

Alligator Rivers Region Technical Committee

16th Meeting

Darwin – 31 August to 2 September 2005

Members:

Prof Barry Hart – Independent Scientific Member
Mr Ray Evans - Independent Scientific Member
Mrs Jill Fitch – Independent Scientific Member
Mr Mark Foy – Northern Land Council
Dr Carl Grant - Independent Scientific Member
Dr Terry Hillman - Independent Scientific Member
Dr Arthur Johnston – Supervising Scientist
Dr Tony Milnes – Energy Resources of Australia Ltd
Prof Jon Nott - Independent Scientific Member
Dr Jenny Stauber - Independent Scientific Member

Apologies:

Mr Richard Jackson - Department of Primary Industry, Fisheries and Mines
Mr Peter Wellings - Parks Australia North

Advisers and Observer (present for all or part of the meeting):

Ms Jane Addison – EWL Sciences Pty Ltd
Ms Renee Bartolo - Office of the Supervising Scientist
Dr Peter Bayliss - Environmental Research Institute of the Supervising Scientist
Dr Sean Bellairs - Charles Darwin University
Dr Andreas Bollhofer - Environmental Research Institute of the Supervising Scientist
Dr Ken Evans - Environmental Research Institute of the Supervising Scientist
Mr Mark Gardiner – EWL Sciences Pty Ltd
Mr Ian Hollingsworth – EWL Sciences Pty Ltd
Mr Alan Hughes - Office of the Supervising Scientist
Dr Chris Humphrey - Environmental Research Institute of the Supervising Scientist
Dr David Jones - Environmental Research Institute of the Supervising Scientist
Dr David Klessa – EWL Sciences
Mr Geoff Kyle - Gundjeihmi Aboriginal Corporation
Mr Ian Loftus - Office of the Supervising Scientist
Mr John Lowry - Environmental Research Institute of the Supervising Scientist
Mr Dene Moliere - Environmental Research Institute of the Supervising Scientist
Dr Kirrilly Pfitzner - Environmental Research Institute of the Supervising Scientist
Dr Claudia Sauerland - Environmental Research Institute of the Supervising Scientist
Mr Howard Smith - Northern Land Council
Mr Keith Tayler - Department of Primary Industry, Fisheries and Mines
Dr Rick van Dam - Environmental Research Institute of the Supervising Scientist

1.1 Welcome and Overview

1.1.1 Barry Hart opened the meeting at 8.30am on Thursday 1 September and welcomed members, advisers and observers. He extended a particular welcome to Professor Jon Nott, recently appointed to ARRTC replacing Professor Gerald Nanson, and Dr David Jones, recently appointed as Director of ERISS. He then asked everybody to introduce themselves.

1.2 Apologies and Observers

1.2.1 Barry Hart noted the apologies of Peter Wellings from Parks Australia and Richard Jackson from the Department of Primary Industry, Fisheries and Mines. He noted that Keith Tayler was attending the meeting in Richard Jackson's place. Barry Hart then noted that a range of observers and advisors would be attending either part of or the entire meeting.

1.3 Declarations of any conflicts of interest with Agenda items

1.3.1 There were no declarations of any conflicts of interest with Agenda items.

2 Draft Summary Record of 15th Meeting

2.1 Draft Summary Record

2.1.1 Members discussed the draft Summary Record of the 15th meeting, which was held in March 2005.

2.1.2 Carl Grant queried paragraph 3.2.86, asking about the draft ERA closure plan. Tony Milnes advised that he would be talking on this issue at agenda item 6.1.1.

2.1.3 Carl Grant noted a typographical error in paragraph 3.2.88. Should be "Carl Grant" rather than "Carl Granted".

2.1.4 Jill Fitch noted a typographical error in paragraph 3.2.26. She noted that "several few years" should be changed to "several years". Barry Hart then sought clarification on the Gantt chart, and Arthur Johnston advised that Tony Milnes would be providing the chart to the meeting in an A3 sized colour format at agenda item 6.1.1. Arthur Johnston then described the format of the chart and noted that ERA's reporting was presented in a different way to the ERISS reporting.

2.1.5 Ray Evans then commented on the level of detail in the draft Summary Record of the 15th meeting, and suggested that the depth of detail could be removed and the reporting brought back to a higher level.

ACTION/OUTCOME 2A:

ARRTC:

(1) Asked Ian Loftus to reduce the level of detail in the Summary Records of this and subsequent ARRTC meetings; and

(2) noted that the draft Summary Record was, subject to the amendments noted in paragraphs 2.1.2 to 2.1.4, a true record of the 15th ARRTC meeting.

2.1.6 Ray Evans noted that some material from previous meetings had not made it on to the agenda for the current meeting. An example is the issue of the land application areas at Jabiluka, and whether they are monitored or surveyed to determine residual uranium in

the soil. Tony Milnes advised that a report had been prepared several months ago, and that he thought that David Klessa had circulated it to Ray Evans. Tony Milnes advised that it was not possible to sample soil as earthworks had destroyed the irrigation area.

2.1.7 Barry Hart responded, asking Ian Loftus ensure that all meeting outcomes are captured in a separate agenda item. Arthur Johnston then noted that the agenda would be restructured in accordance with the Key Knowledge Needs structure, and he asked ARRTC members to consider possible agenda frameworks.

ACTION/OUTCOME 2B:

ARRTC Asked Ian Loftus to ensure that all meeting outcomes are captured in a separate agenda item for the next meeting.

2.1.8 The meeting discussed the issue of meeting papers being provided late, with members noting earlier meeting resolutions where papers were requested a minimum of two weeks ahead of each meeting.

ACTION/OUTCOME 2C:

ARRTC noted its expectation that meeting papers will be made available a minimum of two weeks ahead of each meeting.

2.1.9 Ray Evans then noted that the content of the ERA paper on their research program was not what he had expected to see, given the discussions and outcomes of previous ARRTC meetings. He suggested that the ERA paper did not “look forward” to the same extent that the ERISS paper presented to the 15th ARRTC meeting did. Tony Milnes responded noting that the EWLS forward planning program had not yet gone to ERA for consideration and that it would be premature to consider programs at this stage. Arthur Johnston then advised that ERISS provides draft material to ARRTC, and suggested that ERA could do the same.

2.1.10 Barry Hart then noted ARRTC’s role in advising the Minister/Parliamentary Secretary about the quality of science, and that this was possible in relation to ERISS activities but that it was very difficult for ERA activities.

2.1.11 There was then discussion by ARRTC members, with consideration being given to ERA’s annual funding cycle and budget process, the overall Key Knowledge Needs context, the timing of ARRTC meetings, and whether reporting could be done on an ongoing basis.

2.1.12 After this discussion Ray Evans, Barry Hart, Tony Milnes and Arthur Johnston agreed to try to reach resolution of the issue by out of session discussion prior to the next ARRTC meeting.

3 Research Activities and Key Knowledge Needs

3.1 ERISS – Key Knowledge Needs

3.1.1 Arthur Johnston and David Jones advised the meeting that the document provided by ERISS was lengthy and that several presentations would be made by ERISS staff, and that these presentations would not consider each project in great detail but would look at the highlights.

ACTION/OUTCOME 3A:

ARRTC thanked ERISS for the paper, noting that it was of a high quality and reflected significant effort by ERISS staff.

3.1.2 Arthur Johnston then noted a revised reporting process by ERISS, with the Supervising Scientist's annual report, together with ARRAC and ARRTC reporting requirements, streamlined to reduce duplication.

Environmental Radioactivity - Andreas Bollhofer

3.1.3 Andreas Bollhofer gave a presentation on environmental radioactivity activities, and it was followed by discussion on issues arising from the presentation.

3.1.4 Ray Evans suggested that it is hard to see a link between a particular part of the environmental radioactivity work dealing with groundwater radiogenic species and the Key Knowledge Needs. David Jones noted the need to get baseline data. Ray Evans suggested that there is a need to better state the objectives. Barry Hart advised that he has not got a conceptual model of the groundwater regime, and sought information about the broader picture. Ray Evans then advised that he has interacted with EWLS and that good information is available.

3.1.5 Tony Milnes then noted that collaborative work with CSIRO has been proposed; he also noted a recent Rio Tinto scientific review of EWLS, and that EWLS is looking at bringing staff together to look at groundwater/surface water interactions, and that this will include CSIRO and ERISS.

3.1.6 Arthur Johnston then noted the need to go through each Key Knowledge Need and identify the information needs, and who will do the work. Arthur Johnston then suggested that a report could be made back to the next meeting.

ACTION/OUTCOME 3B:

ARRTC noted that a report linking information needs with each Key Knowledge Need, together with identification of who will do the work, should be provided to the next ARRTC meeting.

3.1.7 In relation to atmospheric radioactivity, Jill Fitch queried the size of the error in relation to the mine-derived contribution, and Andreas Bollhofer advised that it is in the vicinity of plus/minus 50% or more. Arthur Johnston advised that the mine-derived levels are extremely low and that background radiation levels are high everywhere

3.1.8 In relation to bioaccumulation in bushfoods, Howard Smith asked about the availability of GIS information to external users. Andreas Bollhofer advised that this aspect is still under development but that the NLC is welcome to come in and use the system.

3.1.9 Ray Evans then commented on "Knowledge management", and suggested that this presents an opportunity for interaction rather than just management. It has the potential to provide a very good communications tool. Arthur Johnston agreed, and advised that it could be used as part of the broader trophic transfer model.

Geographical Information Systems - Kirrily Pfitzner

3.1.10 Kirrily Pfitzner gave a presentation on the use of GIS by ERISS, with a focus of remote sensing.

3.1.11 Terry Hillman then asked how ERISS rated itself in GIS. Kirrily Pfitzner responded, and noted that ERISS is emerging strongly. She noted the acceptance of peer-reviewed articles and the development of a spatial library. Arthur Johnston then noted earlier ARRTC debates about whether ERISS should have a GIS program.

3.1.12 Jill Fitch then congratulated the team, noting that tremendous progress had been made. She added that it was good to see an analysis of previous years' data. She then noted that she finds it hard to get a sense of radionuclides in groundwater as this is not her field.

3.1.13 Ray Evans and Carl Grant then noted the bushtucker GIS work, and suggested that it represented a really good approach with lots of potential. Jenny Stauber asked if the GIS database be used as a reference to normal national levels, and David Jones noted this could be hard as it is linked to the broader dose assessment approach.

3.1.14 Jenny Stauber then asked about air radon monitoring being reduced from four sites down to one, and queried the history of this. Andreas Bollhofer noted that Djar Djar and Nabarlek data have been analysed, but that lots of other data has not yet been analysed. He added that the maintenance of radon monitoring equipment is a very expensive exercise. He noted that radon in close proximity (that is ~2 km) to Ranger is the main focus now, in the context of future rehabilitation and the future post-mining landform; the Mudginberri station will be kept operational. Arthur Johnston then advised that Mudginberri was the only long-term monitoring station originally envisaged.

3.1.15 Barry Hart then noted that the radon emanation work is really important and shows good outcomes.

3.1.16 Tony Milnes asked if satellite/airborne radiometric data might have potential practical application in the Alligator Rivers Region. Andreas Bollhofer responded, and advised that was some potential, as demonstrated by the Land Application Area airborne gamma survey. Andreas Bollhofer advised that he is not sure about satellite.

ACTION/OUTCOME 3C:

ARRTC Thanked Kirrily Pfitzner for her presentation and noted the high quality of the work.

Geomorphology - Ken Evans.

3.1.17 Ken Evans then gave a presentation on geomorphology issues.

3.1.18 There was then some discussion by members on Siberia's methodologies and scope, especially in relation to parameters and extreme events.

3.1.19 Jon Nott then asked about the height of landforms along flood levels, and Tony Milnes responded, noting that RL+39 is the highest and that Magela is approximately RL+12. He added that the mine is at approximately RL+20.

3.1.20 Jon Nott noted that he did not see any research being carried out within the Siberia modelling framework on extreme flood events in the Magela Creek system and the possible resulting erosion. He suggested that the SIBERIA modelling did not take this

into account, and he advised that he would like to see some detailed modelling of extreme flood events in the catchment using one of the new generation of numerical flood models.

3.1.21 Howard Smith asked how SIBERIA could manage the 10,000 year requirements as required by the Ranger ERs. Ken Evans noted that SIBERIA can handle that requirement, adding that fine sediments will move in the short term but that erosion will slow down and reach background over time. Tony Milnes then noted that the 10,000 year requirement related to the containment of tailings, not the broader landform.

3.1.22 Arthur Johnston then noted that SIBERIA is best used as a design tool to identify aspects of landform design, and that it has potential to assist in designing the landform and identifying potential problems.

3.1.23 Ken Evans then talked about erosion control at Nabarlek. Barry Hart asked what the final outcome was in relation to the upstream versus downstream issue. Ken Evans advised that Professor David Fox is looking at power analysis of event-based models, and his conclusions will be presented at ARRTC at some point in the future.

3.1.24 Ray Evans then noted that the 2003 Canberra bushfires were followed by a large (~90 mm) rainfall event a month later. He queried whether such a coincidence of events should be considered, for example a fire followed by a cyclone. Ken Evans advised that he could look at probability and determine overall probability, then look at a 1000 year timeframe. Ray Evans noted that the model needs to be able to handle such episodically driven events.

Ecological Risk Assessment - Rick van Dam

3.1.25 Rick van Dam then gave a presentation on ecological risk assessment issues.

3.1.26 Carl Grant asked about benchmarking against ecological risk assessment software, and Rick van Dam clarified that his is only a conceptual model and that later work will build upon it.

3.1.27 Terry Hillman then noted that there does not appear to be any ecological risk to the offsite environment.

3.1.28 Jenny Stauber queried whether ERISS continued to do uranium and radium monitoring for mussels and fish, and Chris Humphrey confirmed that this work is continuing. Jenny Stauber then noted bioaccumulation in plankton, and that plankton death could indirectly lead to higher order impacts.

3.1.29 Barry Hart then thanked Rick van Dam and summarized the discussion, noting the generally low risk of offsite trophic transfer, but suggesting that waterbirds are a potential pathway.

Ecotoxicology – Rick van Dam

3.1.30 Rick van Dam then gave a presentation on ecotoxicology, in particular the magnesium sulfate project.

3.1.31 Terry Hillman then asked about the stability of the magnesium/calcium ratio, and David Jones advised that some factors (such as groundwater influence and a change in mine stockpile management) could influence the stability.

3.1.32 Geoff Kyle then noted that results seemed to be based on 009, and asked Rick van Dam whether ERISS planned to look at magnesium going into the Gulungul catchment.

He added that the lack of a focus at Gulungul Creek is a point of concern. Rick van Dam responded and advised that this would not be difficult.

ACTION/OUTCOME 3D:

ARRTC noted that an update on focus issues for Gulungul Creek should be provided to the next ARRTC meeting.

3.1.33 Jenny Stauber then asked about the methodology in relation to acute versus chronic effects, and whether different ratios could be applied to acute data. Rick van Dam confirmed that the methodology had recently moved from NOEC to point estimates. Barry Hart asked about distribution, and whether any major changes could be seen using different models. Rick van Dam said yes, but not the same level of difference as for uranium.

3.1.34 Arthur Johnston then noted the change to the way that magnesium is treated, and that it was potentially regarded as toxic until the calcium impact was included. Arthur Johnston also noted that manganese is another potential issue.

Monitoring - Chris Humphrey

3.1.35 Chris Humphrey then gave a presentation on monitoring activities.

3.1.36 In relation to creekside monitoring, Terry Hillman asked Chris Humphrey if the sampling was quantitative enough. Chris Humphrey responded, noting that it is a robust method but that there is potential for observer bias.

3.1.37 Alan Hughes asked about Para grass at Mudginberri Billabong, and Chris Humphrey responded, noting that the prevalence of Para grass at that site has increased, but that the billabong is deeper and more difficult for Para grass to take hold.

3.1.38 Ray Evans then noted that some of the work would not stand up if used in court proceedings, and Arthur Johnston then advised that the work was aimed at “best practice” research and monitoring rather than in providing a legal basis.

Rehabilitation – Peter Bayliss

3.1.39 Peter Bayliss gave a presentation on rehabilitation, and Tony Milnes provided a contextual overview.

3.1.40 David Jones asked about the number of plants, and Sean Bellairs advised that five species would be the initial target, but that several hundred species would be the longer term target. Carl Grant agreed that multiple hundreds of species should be the eventual objective of this rehabilitation exercise.

3.1.41 Carl Grant noted that he is pleased to see this type of work now underway, and that the appropriate people are involved.

3.1.42 Carl Grant then noted, based on the previous day’s field tour, that irrigation in the RP1 irrigation area had resulted in an artificially-high fuel load, and that a very hot fire had recently passed through the area. He suggested that the fuel load issue needs to be addressed so that wildfires do not destroy the vegetation.

3.1.43 Ray Evans then asked if there is any issue with the uranium content in leaves during fires. Ian Hollingsworth advised that this is not a big issue in the overall picture.

Closure Criteria - Peter Bayliss

3.1.44 Peter Bayliss then gave a “road map” presentation of closure criteria activities, assisted by Mark Gardiner.

3.2 ERISS – Other

A classification of plant communities from ARR analogue sites in relation to Ranger rehabilitation.

3.2.1 Chris Humphrey gave a brief update on the classification of plant communities from Alligator Rivers Region analogue sites in relation to the rehabilitation of Ranger.

3.2.2 Some discussion on rehabilitation issues and analogue sites followed.

Indigenous Knowledge

3.2.3 David Jones gave an update on progress in relation to indigenous knowledge, noting that this issue had been raised by Elaine Glen at an earlier ARRTC meeting.

3.2.4 Howard Smith advised that he has been in contact with Elaine Glen, and that he has nearly finalized the paper that was commenced in 2004. It will be provided to ARRTC members when completed.

3.2.5 Barry Hart then noted that thoughts on indigenous knowledge do seem to be changing, but that effective mechanisms to capture indigenous/other knowledge needs to be developed. He noted Nabarlek as an example of where indigenous people are involved.

3.2.6 Geoff Kyle then noted the importance of differentiating between indigenous people and Traditional Owners, noted that there are only 27 adult Mirarr and that Mirarr do not want other people (including indigenous people) speaking on behalf of their own country.

ACTION/OUTCOME 3E:

ARRTC asked that indigenous knowledge be included on the agenda for the 17th Meeting.

Landscape Scale Analysis Project

3.2.7 Peter Bayliss then gave a presentation on the landscape scale analysis project.

3.2.8 Keith Tayler asked about risk assessment based on current and historic events, with a focus on catastrophic events. Peter Bayliss noted other KKN on extreme events. Arthur Johnston then talked about the Jabiluka risk assessment, noting that it included a number of extreme event scenarios. He advised that the overall risk of extreme events influencing the movement of contaminants remained very low as a probability. Rick van Dam noted that Barry Noller had done earlier work on the role of extreme events on the future of the Ranger tailings dam.

3.2.9 Geoff Kyle then asked about fire in the context of a rehabilitated landscape, noting that what Parks Australia does is not necessarily what individual groups of Traditional Owners want. Peter Bayliss the noted the desire of Traditional Owners to influence the management of Kakadu National Park.

3.2.10 Barry Hart then noted that ERISS is doing a tremendous job, and that the work is coming together nicely. He thanked Peter Bayliss.

3.2.11 David Jones then gave a presentation overviewing the ERISS performance against 2004-05 project reporting and the strategic directions and new initiatives.

3.2.12 David Jones then asked for ARRTC's views on potential hydrogeological expertise for ERISS. Ray Evans noted that not many people are available with relevant skills, and that a number of different options are available to address skills gaps.

ACTION/OUTCOME 3F:

ARRTC thanked David Jones for his presentation, noting that the project is proceeding well.

3.3 ERA Research

List of ERA Reports

3.3.1 Tony Milnes noted the list of reports that he had provided to the meeting.

Report on Progress Against 2005 R & D Projects

3.3.2 Tony Milnes then discussed the tabled Gantt chart describing projects by Key Knowledge Need down to "level 3" headings. He noted that projects/programs up to 2008 are mapped for each Key Knowledge Need. He added that the chart was produced at the request of ARRTC.

3.3.3 Tony Milnes then went through the chart, noting that Charles Darwin University and Parks Australia projects are not included. He also noted that no projects were listed beyond 5.2. He then noted that ERA and ERISS projects are described differently due to different effort/resources issues for each organisation, and that these differences were identified at a previous ARRTC meeting.

3.3.4 Tony Milnes then provided a brief overview of the ERA/EWLS business planning processes, noting that ERA's focus is on operational mining issues that require the generation of an application to the MTC. He advised that the application process operates in parallel to the KKN process.

3.3.5 Barry Hart then talked about the need to balance the strategic and operational aspects of Key Knowledge Needs reporting and information. Tony Milnes advised that reporting at a higher (strategic) level would be preferable.

3.3.6 Jill Fitch then noted that DPIFM had agreed to circulate MTC agendas/minutes to ARRTC members. Keith Tayler noted that this had been occurring, but that some slackening of the process may have resulted to recent NT Government restructures. He agreed to tighten-up the process of e-mailing MTC material to ARRTC members.

3.3.7 There was then discussion on the relationship with the MTC process, with Ray Evans noting that he would like to see a way of trapping MTC material likely to be of interest to ARRTC members. Ray Evans noted the role of ARRTC was dealing with the same issues that went to the MTC, but ARRTC was not an operational body and should not slow the decision process without good scientific reason.

3.3.8 Tony Milnes then asked how ARRTC would like information provided, and Terry Hillman suggested that it should be provided well in advance of meetings so that members can get back to ERA if required. Ray Evans noted the current process of obtaining reports from ERA as a way of reviewing relevant information as it became available.

3.3.9 Barry Hart advised that he is pleased with the way the information was being presented. He asked where it would lead to, and Tony Milnes noted that this is an ongoing work.

3.3.10 Jon Nott then asked about extreme events, and queried if projects on extreme events would be done. Tony Milnes noted that some work had been in the past, and David Jones noted that some Magela work is underway. Jon Nott then noted that we should not rely on the historical record, and that there is a need to look further. David Jones then noted that climate change is an issue. Arthur Johnston noted the extreme event proposal from the March 2005 ARRTC meeting.

3.3.11 Barry Hart then noted the need to bring together material from a variety of sources and David Jones advised that he was looking at collaborative flood modeling with Charles Darwin University. Jon Nott noted the need to factor in a variability of factors; for example, he noted oscillations in rainfall by decade and by century. He advised that we should look at higher resolution record on the landscape.

ACTION/OUTCOME 3G:

ARRTC noted the need to consider the higher resolution landscape record in relation to extreme events.

3.3.12 Arthur Johnston then suggested that the 25-year research summary, *Review of Mine-related Research 1978-2003*, should be published as a reference document.

3.3.13 Barry Hart then suggested that the Gant chart is a good way of mapping Key Knowledge Needs activities. Tony Milnes then noted the need for selective reporting, rather than every project being reported on every occasion.

3.3.14 Arthur Johnston then noted that ARRTC should keep an ongoing review of progress towards meeting the Key Knowledge Needs to make sure that things are being addressed. He suggested that different members could look after different parts of the Key Knowledge Needs. Ray Evans then noted the diversity of expertise as a strength of ARRTC with members able to get involved in different areas.

3.3.15 Jill Fitch then raised the issue of radiation protection as one of ongoing concern for her. Tony Milnes responded, and advised that approved statutory monitoring was in place and that other activities have pushed further development of the radiation management plan aside. He noted his intention to have the plan go to the regulator in mid-2006. Keith Tayler agreed that other events at Ranger have taken priority over radiation management plan, and noted the implementation of AS4801 at Ranger. He noted that the radiation management plan paper will be considered by the MTC, and that that it could be provided to ARRTC members.

ACTION/OUTCOME 3I:

ARRTC noted that the Ranger radiation management plan should be provided to the next ARRTC meeting.

Overview of Ranger Wet Season Report

3.3.16 David Klessa then gave an overview of outcomes from the recent Ranger wet season report. He noted that paper would be going to the MTC for consideration.

3.3.17 There was then some discussion on load limits and the setting of levels, with Arthur Johnston suggesting that load limits should be started from scratch. He advised that historical load limit calculations were based on releases of water from RP2, which have never occurred.

ACTION/OUTCOME 3J:

ARRTC thanked David Klessa for his paper and presentation and noted that the Ranger wet season report would be provided to the MTC.

4 Monitoring

4.1 Supervising Scientist's Monitoring Program

4.1.1 Arthur Johnston advised that monitoring issues had been covered under earlier agenda items.

5 Operational Mining Issues

5.1 Applications

5.1.1 Alan Hughes gave an overview and presentation on ERA's application to deposit tailings above RL0 in Pit 1.

5.1.2 There was then some discussion on trigger values and groundwater hydrology and hydrogeology. Ray Evans advised that he had read the Kalf and Townley reports, and that both models show egress of solutes from Pit 1 to the surrounding environment. He added that movement towards Corridor Creek appears likely and that there is a need to monitor and manage solute change outside the pit. Tony Milnes responded, noting that the pressure from Pit 1 backfill would force solutes into the environment, and that this matter will be considered in the context of the broader whole-of-site risks.

5.1.3 Arthur Johnston added that what happens in the next ten years is the main focus of the Supervising Scientist, with Supervising Scientist recommendations to the MTC including contingencies to deal with solute movement.

6 Member Reports and Updates

6.1 ERA (Ranger and Jabiluka) Update

6.1.1 Tony Milnes gave an overview of the recently-announced Ranger closure model, and there was some discussion on the model and its underlying assumptions, together with its timeframes.

6.2 Hanson (Nabarlek) Update

6.2.1 No report was provided.

6.3 Parks Australia Update

6.3.1 No report was provided.

6.4 Department of Primary Industry, Fisheries and Mines Update

6.4.1 Keith Tayler gave an update of recent changes to the machinery of government in the Northern Territory. He described the structure of the new Department of Primary Industry, Fisheries and Mines (DPIFM).

6.5 Northern Land Council Update

6.5.1 Mark Foy noted that Howard Smith had already spoken on several NLC-related issues. He then spoke on Nabarlek, and advised that he will be meeting with Shane Maraldo in September to review mine close-out progress.

6.5.2 Jill Fitch asked about the Nabarlek bond issue, raised in earlier ARRTC meetings. Alan Hughes responded, and advised on process within the Mining Management Plan processes.

6.6 Supervising Scientist Update

6.6.1 Arthur Johnston advised that he had nothing further to add.

7 Other Business

7.1 ARRTC membership

7.1.1 Barry Hart then noted his earlier resignation as Chair of ARRTC and sought the advice of members in relation to the skills/strengths of the person who will be appointed to replace him. He noted that the Parliamentary Secretary had already appointed Ray Evans as Chair, with the appointment taking effect on 3 September 2005. Arthur Johnston then outlined the appointment process for ARRTC members.

7.1.3 ARRTC members then discussed the types of skills/strengths that they felt should be present on ARRTC and concluded that Barry Hart's position should be filled by a person with skills in ecological risk assessment, preferable with skills in water quality/environmental chemistry.

ACTION/OUTCOME 7A:

ARRTC recommended that the vacancy on ARRTC being left by Barry Hart should be filled by a person with environmental risk assessment skills, and preferable also with skills in water quality/environmental chemistry.

7.1.4 The meeting then noted that the ARRTC website was out of date and that it should be kept as up to date as possible

ACTION/OUTCOME 7B:

ARRTC asked Ian Loftus to ensure that the ARRTC website is kept up to date.

7.1.5 Barry Hart then reminded the meeting that this would be his last ARRTC meeting, and thanked ARRTC members for their participation since the committee was restructured in 2001. He advised that he has enjoyed his time at ARRTC since 2001, and is grateful to his colleagues for their cooperation and productivity. He then thanked the Arthur Johnston and his staff, and Tony Milnes and his staff. He then thanked Ian Loftus and other staff for organising the meetings. Finally, he wished Ray Evans all the best as incoming Chair,

7.1.6 Arthur Johnston then noted that this would also be his last ARRTC meeting. He noted his enjoyment at working with the revamped ARRTC since 2001.

ACTION/OUTCOME 7C:

ARRTC thanked both Barry Hart and Arthur Johnston for their participation in ARRTC and wished them all the best for their respective resignation and retirement.

8 Close

8.1 Next Meeting

8.1.1 The meeting discussed possible dates for the next ARRTC meeting..

ACTION/OUTCOME 8A:

ARRTC agreed that the next meeting should be held on 27-28 February 2006.