Appendix 8

Glossary of Terms

Aquifer	Permeable rock formation capable of storing and permitting the transmission of water
Complexing	The process of converting insoluble minerals to a form which can be transported in effect as a solution. *Complexing agents* are the specific chemicals used.
Excursion	The migration of leach solution from the mining zone in the wellfield either horizontally or vertically
Extraction well	A screened water bore capable of removing fluids from an aquifer. Also known as a 'production well'.
Fault	A fracture in rocks along which some displacement (the throw of the fault) has taken place. The displacement may vary from a few millimetres to thousands of metres.
Gamma radiation	Form of electromagnetic radiation similar to light or X-rays, characterised by high energy and strong penetration of matter. Emitted from a nucleus left in an excited state after emission of alpha or beta particle.
Geosyncline	A major elongated downwarp of the Earth's crust, usually hundreds of kilometres long and filled with sediments and lavas many kilometres in thickness.
Injection well	Screened water bore capable of injecting fluid into an aquifer
In situ leach (ISL)	Chemical leaching of ore conducted by introducing lixiviant to sub surface geological strata
Ion exchange (IX)	The transfer of uranium from pregnant lixiviant to resin beds in an ion exchange column. The process is very similar to that applied in domestic water softeners.
Macroinvertebrate	Animals that have no backbone and are visible without magnification.
Mineral	A naturally occurring substance of more or less definite chemical composition and physical properties.

Mineralisation	Term used almost exclusively for the introduction of ore minerals and gangue (valueless) minerals into pre-existing rocks, whether by veins, replacement or in a dissemination fashion
Natural Attenuation	The dilution, dispersion, (bio)degradation, irreversible sorption, and/or radioactive decay of contaminants in soils and groundwater. It causes a net reduction of contaminant toxicity and human and ecological risk.
Ore	Term applied to any metalliferous mineral from which the metal may be profitably extracted.
Ore Reserves	Ore whose grade and tonnage has been established by drilling etc. with reasonable assurance
Overburden	Useless material which overlies a bed of useful material
oxidant	An oxidising agent – a substance that brings about oxidation by being reduced and gaining electrons.
Palaeochannel	Ancient river or stream channels that have been preserved in the sedimentary record.
Permeability	The capacity of a porous rock for transmitting a fluid
pH	A measure of hydrogen ions in solution; it indicates acidity (pH 1 to 7) or alkalinity (pH 8 to 14) of an aqueous solution
Precipitation	The process of producing a separable solid phase within a liquid medium by chemical reaction
Pregnant Solution	Mining solution/lixiviant containing mineral components leached from the ore body
Radiation dose	A measure of the amount of radiation absorbed by the body and the damage this radiation causes the person. This is determined by the type and energy of the radiation (alpha, beta, gamma), and the exposure scenario. Units of dose are Sieverts (Sv).
Radionuclide (radioisotope)	Isotope which is unstable and undergoes natural radioactive decay.
Radon	A radioactive element (Rn)
Radon daughters/Radon	Series of radionuclide resulting from the radioactive

progeny`	decay of radon.
Solution (Lixiviant/leachate)	Water, usually groundwater from the ore zone aquifer, to which chemicals including complexing agents and oxidants have been added to leach minerals from ore.
Solvent Exchange (SX)	A separation process in which two water-based and organic-based solvents are brought into contact for the transfer or recovery of a component, in the present case uranium. It so known as liquid exchange.
Tailings	The waste material remaining after the processing of finely ground ore.
Tailings dam	Facility where tailings / mill residues are stored after treatment.
Tertiary period	First period of the Cenozoic covering an approximate time span from 65-2 million years ago
Three Mine Policy	
Totally Dissolved solids (TDS)	Measurement of all mineral elements found in water
Uraninite	Uranium oxide, UO_2. Known as *pitchblende* when massive and apparently amorphous.
Well casing	In unconsolidated sands wells must be cased using black steel pipes, for structural purposes to ensure that the hole does not cave. It also prevents exchange of liquor from the inside to the outside.
Yellowcake	A name originally given to the bright yellow substance ammonium diuranate (ADU), now applied to a mixture of uranium oxides, principally U_3O_8, which may be yellow or dark green in colour.

Acronyms

AAEC	Australian Atomic Energy Commission
ACF	Australian Conservation Foundation

AGSO	Australian Geological Survey Organisation, now known as Geoscience Australia
ARR	Alligator Rivers Region
ANSTO	Australia Nuclear Science and Technology Organisation
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Asutralia and New Zealand
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
ARRTC	Alligator Rivers Region Technical Committee
ARRAC	Alligator Rivers Region Consultative Committee
ASNO	Australian Safeguards and Non-Proliferation
ATLA	Adnyamathanha Traditional Lands Association
BECC	Beverley Environmental Consultative Committee
CCSA	Conservation Council of South Australia
CFMEU	Construction, Forestry, Mining and Energy Union
CIM	Chief Inspector of Mines
DAIS	Department of Administration and Information Services (SA)
DBIRD	Department of Business, Industry and Resource Development, Northern Territory
DEF	Declaration of Environmental Factors
DITR	Department of Industry, Tourism and Resources, (Cth)
EA	Environment Australia
EIS	Environmental Impact Assessment
EMMP	Environmental Mine Management Plan
EMP	Environmental management Plan
EPA	Environmental Protection Authority
EPBC	*Environment Protection and Biodiversity Conservation Act 1999*

EPIP	*Environment Protection (Impact of Proposals) Act 1974*
ERA	Energy Resources of Australia Pty Ltd
ERISS	Environmental Research Institute of the Supervising Scientist
ER's	Environmental Requirements
EWLS	Earth-Water-Life Sciences Pty Ltd
FLT	Field Leach Trial
FoE	Friends of the Earth
FRAHCC	Flinders Ranges Aboriginal Heritage Consultative Committee
GAB	Great Artesian Basin
GAC	Gundjehmi Aboriginal Corporation
HAZOP	Hazard and Operability Study
HECC	Honeymoon Environmental Consultative Committee
IAEA	International Atomic Energy Agency
ICSU	International Council of Science
ISO	International Standards Organisation
ISP	Independent Science Panel
IUCN	International Union for Conservation of Nature
IWMP	Interim Water Management Pond
JMA	Jabiluka Mill Alternative
JTC	Jabiru Town Council
KBM	Kakadu Board of Management
KRAC	Kakadu Research Advisory Committee
KRSIS	Kakadu Region Social Impact Study
LHMU	Liquor, Hospitality and Miscellaneous Workers Union
MARP	Mining and Rehabilitation Program
MOU	Memorandum of Understanding

MTC	Minesite Technical Committee
NLC	Northern Land Council
NCTWR	National Centre for Tropical Wetland Research
OSS	Office of the Supervising Scientist
PAEC	Potential Alpha Energy Concentrations
PAN	Parks Australia North
PER	Public Environment Report
PIRSA	Department of Primary Industries and Resources, South Australia
RMA	Ranger Mill Alternative
RMP	Radiation Management Program
RP1	Retention Pond 1
RRZ	Restricted Release Zone
RWMP	Radiation Waste Management Program
SACOME	South Australian Chamber of Mines and Energy
SSD	Supervising Scientist Division
SXR	Southern Cross Resources
TDS	Totally Dissolved Solids
TLD	Thermo-luminescent dosimeter
UMEC	Uranium Mining (Environmental Control) Act

Ma	million years
mSv	millisieverts
Sv	Sievert
µSv	micro Sieverts
ppm	parts per million
ppb	parts per billion

µg/L	micrograms per litre
U	Uranium