

URANIUM MINING (ENVIRONMENT CONTROL ACT) 1979 (NORTHERN TERRITORY)

SCHEDULE 2 SECTION 17(B)

ENVIRONMENTAL REQUIREMENTS FOR THE NABARLEK URANIUM PROJECT

Staffing and Environment

1. Queensland Mines Limited shall appoint:

(a) as Environment Protection Officer, a person having appropriate qualifications and experience who shall be responsible to the project management to ensure effective environmental control of the project, including the protection of:-

(i) biological resources, including rehabilitation aspects, and

(ii) objects of material culture of concern to Aboriginals,

(b) persons to support the Environment Protection Officer in such numbers as is deemed appropriate by the Supervising Authority,

(c) a person qualified in the principles and practices of radiation protection in the mining and milling of radioactive ores as Radiation Safety Officer, and

(d) a person qualified in the principles and practices of ventilation as they apply to the mining and milling of radioactive ores as Ventilation Officer provided that a person appointed as Radiation Safety Officer may also be appointed as Ventilation Officer.

2. Queensland Mines Limited shall instruct management and operating staff to the extent relevant and consistent with these environmental requirements in the need for environment protection, the monitoring programs and the role, responsibilities and powers of the relevant Supervising Authorities.

3. Queensland Mines Limited shall explain to the extent relevant the requirements of, or having effect under, a prescribed instrument as defined in the Environment Protection (Alligator Rivers Region) Act 1978 of the Commonwealth, in so far as these requirements relate to any matter affecting the environment in relation to the Nabarlek Project to all the officers, servants and employees of Queensland Mines Limited and of their contractors and sub-contractors, as soon as possible after their first arrival in the Nabarlek Project Area.

4. Queensland Mines Limited shall make available, for perusal by all officers, servants and employees of Queensland Mines Limited and of their contractors and sub-contractors involved in the Nabarlek Project Area, copies of all relevant Commonwealth and Territory legislation relating to the protection of the environment (including the legislation dealing with the preservation of Aboriginal sacred sites, relics and works of art).

5. (a) Queensland Mines Limited shall ensure that their officers, servants, employees, invitees, licensees and contractors observe the provisions of the Nabarlek Uranium Project

Final Environmental Impact Statement and the Environmental Requirements. If any infringement is discovered Queensland Mines Limited shall immediately commence such remedial action as is necessary.

(b) If an officer, servant or employee of Queensland Mines Limited or of their contractors or sub-contractors knowingly infringes the provisions of the Nabarlek Uranium Project Final Environmental Impact Statement or the Environmental Requirements, Queensland Mines Limited or their contractors or sub-contractors as the case may be, shall take such disciplinary action against that officer, servant or employee as may seem appropriate to Queensland Mines Limited in the circumstances and, in cases where dismissal is the appropriate remedy, shall dismiss that officer, servant or employee.

6. Queensland Mines Limited shall require that officers, servants and employees of Queensland Mines Limited and of their contractors and sub-contractors do not introduce or permit or suffer the introduction onto the Nabarlek Project Area of flora or fauna exotic to the Alligator Rivers Region save such flora or fauna as the Supervising Authority shall permit.

Control of Water

7. (a) A Restricted Release Zone is a zone which includes all material exposed, or about to be exposed, by excavation and which is defined on the ground by Queensland Mines Limited and approved by the Supervising Authority prior to commencement of excavation of the mine pit.

(b) A Restricted Release Zone may be redefined by Queensland Mines Limited from time to time subject to approval by the Supervising Authority.

(c) The plan of a Restricted Release Zone when defined and approved as aforesaid shall be provided by Queensland Mines Limited to the Supervising Authority who may make it available to members of the public whenever requested to do so.

(d) Material shall not be taken outside the limits of a Restricted Release Zone unless approved by the Supervising Authority.

(e) Material shall be excavated from outside a Restricted Release Zone only with the approval of the Supervising Authority.

(f) The water management system shall be established in a manner allowing no intentional releases to the environment of water from the Restricted Release Zone and Queensland Mines Limited shall not allow to flow from a Restricted Release Zone liquid water other than the natural sub-surface flow of groundwater, provided that this requirement shall not apply to seepage which cannot be prevented by the use of the best practicable technology. This system shall be maintained unless the Supervising Authority gives approval for the release of water from the zone in a manner approved by the Supervising Authority.

(g) In the event that water is released from the Restricted Release Zone it shall not be discharged generally but shall be piped directly to Coopers Creek and discharged during a period of high volume flow in a manner approved by the Supervising Authority.

(h) For the purposes of this clause, 'material' means material which contains more than 0.02% of uranium dry weight as measured on a truck or scraper load basis or by sampling of the relevant material in situ as appropriate, but does not include yellowcake or other mill products, in containers specified by the Supervising Authority, or specimens or samples of types approved by the Supervising Authority.

8. Erosion products resulting from the mining operations in the Nabarlek Project Area shall be prevented by Queensland Mines Limited from entering the Buffalo and Cooper Creek systems and the method of so doing shall be the subject of approval by the Supervising Authority.

9. The quality and quantity of runoff water entering Buffalo and Cooper Creeks from the Nabarlek Project Area is to be continually monitored by Queensland Mines Limited to the satisfaction of the Supervising Authority.

10. (a) The tailings retention system, water retention ponds and evaporation ponds shall be designed and constructed in accordance with good engineering practice.

(i) No construction of the water retention system shall commence until Queensland Mines Limited has submitted to the Supervising Authority a design study report and management plan containing detailed plans and specifications for the construction and use of water storages and the management of seepage from them and has received the Supervising Authority's written approval thereto.

(ii) No tailings shall be discharged from the mill until Queensland Mines Limited has submitted to the Supervising Authority a design study report and management plan containing detailed plans and specifications for the construction and use of the tailings retention system and the management of seepage from it and has received the Supervising Authority's written approval thereto.

(b) Seepage to groundwater from the tailings retention system and water impoundments shall be controlled by Queensland Mines Limited in accordance with the management plan approved by the Supervising Authority.

11. Queensland Mines Limited shall erect a fence around the tailings retention system to Specification A.S. 1725-1975 and shall take all necessary and practicable action to prevent animals from drinking water from the tailings retention system or sources of water within the Nabarlek Project Area that, as a result of mining and ore treatment operations in the Nabarlek Project Area, may cause them harm.

Atmospheric Pollution Control

12. (a) No emissions from the ore treatment operations at the Nabarlek site shall be released to the atmosphere by Queensland Mines Limited until a discharge authorisation based on standards determined by the Supervising Authority has been issued. Emissions to the atmosphere from the ore treatment operations shall be managed as proposed by Queensland Mines Limited and approved by the Supervising Authority.

(b) Queensland Mines Limited shall progressively develop appropriate air quality models suitable for assisting in making operational decisions relating to the protection of human

health, biological resources and material objects of Aboriginal culture. The models shall be approved by the Supervising Authority before being used for the purpose of making operational decisions.

13. Queensland Mines Limited shall establish, operate and maintain a meteorological station. The station shall be situated at a site selected and equipped and operated to standards proposed by Queensland Mines Limited and agreed by the Supervising Authority taking account of the advice of the Bureau of Meteorology and other appropriate authorities. The meteorological station is to provide adequate data for air emission control purposes as well as to provide a climatological record and analysis for the site. Data so obtained will be made available to the Supervising Authority.

14. Queensland Mines Limited shall develop a test procedure for use during the initial start up of the calciner and the start up after any interruption to its operation to ensure that, before ignition, the system is operating satisfactorily.

15. The calciner and yellowcake processing plant shall be fitted with emission control equipment which reduces the emission of dust, uranium and uranium compounds to the environment to as low a level as can be achieved by the use of best practicable technology.

16. Appropriate dust control measures shall be employed at all times and in all phases of the mining and ore treatment operations to keep dust levels below values specified by the Supervising Authority with a view to avoiding, if possible, the need for habitual use of respiratory protective devices.

Technology

17. Taken as a whole, and in their component parts, the plant and the mine shall be designed, and the mining, milling and related operations within the Nabarlek Project Area shall be carried on in accordance with best practicable technology.

18. All works, processes or equipment entailing modifications to the Nabarlek Project as presented in the Nabarlek Uranium Project Final Environmental Impact Statement, Queensland Mines Limited, January 1979, shall, in so far as such modifications have a significant effect on the environment, be approved in writing by the Supervising Authority prior to their employment or installation within the Nabarlek Project Area.

19. Nothing in the Environmental Requirements shall be interpreted to prevent or discourage Queensland Mines Limited from attaining higher environmental standards than those specified.

20. The Northern Territory Minister may from time to time, after consultation with the Commonwealth Minister for the time being administering section 41 of the Atomic Energy Act 1953 of the Commonwealth, require the operations to be carried on in accordance with such further and other conditions (of which he shall give notice to Queensland Mines Limited) as, in his opinion, will render the Environmental Requirements applicable to the operations more effective for the protection of the environment, and are reasonably practicable in the circumstances.

Blasting

21. (a) Before commencement of removal of overburden involving blasting, Queensland Mines Limited shall establish measuring sites at points to be agreed with the Supervising Authority, and shall carry out and measure the effects of test blasts in collaboration with the Supervising Authority to provide information to define standard blasting practices. Records of measurements shall be made available to the Supervising Authority.

(b) The standard blasting practices to be adopted by Queensland Mines Limited shall first be approved by the Supervising Authority.

Waste Rock Dump

22. Queensland Mines Limited, whenever required to do so by the Supervising Authority, shall submit to the Supervising Authority such plan or plans of the waste rock dump and the below ore grade mineral stockpile, as the Supervising Authority may require, showing the size, shape, significant material type and its location within the dumps and the silt collection system.

23. Prior to the completion of the first 3 years of milling of ore, Queensland Mines Limited shall submit to the Supervising Authority, a detailed program with supporting experimental evidence for the revegetation of the Nabarlek Project Area.

Vegetation and Landscape Protection

24. (a) For the purpose of protecting vegetation in the Project Area, Queensland Mines Limited shall fence all areas in which mining and ancillary operations take place.

(b) Queensland Mines Limited shall take all practicable steps to protect from trampling, cutting, unplanned and uncontrolled burning, picking or other disturbance, all vegetation in the Nabarlek Project Area, disturbance of which is not essential to mining operations.

25. Queensland Mines Limited shall carry out soil conservation measures within the Nabarlek Project Area specified by the supervising Authority from time to time.

26. (a) All tailings shall, as soon as practicable, be dealt with by being deposited in or transferred to the mine pit in a manner approved by the Supervising Authority.

(b) No tailings shall be deposited or transferred to the pit before the pit is prepared in a manner designed to minimise seepage and approved by the Supervising Authority.

27. (a) The sites of mining excavations, the tailings retention system and other areas where ground has been disturbed shall be rehabilitated and revegetated to the satisfaction of the Supervising Authority.

(b) In revegetation, Queensland Mines Limited shall establish appropriate ground cover plants in accordance with the directions of the Supervising Authority and shall fence, protect and, if necessary, renew the establishing vegetation as may be necessary to bring about the rapid restoration of stable vegetation native to the region.

(c) The obligations of Queensland Mines Limited under (a) and (b) above shall cease upon issue of a certificate of revegetation by the Supervising Authority.

(d) Prior to the commencement of any excavation, Queensland Mines Limited shall prepare contour maps in sufficient detail to permit restoration of mined or disturbed areas to their original contours or to such other contours as the Supervising Authority may approve.

(e) Queensland Mines Limited shall conduct a vegetation survey of the Nabarlek Project Area to the satisfaction of the Supervising Authority.

(f) All topsoil from areas that have been disturbed shall be stored and used for the purpose of surface rehabilitation.

(g) Queensland Mines Limited shall establish a nursery of such plants as may be approved by the Supervising Authority for use in site rehabilitation.

28. Except where otherwise authorised by the Supervising Authority, all structures which remain in the Nabarlek Project Area at the end of the mining and ancillary operations and which it is the intention of Queensland Mines Limited to abandon shall be dismantled and removed entirely; unwanted materials and rubbish including concrete shall be buried, covered with waste rock and topsoil and the surface revegetated.

Transportation

29. Transportation of yellowcake from Nabarlek shall be undertaken in a manner approved by the Supervising Authority. During the 'wet season', as defined by the Supervising Authority, transportation of yellowcake from Nabarlek shall not be undertaken by surface transport outside the project area and within the Alligator Rivers region except in a manner and by a route approved by the Supervising Authority.

30. Prior to commencement of excavation of the mine pit, Queensland Mines Limited shall design a monitoring program to the approval of the Supervising Authority. The program shall be designed to continue without interruption, and shall include measurements in relation to biota, water, sediments and air within the Nabarlek Project Area and will include a personal and environmental radiation monitoring program. The program will include details of numbers and the level of training of staff involved, methods to be used and logistics. A basic program shall be brought into operation before mining and treatment of ore commence. Monitoring as approved by the Supervising Authority shall continue for the duration of the project and for such time after its termination as is necessary for the environment to return to conditions acceptable to the Supervising Authority.

31. (a) Queensland Mines Limited shall monitor emissions from installations and operations in the Nabarlek Project Area to (i) air, and (ii) water.

(b) Queensland Mines Limited shall monitor ambient conditions in the Nabarlek Project Area in accordance with the Code of Practice on Radiation Protection in the Mining and Milling of Radioactive Ores (Australian Department of Health, 1975) and any revisions from time to time.

32. Queensland Mines Limited shall comply with the directions of the Supervising Authority relating to the coordination of monitoring programs and the standardisation of equipment and methods used in monitoring programs.

33. Queensland Mines Limited shall ensure that their monitoring standards and methods are conducted in such a way that the laboratory could obtain registration with the National Association of Testing Laboratories, Australia, and in accordance with the quality control program required by the Supervising Authority. Queensland Mines Limited shall maintain continuous records of performance of monitoring systems referable to independent laboratories participating in international intercomparison and calibration programs.

34. Queensland Mines Limited shall, as far as practicable and as required by the Supervising Authority, present data in a format compatible with computer analysis and suitable for data interchange with relevant national organisations.

35. Queensland Mines Limited shall ensure proper analysis of monitoring results and shall make data available to the Supervising Authority in a form prescribed by the Supervising Authority.

36. (a) Queensland Mines Limited shall, prior to commencement of excavation of the pit, develop a contingency plan, to be approved by the Supervising Authority, that shall provide for immediate defined action for the continuation of monitoring in the event of probable emergencies.

(b) All emergency events, including details of unscheduled interruption to monitoring, shall be recorded and a report made to the Supervising Authority within 14 days.

(c) Queensland Mines Limited shall keep a record of such emergency events together with a log of service for all monitoring equipment; copies of these, together with reports of the causes of such events, shall be forwarded to the Supervising Authority.

37. Queensland Mines Limited shall employ staff with appropriate qualifications and experience to establish, operate and maintain the on-site monitoring program.

Research

38. Queensland Mines Limited shall undertake appropriate investigations as required by the supervising Authority to define the design and operating conditions capable of meeting environmental protection criteria applied to the Nabarlek Project.

39. Queensland Mines Limited shall cooperate with the Supervising Authority in undertaking appropriate investigations and in providing information relevant to identifying and overcoming environmental problems within or relevant to the Nabarlek Project Area.

40. The results of environmental research and investigations performed by Queensland Mines Limited may be submitted for publication in technical literature. Queensland Mines Limited may permit their staff to take part in technical conferences held to report on and review

research investigations and monitoring relating to environmental aspects of uranium mining projects.

Definitions

41. "Best practicable technology" is that technology from time to time relevant to the Nabarlek Project which produces the minimum environmental pollution and degradation that can reasonably be achieved having regard to -

(a) the level of effluent control achieved, and the extent to which environmental pollution, and degradation are prevented, in mining and milling operations in the uranium industry anywhere in the world;

(b) the total cost of the application or adoption of that technology relative to the environmental protection to be achieved by its application or adoption;

(c) evidence of detriment, or of lack of detriment, to the environment after the commencement of the Nabarlek Project;

(d) the physical location of the Nabarlek Project;

(e) the age of equipment and facilities in use on the Nabarlek Project and their relative effectiveness in reducing environmental pollution and degradation; and

(f) social factors including possible adverse social effects of introducing new technology.

42. "Nabarlek Project Area" means the area described in the First Schedule to the Special Mineral Lease to be issued by the Northern Territory Government to Queensland Mines Limited in relation to this Project.

43. "Applicable law" means every law (whether Common-wealth, Territory or other) from time to time validly in operation in the Northern Territory which is applicable according to its tenor to any aspect of the operations.

44. "Supervising Authority" in respect of any action, activity or matter specified herein, means the person having responsibility for or in relation to that action, activity or matter under an applicable law or if there is no applicable law, the person for the time being performing the duties of Supervising Scientist under the Environment Protection (Alligator Rivers Region) Act 1978 of the Commonwealth.