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References

Aerial Photograph of Mary Kathleen. Details: Run 7, 198-228, 6856, photograph taken 1983. Department of Natural Resources.

Al T.A., Blowes D.W. & Jambor J.L., 1994. A geochemical study of the main tailings impoundments at the Falconbridge Limited, Kidd Creek Division Metallurgical Site, Timms, Ontario. In: Jambor, J.L. & Blowes, D.W. (eds.): Short Course Handbook on Environmental Geochemistry of Sulfide Mine Waste. Mineralogical Association of Canada, Nepean, **22**, 333-364.

Allaby A. & Allaby M.(eds.), (1999). A Dictionary of Earth Sciences, Oxford University Press, Market House Books Ltd.

Allcott G.H. & Lakin H.W., 1975. The homogeneity of six geochemical exploration reference samples, *Geochemical Exploration 1974*, Elsevier, 659-681.

Alloway B.J. & Ayres D.C., 1997. *Chemical Principles of Environmental Pollution*. Blackie Academic and Professional, 5-6.

Alpers C.N. & Blowes D.W. (eds.), 1994. *Environmental Geochemistry of Sulfide Oxidation*. ACS Symposium Series, Washington, DC, **550**, 661.

Alpers C.N., Blowes D.W., Nordstrom D.K., & Jambor J.L., (1994): Secondary minerals and acid mine-water chemistry. In: Jambor J.L. & Blowes D.W. (eds.). *Short Course Handbook on Environmental Geochemistry of Sulfide Mine Waste*. Mineralogical Association of Canada, Nepean, **22**, 247-270.

Alpers C.N. & Nordstrom D.K., 2000. Estimation of pre-mining conditions for trace metal mobility in mineralized areas: an Overview, in *Proceedings 5th International Conference Acid Rock Drainage*, 463-472.

ANZECC, 1992. Australian Water Quality Guidelines for Fresh and Marine Waters. National Water Quality Management Strategy Paper No 4, Australian and New Zealand Environment and Conservation Council, Canberra.

ANZECC, 1992. Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand.

ANZECC, 2000. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand.

Australian Bureau of Meteorology, 2002. Cloncurry average annual Rainfall (mm) 1950-2000. Unpub.

Bathey G.C., Miezitis Y. & McKay A.D., 1987. Australian uranium resources. Department of Resources and Energy Report 1. Bureau of Mineral Resources, Geology and Geophysics.

Brown P.L., Guerin M., Hankin S. I. & Lawson R.T., 1998. Uranium and other contaminant migration in groundwater at a tropical Australian uranium mine. *Journal of Contaminant Hydrology* **35**, 295-303.

Bruynesteyn A. and Hackl R.P., 1990. Mineral biotechnology: Present and future applications. In Karavaiko G.I., Rossi G. and Avakyan Z.A. (Eds.) *Biohydrology. International Seminar on Dump and Underground Bacterial leaching metals from ores*. Centr for international projects, USSR State Committee for Environment Protection. Moscow, 10-20.

Burns P.C. & Finch R., 1999. Uranium: Mineralogy, Geochemistry and the Environment. *Reviews in Mineralogy*. Vol 38. Mineralogical Society of America, Washington, DC.

Cato, L., 1995. The integration of environmental research and technology in the mining industry – Case histories from CRA. In: Cato, L. (Ed.), *The Business of Ecology: Australian Organisations Tackling Environmental Issues*. Allen & Unwin, Sydney, 62-67.

Connors K.A. & Page R.W., 1995. Relationships between magmatism, metamorphism and deformation in the western Mount Isa Inlier, Australia. *Precambrian Research* **71**, 131-153.

Cruikshank B.I., Ferguson J. & Derrick G.M., 1980. The origin of uranium and skarn development in the Mary Kathleen area, Queensland. In: Ferguson J. and Goleby A. (eds) *Uranium in the Pine Creek Geosyncline*. Proceedings Series: International Atomic Agency, Vienna, 693-706.

Dahlkamp F.J., 1993. *Uranium Ore Deposits*. Springer-Verlag. Berlin Heidelberg.

Dave N.K., Lim T.P. & Clantier N.R., 1985. Migration of metals and trace radionuclides from mine tailings to the environment. International conference of heavy metals in the environment. CEP Consultants, Edinburgh, **2**, 24-26.

Derrick G.M., 1977. Metasomatic history and origin of uranium mineralization at Mary Kathleen, northwest Queensland. *BMR Journal of Australian Geology and Geophysics* **2**, 123-130.

Derrick G.M., 1980. Marraba, Queensland. 1:100 000 scale Geologic Series, Sheet 6956 explanatory notes. BMR Geology and Geophysics. Australian Government Publishing Service, Canberra.

D.I.S.R. (Department Industry Science Resources), 1999. A radioactive waste repository for Australia: Phase 2 site selection study. A discussion paper. Australian Government Publishing Service, Canberra, 1-25.

Dold B., Fontboté L. & Wildi W., 1999b. Detection and distribution of ferric oxyhydroxides and oxyhydroxide sulfates in sulfide mine tailings; their importance to selective metal retention and acid production. Mine, Water and Environment, 1999 IMWA Congress, Sevilla, Spain, **2**, 525-526.

Dubrovsky N.M., Cherry J.A. & Reardon E.J., 1984. Geotechnical evolution of inactive tailings in the Elliot Lake uranium district. Canadian Geotechnical Journal **22**, 110-128.

Duerden P., 1991. Alligator Rivers Analogue Project. 2nd Annual Report. ANSTO. Lucas Heights Australia. Unpub.

East T.J., Uren C.J., Noller B.N., Cull R.F., Curley P.M. & Unger C.J., 1994. Erosional stability of rehabilitated uranium mine structures incorporating natural landform characteristics, northern tropical Australia. Z. Geomorphologie **38**, 282-298.

Ernst W.H.O., 1983. Response of plants and vegetation to mine tailings and dredged materials. In Salomons W. & Forstner U. (eds.) Chemistry and Biology of Solid Waste Dredged Material and Mine Tailings, 54-69. Springer-Verlag. Berlin Heidelberg.

Fernandes H.M., Veiga L.H.S., Franklin M.R., Prado V.C.S. & Taddei J. F., 1995. Environmental impact assessment of uranium mining and milling facilities: A case study at the Pocos de Caldas uranium mining and milling site, Brazil. Journal of Geochemical Exploration **52**, 161-173.

Fernandes H. M., Franklin M.R. & Veiga L.H., 1998. Acid rock drainage and radiological environmental impacts. A study case of the uranium mining and milling facilities at Pocos de Caldas. Waste Management, **18**, 169-181.

Flanagan J.C., Morton W.H. & Ward T.A., 1983. Groundwater management around uranium mine waste areas, Mary Kathleen, Australia. In: International Conference on Groundwater and Man, Australian Water Resources Council Conference Series no 8. Australian Water Resources Council, 81-88.

Gladney E.S. & Roelandts I., 1990. 1988 Compilation of Elemental Concentration Data for USGS Geochemical Exploration Reference Materials GXR-1 to GXR-6, *Geostandards Newsletter*, **14**, 21-118.

Govett G.J.S., 1983. Abundance of elements in common rock types, Appendix 2. In: Butt C.R.M. & Zeegers H. (eds.). *Handbook of Exploration Geochemistry*. Volume 3. Elsevier, New York.

Grasty R.L. & Darnley A.G., 1971. Calibration of gamma-ray spectrometers for ground and airborne use. *Geological Survey Canada Paper* **71-17**, 1-27.

Grenthe I., Sandino M.C.A., Puigdomenech I., & Rand M.H., 1995. Corrections to the Uranium NEA-TDB review. Appendix D in Vol. 2 *Chemical Thermodynamics of Americium*, by R.J. Silva et al. Nuclear Energy Agency OECO, 347-374. Elsevier, Amsterdam.

Harries J., 1996. National assessment of acid drainage from mine-sites in Australia. 2nd National Conference on Acid sulfate soils, Coffs Harbour 5–6 September 1996, 130–131.

Hawkins B.W., 1975. Mary Kathleen Uranium deposit. In: Knight C.L. (ed.) *Economic Geology of Australia and Papua New Guinea*, 1. Metals. Australasian Institute of Mining and Metallurgy (AUSIMM), Melbourne, 398-406.

Holcombe R.J., Pearson P.J. & Oliver N.H.S., 1992. Structure of the Mary Kathleen Fold Belt. In: Stewart A.J. and Blake D.H. (eds.) Detailed Studies of the Mount Isa Inlier. Australian Geological Survey Organisation Bulletin **243**, 257-287.

Hughes F.E. & Munro D.L., 1965. Uranium ore deposit at Mary Kathleen. In: McAndrew J. (ed.) Geology of Australian Ore Deposits. 8th Commonwealth Mining and Metallurgical Congress, Australia and New Zealand, 1965. Australasian Institute of Mining and Metallurgy, 256-263.

Ildefonse P., Muller J.P., Clozel B. & Calas G., 1990. Study of two alteration systems as natural analogues for radionuclide release and migration. Quarterly Journal of Engineering Geology, **29**, 413-439.

Isaacs A., Daintith J. & Martin E. (eds), 1999. A Dictionary of Science, Oxford University Press, Market House Books Ltd.

Jambor J.L. & Blowes D.W., 1998. Theory and applications of mineralogy in environmental studies of sulfide-bearing mine waste. In: Cabri L. J. and Vaughan D.J. (eds.). Short Course Handbook on Ore and Environmental Mineralogy. Mineralogical Association of Canada, Nepean, **27**, 367-401.

Kirton M. & Lyus D., 1976. Calibration of an airborne gamma ray spectrometer over Mary Kathleen Uranium Mine. Australian Society of Exploration Geophysicists **7**, 2, 69-74.

Landa E.R., 1999. Geochemical and biogeochemical controls on element mobility in and around uranium mill tailings. In: Filipek L.H. & Plumlee G.S. (eds.), Environmental Geochemistry of Mineral Deposits. Part B: Case Studies and Research Topics, Reviews in Economic Geology Vol. 6B. Society of Economic Geologists, Littleton, 527-538.

Landa E.R. & Gray J.R., 1995. US Geological Survey research on the environmental fate of uranium mining and milling wastes. *Environmental Geology* **26**, 19-31.

Langmuir D. 1997. *Aqueous Environmental Geochemistry*. Prentice-Hall, Englewood Cliffs, N.J.

Martin P. & Akber R.A., 1996. Groundwater seepage from the Ranger uranium mine tailings dam: Radioisotopes of radium, thorium and actinium. Supervising Scientist Report 106, Supervising Scientist, Canberra. 1-70.

Martin E & Hine R.S. (eds), 2000. *A Dictionary of Biology*. Oxford University Press, Market House Books Ltd.

McKay D., Miezeitis Y., 2001. Australia's Uranium Resources, Geology and Development of Deposits. Mineral Resource Report 1, AGSO Geoscience Australia, Canberra.

Minenco Pty. Ltd., 1985. Job Number 1166/4 for Mary Kathleen Uranium Ltd. Unpub.

Minenco Pty. Ltd., 1986. Mary Kathleen Uranium Mine Rehabilitation Water Quality Prediction Studies. Final Report Australian Groundwater Consultants PTY Limited. Unpub.

MKU (Mary Kathleen Uranium Ltd), 1982. Descriptions of Operations. Unpublished report, Mary Kathleen Uranium Ltd.

MKU (Mary Kathleen Uranium Ltd), 1986. Rehabilitation of the Mary Kathleen Mine. Unpublished report, Mary Kathleen Uranium Ltd.

Morin K.A., Cherry J.A., Dave N.K., Lim T.P. & Vivyurka A.J., 1988. Migration of acidic groundwater seepage from uranium tailings impoundments, 2. Geochemical behaviour of radionuclides in groundwater. *Journal of Contaminant Hydrology*, **2**, 305-322.

Morin K.A. & Hutt N.M., 1997. Environmental geochemistry of minesite drainage. Practical theory and case studies. MDAG Publishing, Vancouver, 333.

NH&MRC (National Health and Medical Research Council), 1995. Recommendations for Limiting Exposure to Ionizing Radiation and National Standard for Limiting Occupational Exposure to Ionizing Radiation. Australian and New Zealand Environmental and Conservation Council and National Health and Medical Research Council.

NHMRC & ARMCANZ, 1996. Australian Drinking Water Guidelines. National Water Quality Management Strategy Paper No 6, National Health and Medical Research Council & Agricultural and Resource Management Council of Australia and New Zealand. Australian Government Publishing Service, Canberra.

NH&MRC (National Health and Medical Research Council), 1996. Drinking Water Guidelines. Agriculture and Resource Management and Council of Australia and New Zealand. Australian Government Publishing Service, Canberra.

Nicholson R.V. & Scharer J.M., 1994. Laboratory studies of pyrrhotite oxidation kinetics. In Alpers C.N. & Blowes D.W. (eds.). *Environmental Geochemistry of Sulfide Oxidation*. ACS Symposium Series, Washington, DC, **550**, 14-30.

Noller B.N., Watters R.A. & Woods P.H., 1997. The role of biogeochemical processes in minimising uranium dispersion from a mine site. *Journal of Geochemical Exploration* **58**, 37-50.

Nordstrom D. K., 1977. Hydrogeochemical and microbiological factors affecting the heavy metal chemistry of an acid mine drainage system. Diss. Stanford University, Stanford, Calif., 190.

Nordstrom D.K. & Alpers C.N., 1999. Geochemistry of acid mine waste. In: Plumlee G. S. & Logsdon M.J. (eds.). The Environmental Geochemistry of Ore Deposits. Part A: Processes, Techniques, and Health Issues. Reviews in Economic Geology, **6A**, 133-160.

Nordstrom D.K. & Munoz J.L., 1986. Geochemical Thermodynamics. Blackwell Scientific Publications. Palo Alto, California.

Oliver N.H.S., 1995. Hydrothermal history of the Mary Kathleen Fold Belt, Mt Isa Block, Queensland. Australian Journal of Earth Sciences **42**, 267-279.

Oliver N.H.S. & Wall V.J., 1987. Metamorphic plumbing system in Proterozoic calc-silicates, Queensland, Australia. Geology **15**, 793-796.

Oliver N.H.S., Pearson P.J., Holcombe R.J. & Ord A., 1999. Mary Kathleen metamorphic-hydrothermal uranium-rare-earth element deposit: ore genesis and numerical model of coupled deformation and fluid flow. Australian Journal of Earth Sciences **46**, 467-484.

Osmond J.K., Rydell H.S. & Kaufman M.I., 1968. Uranium disequilibrium in groundwater: An isotope dilution approach in hydrologic investigations. Science **162**, 997-999.

Page R.W & Bell T.H., 1986. Isotopic and structural response of granite to successive deformation and metamorphism. Journal of Geology **94**, 365-379.

Plant J.A., Simpson P.R., Smith B. & Windley B.F., 1999. Uranium ore deposits – Products of the radioactive earth. *Reviews in Mineralogy* **38**, 255-319.

Plumlee G.S., 1999. The environmental geology of mineral deposits. In Plumlee G.S., & Logsdon M.J. (eds.). *The Environmental Geochemistry of Mineral Deposits. Part A: Processes, methods, and health issues. Reviews in Economic Geology*, **6A**, 71-116.

Plumlee G., Smith K., Montour M., Ficklin W. & Mosier E., 1999. Geological controls on the composition of natural waters and mine waters draining diverse mineral-deposit types. In: Filipek L.H. & Plumlee G.S.(eds) *The Environmental Geochemistry of Mineral Deposits. Part B: Case Studies and Research Topics. Vol. 6B, Chapter 19. Reviews in Economic Geology. Society of Economic Geologists, Inc., Chelsea, MI. 373-432.*

Pulford J.D., Kimber A.J. & Duncan H.J., 1983. Leaching of metals from acidic colliery spoil. *International conference of heavy metals in the environment. CEP Consultants, Edinburgh*, **2**, 1001-1004.

Ragnarsdottir K.V. & Charlet L., 2000. Uranium behaviour in natural environments. In: Cotter-Howell J.D., Campbell L.S., Valsami-Jones E. & Batchelder M. (eds.) *Environmental Mineralogy: Microbial interactions, anthropogenic influences, contaminated land and waste management. Mineralogical Society Series* **9**, 245-289.

Rosler H.J. & Lange H., 1972. *Geochemical Tables. Elsevier Scientific Publishing Company.*

Scott A. K. & Scott G.A., 1985. Geology and genesis of uranium-rare earth deposits at Mary Kathleen, Northwest Queensland. *Bulletin and Proceedings of the Australasian Institute of Mining and Metallurgy*, **290**, No1, 79-89.

Sheppard S.C. & Evenden W.G., 1992. Bioavailability Indices for Uranium: Effect of Concentration in Eleven soils. *Archives of Environmental Contamination and Toxicology*, **23**,117-124.

Smith K.S. & Huyck H.L.O., 1999. An overview of the abundance, relative mobility, bioavailability, and human toxicity of metals. In: Plumlee G.S., & Logsdon, M.J. (eds.). *The Environmental Geochemistry of Mineral Deposits. Part A; Processes, methods, and health issues. Reviews in Economic Geology*, **6A**, 71-116.

Smith K.S., Ramsey C.A. & Hageman P.L., 2000. Sampling strategy for the rapid screening of mine-waste dumps on abandoned mine lands. In: *Proceedings from the Fifth International Conference on Acid Rock Drainage*. SME, Littleton, CO. 1453-1461.

UIC (Uranium Information Centre), 1996. Environmental management and rehabilitation of the Nabarlek Uranium mine. Minerals Council of Australia. Mines paper #5 1996 Uranium Information Centre Ltd Mine Rehabilitation Handbook. (see www.uic.com.au)

UIC (Uranium Information Centre), 1998. Environmental rehabilitation of the Mary Kathleen Uranium mine. Minerals Council of Australia. Mines paper #6. Uranium Information Centre Ltd Mine Rehabilitation Handbook. (see www.uic.com.au)

UIC (Uranium Information Centre), 2000. Nuclear Electricity. Uranium Information Centre Ltd. (see www.uic.com.au)

UNSCEAR (United Nations Scientific Committee on the Effects of Atomic Radiation). 2000. Sources, effects and risks of ionising radiation. Report to the General Assembly, New York.

Ward T.A. & Cox B.J., 1985. Rehabilitation of the Mary Kathleen uranium mining and processing site. In: *Proceedings of the 9th International Symposium Uranium and Nuclear Energy*. Uranium Institute, London, 222-236.

Ward T.A., Flanagan J.C. & Hubery, R.W., 1983. Rehabilitation of the Mary Kathleen uranium mine site after closure. In: Proceedings of the International Specialist Conference on Water Regime in Relation to Milling, Mining and Waste Treatment including Rehabilitation. Australian Water and Wastewater Association, Canberra, 32.1-32.9.

Ward T.A., Hart K.P., Morton W.H. & Levins, D.M., 1984. Factors affecting groundwater quality at the rehabilitated Mary Kathleen tailings dam, Australia. In: 6th Symposium on Uranium Mill Tailings Management. Colorado State University, Denver, 319-328.

Webb D.V., Solomon S.B., & Thompson J.E.M., 1999. Background radiation levels and medical exposure levels in Australia Radiation Protection in Australia, 16, No.2, 25- 32.

White R.E., 1997. Principles and Practices of Soil Science. The soil as a natural resource. Blackwell Science, Victoria, Australia.

Willett I. R. & Bond W. J., 1995. Sorption of manganese, uranium, and radium by highly weathered soils. *Journal of Environmental Quality* 24, 834-845.

Woods P.H., 1994. Likely recharge to permanent groundwater beneath future rehabilitated landforms at Ranger uranium mine, Northern Australia. *Australian Journal of Earth Sciences* 41, 505-508.

Zielinski R.A., Chafin D.T., Banta E.R. & Szabo B.J., 1997. Use of ²³⁴U and ²³⁸U isotopes to evaluate contamination of near-surface groundwater with uranium-mill effluent: a case study in south-central Colorado, U.S.A. *Environmental Geology* 32, 124-136.