

LOCATION: Japan Inf. Serv., Ltd., Tokyo, Japan, 107

JOURNAL: J. Nucl. Sci. Technol. DATE: 1987 VOLUME: 24 NUMBER: 11

PAGES: 937-50 CODEN: JNSTAX ISSN: 0022-3131 LANGUAGE: English

SECTION:

CA271011 Nuclear Technology

CA253XXX Mineralogical and Geological Chemistry

CA261XXX Water

IDENTIFIERS: radioactive waste groundwater flow repository, radionuclide groundwater transport repository

DESCRIPTORS:

Radioelements, properties...

behavior in repositories, groundwater flow and advection diffusion code, using finite element method

Radioactive wastes...

disposal of, in repository, 3-dimensional groundwater flow and advection diffusion code for treating decay chain of radioactive materials by finite element method in relation to

Waters, natural, ground...

flow of, computer code for, for treating decay chain of radioactive materials by finite element method

Computer program...

for groundwater flow and advection diffusion, for treating decay chain of radioactive materials by finite element method, PER8MIGR

Flow...

of groundwater, computer code for, for treating decay chain of radioactive materials by finite element method

Diffusion...

radioactive material decay chain treatment by finite element method in relation to computer code for

CAS REGISTRY NUMBERS:

13966-29-5 13982-63-3 14269-63-7 properties, groundwater flow and advection diffusion code for treating decay chain of radioactive materials by finite element method in relation to

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<DIALOG File 399: (c) 1994 American Chemical Society>

107241940 CA: 107(26)241940q JOURNAL

Use of algae, Chlorella vulgaris (Beij) and Scenedesmus quadricauda (Turp) Bre'b and bacterium, Escherichia coli in the treatment of pulp and polyfiber wastewater

AUTHOR(S): Hosetti, B. B.; Patil, H. S.; Dandawatimath, P. G.

371

LOCATION: Zool. Dep., Karnatak Univ., Dharwad, 580 003, India
JOURNAL: Indian J. Exp. Biol. DATE: 1987 VOLUME: 25 NUMBER: 9 PAGES: 634-6 CODEN: IJEBA6 ISSN: 0019-5189 LANGUAGE: English

SECTION:

CA260001 Waste Treatment and Disposal

CA240XXX Textiles

CA243XXX Cellulose, Lignin, Paper, and Other Wood Products

IDENTIFIERS: pulp wastewater treatment, rayon manufg wastewater treatment, stabilization pond mixed wastewater treatment

DESCRIPTORS:

Phosphates, uses and miscellaneous...

in stabilization pond treating domestic and pulp and rayon manufg. wastewaters, algal and bacterial growth in relation to

Chlorella vulgaris... Escherichia coli... Scenedesmus quadricauda...

in stabilization pond treatment of domestic and pulp and rayon manufg. wastewaters, algal and bacterial growth in relation to

Wastewater treatment, stabilization...

of domestic and pulp and rayon manufg. effluent mixt., algal and bacterial growth in relation to

Rayon, preparation...

wastewater from manuf. of, mixt. with domestic and pulp prodn. wastewaters, stabilization pond treatment of, algal and bacterial growth in relation to

CAS REGISTRY NUMBERS:

9000-92-4 9001-05-2 9001-92-7 9013-05-2 activity of, in stabilization pond treating domestic and pulp and rayon manufg. wastewaters, algal and bacterial growth in relation to

7664-41-7 7782-44-7 uses and miscellaneous, in stabilization pond treating domestic and pulp and rayon manufg. wastewaters, algal and bacterial growth in relation to

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< DIALOG File 399: (c) 1994 American Chemical Society >

107207142 CA: 107(22)207142w JOURNAL

Radionuclide concentration in sewage sludge at several location in Austria after the Chernobyl accident

AUTHOR(S): Teherani, D. K.

LOCATION: Inst. Biol., Res. Cent. Seibersdorf, A-2444, Seibersdorf, Austria

JOURNAL: J. Radioanal. Nucl. Chem. DATE: 1987 VOLUME: 118 NUMBER: 6

PAGES: 421-6 CODEN: JRNCMD ISSN: 0236-5731 LANGUAGE: English

SECTION:

CA271010 Nuclear Technology

CA260XXX Waste Treatment and Disposal

IDENTIFIERS: radionuclide concn sewage sludge Austria

DESCRIPTORS:

Nuclear reactors, power plants...

accidents, Chernobyl, radionuclide concn. in sewage sludges in Austria following

Radioelements, uses and miscellaneous...

in sewage sludge of Austria following Chernobyl accident

Health physics...

of radionuclides in sewage sludge in Austria following Chernobyl accident

Wastewater treatment sludge...

radioelements in, of Austria following Chernobyl accident

CAS REGISTRY NUMBERS:

10045-97-3 13967-70-9 13968-53-1 uses and miscellaneous, in sewage sludge following Chernobyl accident

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<DIALOG File 399: (c) 1994 American Chemical Society>

106219089 CA: 106(26)219089b CONFERENCE PROCEEDING

Leaching of heavy metals and radionuclides from uranium tailings

AUTHOR(S): Ring, R. J.; Levins, D. M.; Cooper, M. B.

LOCATION: Aust. At. Energy Comm., Australia

JOURNAL: Chemeca 85: Innovation Process Resour. Ind., Aust. Chem. Eng.

Conf., 13th DATE: 1985 PAGES: 151-6 CODEN: 55RTA4 LANGUAGE: English

PUBLISHER: Inst. Eng. Aust., St. Leonards, Australia

SECTION:

CA260005 Waste Treatment and Disposal

CA261XXX Water

CA271XXX Nuclear Technology

IDENTIFIERS: uranium tailing leachate heavy metal

DESCRIPTORS:

Water pollution...

by heavy metals, of groundwater, from uranium tailings, lime

neutralization and waste treatment in relation to

Metals, heavy, reactions... Sulfates, reactions...

leaching of, from uranium tailings, prevention of, lime neutralization in, waste disposal and water pollution in relation to

Waste solids, tailings...

uranium, heavy metals in, leaching of, lime neutralization in relation to

CAS REGISTRY NUMBERS:

7429-90-5 7439-89-6 7439-92-1 7439-95-4 7439-96-5 7440-02-0 7440-09-7

7440-21-3 7440-23-5 7440-43-9 7440-47-3 7440-48-4 7440-50-8

7440-61-1 7440-62-2 7440-66-6 7440-70-2 reactions, leaching of, from uranium tailings, prevention of, lime neutralization in, waste disposal and water pollution in relation to

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Record - 393

<DIALOG File 399: (c) 1994 American Chemical Society>

105048305 CA: 105(6)48305s JOURNAL

Radioactivity levels in municipal sludge

AUTHOR(S): Brauning, Susan; Cornaby, Barney; McGinnis, John; Lomnitz, Elliot

LOCATION: Battelle Columbus Lab., Columbus, OH, USA

JOURNAL: BioCycle DATE: 1985 VOLUME: 27 NUMBER: 5 PAGES: 48-51

CODEN: BCYCDK ISSN: 0276-5055 LANGUAGE: English

SECTION:

CA160000 Waste Treatment and Disposal

CA171XXX Nuclear Technology

IDENTIFIERS: review radionuclide municipal sludge

DESCRIPTORS:

Radioactivity...

 in municipal sludge

Wastewater treatment, sludge...

 radionuclides in, levels of

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Record - 394

<IALOG File 399: (c) 1994 American Chemical Society>

104214690 CA: 104(24)214690q JOURNAL

Treatment and disposal of special radioactive wastes comprising tritium, carbon-14, krypton-85 and iodine-129

AUTHOR(S): Bruecher, P. H.

LOCATION: Juelich Nucl. Res. Cent., Juelich, Fed. Rep. Ger.

JOURNAL: Radioact. Waste Manage. Nucl. Fuel Cycle DATE: 1986 VOLUME: 7

NUMBER: 2 PAGES: 195-207 CODEN: RWMCD4 ISSN: 0739-5876 LANGUAGE:

English

SECTION:

CA171000 Nuclear Technology

IDENTIFIERS: review fuel reprocessing radionuclide recovery, tritium recovery fuel reprocessing review, carbon 14 recovery reprocessing review, krypton 85 recovery reprocessing review, iodine 129 recovery reprocessing review

DESCRIPTORS:

Nuclear reactor fuel reprocessing...

 gaseous radionuclide recovery from

Radioactive wastes, gaseous...

 recovery of fuel-reprocessing

CAS REGISTRY NUMBERS:

10028-17-8P 13983-27-2P 14762-75-5P 15046-84-1P preparation, recovery of, from fuel reprocessing of gas

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<IALOG File 399: (c) 1994 American Chemical Society>

104212559 CA: 104(24)212559e JOURNAL

Elimination of micropollutants by sodium aluminate (NaAlO₂) flocculation during primary treatment of mixed wastewater

AUTHOR(S): Vanderborgh, J. P.; Wollast, R.

LOCATION: Lab. Trait. Eaux Pollut., Univ. Libre Bruxelles, B-1050, Brussels, Belg.

374

JOURNAL: Water Sci. Technol. DATE: 1986 VOLUME: 18 NUMBER: 1 PAGES: 67-74 CODEN: WSTED4 ISSN: 0273-1223 LANGUAGE: English

SECTION:

CA160002 Waste Treatment and Disposal

IDENTIFIERS: flocculation sodium aluminate wastewater treatment, phosphorus removal aluminate flocculation wastewater, heavy metal aluminate flocculation wastewater

DESCRIPTORS:

Metals,heavy,uses and miscellaneous...

removal of, from wastewater, by coagulation-flocculation with sodium aluminate

Wastewater treatment,coagulation... Wastewater treatment,flocculation... sodium aluminate in, heavy metal removal in

CAS REGISTRY NUMBERS:

1302-42-7 in wastewater coagulation-flocculation, heavy metal removal by

7439-89-6 7439-92-1 7439-96-5 7440-02-0 7440-22-4 7440-43-9 7440-47-3

7440-48-4 7440-50-8 7440-66-6 7723-14-0 uses and miscellaneous, removal of, from wastewater, by coagulation-flocculation with sodium aluminate

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Record - 396

<DIALOG File 399: (c) 1994 American Chemical Society>

103029085 CA: 103(4)29085n PATENT

Treatment of effluents

INVENTOR(AUTHOR): Leadbetter, Thomas; White, David Anthony

LOCATION: UK,

ASSIGNEE: British Nuclear Fuels PLC

PATENT: Britain UK Pat. Appl. ; GB 2146486 A1 DATE: 850417

APPLICATION: GB 8324107 (830908)

PAGES: 4 pp. CODEN: BAXXDU LANGUAGE: English CLASS: G21F-009/06A; C02F-009/00B

SECTION:

CA171011 Nuclear Technology

IDENTIFIERS: fuel reprocessing effluent processing, radioactive liq waste radionuclide removal

DESCRIPTORS:

Sand...

coflocculation of ferric hydroxide ppt. and particles of, in removal of radionuclides from waste soln. by hydrocyclone

Radioactive wastes,liq....

fuel-reprocessing, pptn.-flocculation processing of, in hydrocyclone for radionuclide removal

Radioelements,uses and miscellaneous...

removal of, from fuel processing effluent, pptn.-flocculation followed by hydrocyclone processing in

CAS REGISTRY NUMBERS:

55838-77-2 coflocculation of ferric hydroxide ppt. and sand particles by, in sepn. of radionuclides from nuclear reactor fuel reprocessing effluent

1309-33-7 formation and coflocculation of, with sand particles, in radionuclide removal from fuel processing effluent

375

7697-37-2 20074-52-6 uses and miscellaneous, radionuclide sepn. from nuclear reactor fuel reprocessing effluent contg., pptn.-flocculation followed by hydrocyclone treatment in
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<DIALOG File 399: (c) 1994 American Chemical Society>
99183710 CA: 99(22)183710t JOURNAL
Treatment of low-level radioactive liquid waste using tremolite silicate polymer
AUTHOR(S): Hafez, M. B.; Abo, El-Khair, B. M.; Abdel-Rehieem, A. G.
LOCATION: Fac. Sci., United Arab Emirates Univ., Cairo, Egypt,
JOURNAL: Radioact. Waste Manage. Nucl. Fuel Cycle DATE: 1983 VOLUME: 4
NUMBER: 1 PAGES: 33-9 CODEN: RWMCD4 LANGUAGE: English
SECTION:
CA171011 Nuclear Technology
CA153XXX Mineralogical and Geological Chemistry
IDENTIFIERS: tremolite radioactive waste treatment, silicate polymer
tremolite radioactive waste
DESCRIPTORS:
Radioactive wastes, liq., low-level...
treatment with tremolite silicate polymer
CAS REGISTRY NUMBERS:
14567-73-8 in radioactive low-level liq. waste treatment
10045-97-3 10098-97-2 10198-40-0 13968-55-3 14762-78-8 properties,
fixation of, on tremolite from radioactive liq. low-level waste
14265-44-2 properties, fixation of radionuclides on tremolite silicate
polymer in presence of

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Record - 398

<DIALOG File 399: (c) 1994 American Chemical Society>
99112760 CA: 99(14)112760y CONFERENCE PROCEEDING
Radionuclides in process and waste streams at an operating uranium mill
AUTHOR(S): Ring, R. J.; Levins, D. M.; Gee, F. J.
LOCATION: Lucas Heights Res. Lab., Aust. At. Energy Commission Res.
Estab., Lucas Heights, Australia
JOURNAL: Manage. Wastes Uranium Min. Milling, Proc. Int. Symp. DATE:
1982 PAGES: 247-61 CODEN: 50FEA2 LANGUAGE: English PUBLISHER: IAEA,
Vienna, Austria
SECTION:
CA171011 Nuclear Technology
CA160XXX Waste Treatment and Disposal
IDENTIFIERS: uranium ore, radium 226 uranium ore, lead 210 uranium ore,
polonium 210 uranium ore, thorium 230 uranium ore
DESCRIPTORS:
Wastewater treatment...
from uranium ore milling
Uranium ores, tailings...
mill, radioelement removal from waste streams of
CAS REGISTRY NUMBERS:

376

10361-37-2 uses and miscellaneous, in uranium ore wastewater treatment
13981-52-7 13982-63-3 14255-04-0 14269-63-7 uses and miscellaneous,
removal of, from uranium mill waste streams

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<DIALOG File 399: (c) 1994 American Chemical Society>

96076221 CA: 96(10)76221a JOURNAL
Sewage sludge - a possible indicator for radionuclides released to the
atmosphere from nuclear power plants

AUTHOR(S): Ingemannsson, T.; Mattsson, S.; Erlandsson, B.

LOCATION: Radiat. Phys. Dep., Univ. Lund, S-221 85, Lund, Swed.

JOURNAL: Health Phys. DATE: 1981 VOLUME: 41 NUMBER: 6 PAGES: 815-22

CODEN: HLTPAO ISSN: 0017-9078 LANGUAGE: English

SECTION:

CA171010 Nuclear Technology

CA160XXX Waste Treatment and Disposal

CA161XXX Water

IDENTIFIERS: reactor atm release sewage sludge, cobalt 60 sewage sludge

DESCRIPTORS:

Nuclear reactors, power plants...

atm. releases from, radioelement detection in sewage sludges in
relation to

Slimes and Sludges...

radionuclides in, following release to atm. from nuclear power plants
Wastewater treatment...

sludges from, radioelements in, following release to atm. from nuclear
power plants

CAS REGISTRY NUMBERS:

10198-40-0 occurrence, in sewage sludges as indicator of radioactivity
release to atm. from nuclear power plants

13966-02-4 occurrence, in sewage sludges, cobalt-60 ratio to, as indicator
of radioactivity release to atm. from nuclear power plants

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Record - 400

<DIALOG File 399: (c) 1994 American Chemical Society>

94180099 CA: 94(22)180099m TECHNICAL REPORT

Organic components of nuclear wastes and their potential for altering
radionuclide distribution when released to soil

AUTHOR(S): McFadden, K. M.

LOCATION: Battelle Pacific Northwest Lab., Richland, WA, USA

JOURNAL: Report DATE: 1980 NUMBER: PNL-2563 PAGES: 34 pp. CODEN:
D3REP3 LANGUAGE: English CITATION: Energy Res. Abstr. 1980, 5(23), Abstr.
No. 36138 AVAIL: NTIS

SECTION:

CA060002 Sewage and Wastes

CA019XXX Fertilizers, Soils, and Plant Nutrition

CA071XXX Nuclear Technology

IDENTIFIERS: radioactive waste disposal soil mobility, complexing agent

377

waste disposal soil, org agent waste disposal soil

DESCRIPTORS:

Organic compounds, uses and miscellaneous...

as complexing agents and diluents in nuclear reactor fuel reprocessing,
effects on mobility and sorption characteristics of individual
radioelements

Radioactive wastes...

disposal of, in soils, effect of org. components on sorption and
mobility characteristics in relation to

Coordination compounds...

formation of, in radioactive waste treatment by addn. of org. compds.,
effect on mobility and sorption in disposal in soils

Coordination...

in radioactive waste treatment by addn. of org. compds., effect on
mobility and sorption in disposal in soils

Transuranium elements...

mobility and sorption of, in radioactive waste disposal in soils,
effect of org. components on

Sorption...

of radioactive wastes elements by soils, effect of org. components on

Soils...

org. components effect on mobility and sorption of radioelements in
CAS REGISTRY NUMBERS:

7439-99-8D 7440-07-5D 7440-12-2D 7440-14-4D 7440-18-8D 7440-24-6D
7440-26-8D 7440-35-9D 7440-36-0D 7440-45-1D 7440-46-2D 7440-48-4D
7440-51-9D 7440-53-1D 7440-61-1D 7440-67-7D 7553-56-2D isotopes,
properties, mobility and sorption of, in radioactive waste disposal in
soil, effect of org. components during treatment on

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Record - 401

<IALOG File 399: (c) 1994 American Chemical Society>

92099054 CA: 92(12)99054e JOURNAL

Removal of low-level radioactivities from aqueous waste solutions with
activated carbon

AUTHOR(S): Litman, R.; Ott, C. R.; Gingras, R.

LOCATION: Dep. Civ. Eng., Univ. Lowell, Lowell, MA, 01854, USA

JOURNAL: Radiochem. Radioanal. Lett. DATE: 1979 VOLUME: 40 NUMBER: 5

PAGES: 309-18 CODEN: RRALAZ ISSN: 0079-9483 LANGUAGE: English

SECTION:

CA060002 Sewage and Wastes

CA071XXX Nuclear Technology

IDENTIFIERS: radionuclide removal waste activated carbon

DESCRIPTORS:

Radioactive wastes, low-level...

radionuclide removal from, activated carbon in

CAS REGISTRY NUMBERS:

7440-44-0 uses and miscellaneous, activated, radio element removal by, in
treatment of radioactive wastes

10045-97-3 10198-40-0 13982-39-3 14392-02-0 14683-10-4 15749-46-9

uses and miscellaneous, removal of, from radioactive wastes, activated
carbon in

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Record - 402

<DIALOG File 399: (c) 1994 American Chemical Society>

92064226 CA: 92(8)64226k JOURNAL

The study on the fixation of cesium-137 radionuclide in clinoptilolite

AUTHOR(S): Lee, Sang Hoon; Sung, Nak June; Park, Won Jong

LOCATION: Div. Radioact. Waste Manage., Korea At. Energy Res. Inst., Seoul, S. Korea

JOURNAL: Bangsason Bango Hakhoe Chi DATE: 1978 VOLUME: 3 NUMBER: 1

PAGES: 1-5 CODEN: BBHCDU LANGUAGE: English

SECTION:

CA060002 Sewage and Wastes

CA071XXX Nuclear Technology

IDENTIFIERS: clinoptilolite liq radioactive waste treatment, cesium 137 adsorption clinoptilolite

DESCRIPTORS:

Radioactive wastes,liq....

cesium-137 removal from, clinoptilolite in

CAS REGISTRY NUMBERS:

12173-10-3 radioactive wastewater treatment by, cesium-137 adsorption in 10045-97-3 uses and miscellaneous, removal of, from radioactive

wastewater, clinoptilolite in

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Record - 403

<DIALOG File 399: (c) 1994 American Chemical Society>

91180944 CA: 91(22)180944w TECHNICAL REPORT

Treatment of metallic wastes by smelting

AUTHOR(S): Cavendish, J. H.

LOCATION: Natl. Lead Co. Ohio, Cincinnati, OH, USA

JOURNAL: Report DATE: 1978 NUMBER: NLCO-1157, IAEA-SM-234/14, CONF-781180-1 PAGES: 34 pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res. Abstr. 1979, 4(9), Abstr. No. 21758 AVAIL: NTIS

SECTION:

CA060003 Sewage and Wastes

CA071XXX Nuclear Technology

IDENTIFIERS: metal radionuclide contaminated reuse decontamination

DESCRIPTORS:

Radioactive wastes...

metal recovery from slightly contaminated, from renovation and improvement of gaseous diffusion enrichment plants

Metals,preparation...

recovery of, from scrap slightly contaminated with radionuclides

CAS REGISTRY NUMBERS:

7440-61-1P preparation, enrichment of, plants for, slightly contaminated scrap metal from renovation of, metal recovery from

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Record - 404

<DIALOG File 399: (c) 1994 American Chemical Society>
91145493 CA: 91(18)145493b TECHNICAL REPORT
Hot cell facility and equipment for tests of the Hanford Radionuclide
Removal process
AUTHOR(S): Hammitt, A. P.; Schulze, W. W.
LOCATION: At. Int. Div., Rockwell Hanford Oper., Richland, WA, USA
JOURNAL: Report DATE: 1978 NUMBER: RHO-SA-52, CONF-781105-73 PAGES: 48
pp. CODEN: D3REP3 LANGUAGE: English CITATION: Energy Res. Abstr. 1979,
4(6), Abstr. No. 12621 AVAIL: NTIS
SECTION:
CA060002 Sewage and Wastes
CA071XXX Nuclear Technology
IDENTIFIERS: radionuclide removal wastewater
DESCRIPTORS:
Radioactive wastes, liq....
treatment of

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Record - 405

<DIALOG File 399: (c) 1994 American Chemical Society>
87156902 CA: 87(20)156902c TECHNICAL REPORT
Effect of municipal treatment processes on plutonium-239,240 and
cesium-137
AUTHOR(S): Alberts, J. J.; Juhn, P. J.; Nelson, D. M.; Marshall, J. S.;
Wahlgren, M. A.
LOCATION: Argonne Natl. Lab., Argonne, Ill.
JOURNAL: Argonne Natl. Lab., (Rep.) ANL DATE: 1975 NUMBER: ANL-75-3,
Radiol. Environ. Res. Div. Annu. Rep. PAGES: 97-102 CODEN: XANLDG
LANGUAGE: English
SECTION:
CA061004 Water
CA019XXX Fertilizers, Soils, and Plant Nutrition
CA060XXX Sewage and Wastes
CA071XXX Nuclear Technology
IDENTIFIERS: radionuclide drinking water sewage sludge, sludge wastewater
treatment radionuclide availability, plutonium drinking water sewage sludge
, cesium radioisotope water sewage sludge
DESCRIPTORS:
Water pollution...
by radioisotopes, of Lake Michigan
Water purification...
radioisotopes removal in, of water of Lake Michigan
Wastewater treatment...
sludge from, radioisotope content and of availability in fertilizer
from
Fertilizers...
wastewater treatment sludge, radioisotopes in, content and availability
of
CAS REGISTRY NUMBERS:
10045-97-3 14119-33-6 15117-48-3 uses and miscellaneous, removal of,

from water of Lake Michigan, and content and availability in sludge
firm wastewater treatment
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Record - 406

<IALOG File 399: (c) 1994 American Chemical Society>
86060162 CA: 86(10)60162q JOURNAL
Chemical treatment of low-level radioactive liquid waste. (I)
AUTHOR(S): Lee, Sang Hoon; Choe, Jong In; Kim, Yong Eak
LOCATION: Radioact. Waste Manage. Div., Korea At. Energy Res. Inst.,
Seoul, S. Korea
JOURNAL: J. Korean Nucl. Soc. DATE: 1976 VOLUME: 8 NUMBER: 2 PAGES:
69-76 CODEN: WJHKAW LANGUAGE: English
SECTION:
CA060002 Sewage and Wastes
CA071XXX Nuclear Technology
IDENTIFIERS: strontium 90 pptn wastewater, ruthenium 106 pptn wastewater,
cesium 137 pptn wastewater, cerium 144 pptn wastewater, radioactive waste
pptn adsorption
DESCRIPTORS:
Phosphates,uses and miscellaneous...
radioactive nuclide removal by, from low-level liq. waste
Radioactive wastes,low-level...
radionuclide removal from, pptn. and absorption in
CAS REGISTRY NUMBERS:
13601-13-3 radioactive nuclide removal by, from low-level liq. waste
471-34-1 uses and miscellaneous, radioactive nuclide removal by, from
low-level liq. waste
1318-93-0 uses and miscellaneous, radioactive waste treatment by
10045-97-3 10098-97-2 13967-48-1 14762-78-8 uses and miscellaneous,
removal of, from low-level liq. waste, pptn. and adsorption in

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Record - 407

<IALOG File 399: (c) 1994 American Chemical Society>
83152016 CA: 83(18)152016m JOURNAL
Concentrations of the medically useful radionuclides, technetium-99m and
iodine-131 at a large metropolitan waste water treatment plant
AUTHOR(S): Sodd, Vincent J.; Velten, Richard J.; Saenger, Eugene L.
LOCATION: Nucl. Med. Lab., Cincinnati Gen. Hosp., Cincinnati, Ohio
JOURNAL: Health Phys. DATE: 1975 VOLUME: 28 NUMBER: 4 PAGES: 355-9
CODEN: HLTPAO LANGUAGE: English
SECTION:
CA961001 Water
CA960XXX Sewage and Wastes
CA971XXX Nuclear Technology
IDENTIFIERS: technetium 99m river sewage, iodine 131 river sewage, river
pollution radioactive waste
DESCRIPTORS:
Waters,natural...
iodine 131 and technetium 99 in, of Ohio River, from nuclear medicine

381

wastes

CAS REGISTRY NUMBERS:

10043-66-0 biological studies, in water, of Ohio River, from nuclear medicine wastes

14133-76-7 occurrence, in water, of Ohio River, from nuclear medicine wastes

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<DIALOG File 399: (c) 1994 American Chemical Society>

82144620 CA: 82(22)144620t TECHNICAL REPORT

Removal of cesium and strontium from fuel storage basin water

AUTHOR(S): Wilding, M. W.; Rhodes, D. W.

LOCATION: Idaho Chem. Programs-Oper. Off., Allied. Chem. Corp., Idaho Falls, Idaho

JOURNAL: Report DATE: 1974 NUMBER: ICP-1048 PAGES: 23 pp. CODEN:

D7REPV LANGUAGE: English CITATION: Nucl. Sci. Abstr. 1974, 30(12), 31689

AVAIL: Dep. NTIS

SECTION:

CA960002 Sewage and Wastes

CA971XXX Nuclear Technology

IDENTIFIERS: cesium 137 removal ion exchange, strontium 90 removal ion exchange, nuclear reactor storage basin water, ion exchange radionuclide removal

DESCRIPTORS:

Waste water treatment...

ion exchange, cesium-137 strontium-90 removal by, of storage basin water for cooling and shielding of spent nuclear reactor fuel

CAS REGISTRY NUMBERS:

10045-97-3 10098-97-2 uses and miscellaneous, removal of, from storage basin water for cooling and shielding of spent nuclear reactor fuel, ion exchange in

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Record - 409

<DIALOG File 399: (c) 1994 American Chemical Society>

81158390 CA: 81(24)158390j JOURNAL

Preconcentration of manganese, cobalt, yttrium, zirconium, niobium, ruthenium, europium, and protactinium by various hydroxides

AUTHOR(S): Strohal, P.; Noethig-Hus, D.

LOCATION: Rudjer Boskovic Inst., Zagreb, Yugoslavia

JOURNAL: Mikrochim. Acta DATE: 1974 NUMBER: 5 PAGES: 899-907 CODEN: MIACAQ LANGUAGE: English

SECTION:

CA960002 Sewage and Wastes

CA976XXX Nuclear Technology

IDENTIFIERS: radionuclide pptn hydroxide, wastewater treatment metal removal, manganese pptn hydroxide, cobalt pptn hydroxide, yttrium pptn hydroxide, zirconium pptn hydroxide, niobium pptn hydroxide, ruthenium pptn hydroxide, europium pptn hydroxide, protactinium pptn hydroxide

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DESCRIPTORS:

Radioelements, properties...

 coptn. of, by hydroxides

CAS REGISTRY NUMBERS:

1309-33-7 13327-32-7 14507-19-8 20338-08-3 20427-58-1 pptn. by, of
 radio elements

13966-31-9 13967-48-1 13967-71-0 13967-76-5 13981-14-1 13981-50-5
 14683-23-9 properties, coptn. of, by hydroxides

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Record - 410

<DIALOG File 399: (c) 1994 American Chemical Society>

81032275 CA: 81(6)32275g JOURNAL

Separation of radionuclides in colloidal form from aqueous solutions

AUTHOR(S): Kepak, F.

LOCATION: Inst. Nucl. Res., Rez/Prague, Czech.

JOURNAL: J. Radioanal. Chem. DATE: 1974 VOLUME: 20 NUMBER: 1 PAGES:
159-66 CODEN: JRACBN LANGUAGE: English

SECTION:

CA976000 Nuclear Technology

CA979XXX Inorganic Analytical Chemistry

IDENTIFIERS: review colloidal radioelement sepn, colloidal radioelement
sepn reprocessing, fuel reprocessing colloidal radioelement sepn, waste
treatment colloidal radioelement sepn

DESCRIPTORS:

Nuclear reactor fuel reprocessing...

 prep. of colloidal radioelements in

Radioelements, preparation...

 sepn. of colloidal

Radioactive wastes...

 treatment of, sepn. of colloidal radioelements in

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<DIALOG File 399: (c) 1994 American Chemical Society>

74130154 CA: 74(24)130154s TECHNICAL REPORT

Low-level radioactive waste treatment: water recycle process

AUTHOR(S): Yee, William C.; DeLora Soria, Federico; Shockley, W. E.

LOCATION: Oak Ridge Natl. Lab., Oak Ridge, Tenn.

JOURNAL: U. S. At. Energy Comm. DATE: 1970 NUMBER: ORNL-4472 PAGES: 30
pp. CODEN: XAERAK LANGUAGE: English CITATION: Nucl. Sci. Abstr. 1970,
24(18), 36354 AVAIL: Dep. CFSTI

SECTION:

CA860000 Sewage and Wastes

IDENTIFIERS: radioactive waste treatment, radionuclide waste treatment,
clarification radioactive waste, demineralization radioactive waste,
activated carbon radioactive waste

DESCRIPTORS:

Radioactive wastes...

 treatment of, three-stage system for

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<DIALOG File 399: (c) 1994 American Chemical Society>

66079386 CA: 66(18)79386z JOURNAL

Decontamination property of a coal humic acid column

AUTHOR(S): Matsumura, Takashi; Ishiyama, Toshio

JOURNAL: Annu. Rep. Radiat. Cent. Osaka Prefect. DATE: 1965 VOLUME: 6,

PAGES: 37-41 CODEN: ARROAA LANGUAGE: English

SECTION:

CA860000 Sewage and Wastes

IDENTIFIERS: COAL HUMIC ACID, RADIONUCLIDES REMOVAL WASTE WATERS, CESIUM 137 REMOVAL WASTE WATERS, BARIUM 137 REMOVAL WASTE WATERS, STRONTIUM 89 REMOVAL WASTE WATERS, COBALT 60 REMOVAL WASTE WATERS, HUMIC ACIDS WASTE WATERS

DESCRIPTORS:

Radioactive wastes...

 treatment of, by humic acid

Humic acids...

 waste water (radioactive) treatment by

CAS REGISTRY NUMBERS:

7440-23-5 7440-70-2 uses and miscellaneous, radioisotope sepn. from waste water by humic acid in relation to content of

7440-24-6 7440-46-2 7440-48-4 10045-97-3 10198-40-0 13981-97-0
14158-27-1 uses and miscellaneous, sepn. from radioactive waste water by humic acid

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Dialmail defaults: Inbox 1

Scan to list messages, folders ...

Read to read messages

Create to create a new message, folder ...

Answer to answer a message

Delete to erase a message, folder ...

Help for more information on any command

Clear to clear defaults & return to main menu

Exit to leave DIALMAIL

** For more commands, enter Page **

? read 2

Read Inbox

*** Item 2 ***

From: OS 5 File(s) 6,8,41,... Msg type: print

Date: 08apr94 00:24:45 Msg id: 3788297

P031: PR S3/7/ALL VIA DIALMAIL (items 1 Msg lines: 6524
-189) Records: 189

File(s) searched:

384

File 6:NTIS_1964-1994/May B1 1994 NTIS, U.S. Govt. All rts. reserv.

File 8:Ei Compendex*Plus(TM)_1970-1994/May W2

(c) 1994 Engineering Info. Inc.

File 41:Pollution Abs_1970-1994/Jan

(c) 1993 Cambridge Scientific Abstracts

File 103:Energy SciTec_1974-1994/Mar B2

(c) format only 1994 Dialog Info.Svcs.

File 241:Elec. Power DB_1972-1994/Feb

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Sets selected:

Set	Items	Description
1	65416	SITE/TI,DE, ID,ENG
2	1922	REMEDIATION?/TI,DE, ID,ENG
3	189	(SITE()REMEDIATION?)/TI,DE, ID,ENG

Prints requested : (*' indicates user print cancellation)

Date Time Description

07apr 14:10EST P031: PR S3/7/ALL VIA DIALMAIL (items 1-189)

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U.S. DEPARTMENT OF ENERGY
FEDERAL ASSISTANCE MANAGEMENT SUMMARY REPORT

1. Program/Project Identification No. DE-FC21-93MC30097	2. Program/Project Title 1.0 Waste Management	3. Reporting Period 10/1/95 through 12/31/95
4. Name and Address Energy & Environmental Research Center University of North Dakota PO Box 9018 Grand Forks, ND 58202-9018 (701) 777-5000		5. Program/Project Start Date 1/12/93
		6. Completion Date 12/31/97

7. FY 94/95	8. Months or Quarters Quarters				1st JAN	2nd FEB	3rd MAR	4th APR	5th MAY	6th JUN	7th JUL	8th AUG	9th SEP	10th OCT	11th NOV	12th DEC			
9. Cost Status		a. Dollars Expressed In Thousands				b. Dollar Scale													
10. Cost Chart																			
Fund Source		Quarter				Cum. to Date	Tot. Plan												
		1st	2nd	3rd	4th														
DOE	P	41	91	91	92	315	315												
	A	4	56	22	33	115													
	P																		
	A																		
	P																		
	A																		
Total P		41	91	91	92	315	315												
Total A		4	56	22	33	115													
Variance		37	35	69	59	200													
P = Planned A = Actual																			
c. Cumulative Accrued Costs																			
Total Planned Costs for Program/Project		Planned				41				132				223			315		
\$ 315		Actual				4				60				82			115		
		Variance				37				72				141			200		

11. Major Milestone Status		Units Planned													
		Units Complete													
		P													
		C													
1.6 Treatment of Mixed Wastes		P	▼ 1,2 △ 3												
		C													
		P													
		C													
1.7 Hot-Water Extraction of Nonpolar Organic Pollutants from Soils		P	▼ 1 △ 2												
		C													
		P													
		C													
1.8 Aqueous-Phase Thermal Oxidation Wastewater Treatment		P	▼ 1 △ 2 ▽ 3 △ 4												
		C													
		P													
		C													
1.9 Use of Coal By-Products for Removal and Solidification of Hazardous Wastes		P													
		C													

12. Remarks

13. Signature of Recipient and Date

EJ Stark

1-26-96

14. Signature of DOE Reviewing Representative and Date

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U.S. DEPARTMENT OF ENERGY
FEDERAL ASSISTANCE MANAGEMENT SUMMARY REPORT

1. Program/Project Identification No. DE-FC21-93MC30097	2. Program/Project Title 1.0 Waste Management	3. Reporting Period 10-1-95 through 12-31-95
4. Name and Address Energy & Environmental Research Center University of North Dakota PO Box 9018, Grand Forks, ND 58202-9018		5. Program/Project Start Date 1-12-93
		6. Completion Date 12-31-97

7. FY 95	8. Months or Quarters Quarters				1995												
					JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
9. Cost Status	a. Dollars Expressed In Thousands				b. Dollar Scale												
10. Cost Chart																	
Fund Source		Quarter				Cum. to Date	Tot. Plan										
		1st	2nd	3rd	4th			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
DOE		P	0	0	0	0	315	315									
		A	63	57	36	4	275										
		P															
		A															
		P															
		A															
Total P		0	0	0	0	315	315										
Total A		63	57	36	4	275											
Variance		(63)	(57)	(36)	(4)	40											
P = Planned A = Actual																	
Total Planned Costs for Program/Project \$315																	
c. Cumulative Accrued Costs																	
Planned 315 315 315 315																	
Actual 178 235 271 275																	
Variance 137 80 44 40																	

11. Major Milestone Status		Units Planned														
		Units Complete														
		P														
		C														
		P														
		C														
		P														
		C														
		P														
		C														
		P														
		C														
1.9 Use of Coal By-Products for Removal and Solidification of Hazardous Wastes		P	△ 1,2													
		C														

12. Remarks

13. Signature of Recipient and Date <i>John Stach</i>	14. Signature of DOE Reviewing Representative and Date <i>✓</i>
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U.S. DEPARTMENT OF ENERGY
FEDERAL ASSISTANCE MANAGEMENT SUMMARY REPORT

1. Program/Project Identification No. DE-FC21-93MC30097	2. Program/Project Title 1.0 Waste Management	3. Reporting Period 10-1-95 through 12-31-95		
4. Name and Address Energy & Environmental Research Center University of North Dakota PO Box 9018 Grand Forks, ND 58202-9018 (701) 777-5000		5. Program/Project Start Date 1-12-93		
		6. Completion Date 12-31-97		
Milestone ID. No.	Description	Planned Completion Date	Actual Completion Date	Comments
Subtask 1.6	Treatment of Mixed Wastes	6/94		
1.6.1	Investigate mixed-waste sites	4/94	9/94	
1.6.2	Perform detailed literature search	4/94	5/94	
1.6.3	Provide assessment of technologies	6/94	10/95	
Subtask 1.7	Hot-Water Extraction of Nonpolar Organic Pollutants from Soils	12/94		
1.7.1	Determine extraction efficiency of PAHs	6/94	6/94	
1.7.2	Determine optimized "mild" condition for obtaining high extraction efficiencies	9/94	9/94	
1.7.3	Determine the ability of the optimized conditions for PAHs to remove PCBs from a contaminated soil	12/94	12/94	
1.7.4	Estimate the increase in solubility of PAHs in water at the optimal extraction condition vs. the solubility of the PAHs in water at room temperature and pressure	12/94	12/94	
Subtask 1.8	Aqueous-Phase Thermal Oxidation Wastewater Treatment	12/94		
1.8.1	Select an appropriate waste stream	1/94	10/94	
1.8.2	Operate integrated system	4/15/95		
1.8.3	Analyze feeds and products	5/15/95		
1.8.4	Calculate mass and material balances	6/15/95		
Subtask 1.9	Use of Coal By-Products for Removal and Solidification/Stabilization of Hazardous Wastes	12/95		
1.9.1	Activated char screening tests	6/96		
1.9.2	Solidification/stabilization	6/96		
	– Evaluate mobility of trace constituents ash used for treatment of synthetic waste water	6/96		

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