

## **S.B. (Ben) Dickinson 1912-2000: geologist, public servant, mining executive\***

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Ben Dickinson's contribution to the Australian mining sector traversed technical, advisory and business development roles in both the private and public sectors. He was responsible for securing South Australia's reliance on coal for its electricity generation requirements, brought the Radium Hill uranium mine into operation and was given responsibility for developing Rio Tinto's Australian mineral portfolio in the 1950s. Knighted for services to the mining industry, Dickinson had a remarkable and varied career in the mining sector, and despite areas of disappointment and failure, he stands as a remarkable individual in the twentieth century Australian mining scene. His story deserves wider recognition, with this article chronicling the main aspects of Dickinson's career.

### **Background**

Samuel Benson (Ben) Dickinson was born in Hobart, Tasmania on 1 February 1912, one of two sons to Sydney Rushbrook Dickinson (1877-1949) and Margaret (née Clemes). Ben's father was a teacher, following in the steps of his own father, Samuel Broadbent Dickinson (1849-1907).<sup>1</sup> Sydney Dickinson taught at Leslie House School in Hobart, which had been set up by Samuel Clemes who had established The Friends' School in Hobart in 1887, based on Quaker principles.<sup>2</sup> Sydney moved to New Zealand to set up and run two Presbyterian Schools.<sup>3</sup> At the end of the First World War, the family moved to Victoria where Ben's father was headmaster and proprietor of Haileybury College, Brighton. Ben Dickinson's secondary education was at Haileybury where he was head of school and Dux, excelling at sports. Brought up in a cultured and well-educated family, Dickinson's formative years shaped his strong intellect, impatience for outcomes he viewed as advancing Australia's interests and a commitment to hard work, as well as an unconventional streak.

Ben had little desire to follow in his father's footsteps as a teacher. He was introduced to Walter Rose, a metallurgist and mining engineer who had worked with Zinc Corporation and the Electrolytic Zinc Co. of Australasia before becoming the managing director of Titan Manufacturing in Melbourne.<sup>4</sup> Rose and others inspired Dickinson to pursue a career in geology. He enrolled in a Bachelor of Science in Mining Engineering and Economic Geology degree at the University of Melbourne and was awarded first class

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\* This article has been peer reviewed.

honours as well as winning the Exhibition Prize in geology. He went on to complete a Master of Science degree with a thesis related to the copper fields of South Australia.

### **Geologist**

While pursuing his undergraduate studies Dickinson took leave and worked with Mount Isa Mines. A period as assistant geologist with the Aerial, Geological and Geophysical Survey of Northern Australia (AGGSNA) followed from 1936 to 1937.<sup>5</sup> The Survey was the idea of Sir Herbert Gepp, who joined the Commonwealth public service after being employed as a metallurgist by Zinc Corporation, and as general manager of Electrolytic Zinc Co of Australasia and Australian Paper Mills. Gepp proposed the formation of a function to assess mineral development opportunities in northern Australia.<sup>6</sup> The Survey operated for eight years from 1934, conducting aerial reconnaissance mapping and field work to identify areas of mineralisation.<sup>7</sup>

Gepp was a colleague of W.S. Robinson, an industrialist and advocate for geological investigations to better assess Australia's prospects for economic ore bearing deposits.<sup>8</sup> In the early 1930s Robinson sponsored the visit of overseas geologists to Australia, involving Harvard University professor H.E. McKinstry, as well as eminent North American-trained geologists such as Dr John Gustafson, Terrence Connolly and Haddon King. Robinson's expectation was that with the best possible form of geological investigation, the prospects for the discovery and development of commercial mines would be improved.<sup>9</sup>

**Figure 1:** *A young Ben Dickinson.*



Source: Dickinson, Samuel Benson Collection, State Library of South Australia, PRG 1097.

Dickinson was subsequently employed as a geologist with the W.S. Robinson-inspired Gold Mines of Australia from 1937, involved in survey work at the Costerfield gold and antimony mine in Victoria. In this role and others, he worked with some of the eminent geologists that Robinson had brought to Australia. For example, Terrence Connolly, a Canadian mining geologist, engaged Dickinson to work at Rosebery in Tasmania with Electrolytic Zinc, as well as The Mount Lyell Mining and Railway Company, from 1938 to 1940. Dickinson was influenced by Connolly's approach as a structural geologist and took part in a detailed examinations of the underground workings of the Mount Lyell mine and regional geology.

Dickinson's experiences as a young geologist with the Commonwealth's AGGSNA and with mining companies associated with the Collins House group under the leadership of W.L. Baillieu and W.S. Robinson, had a major bearing on his later career. As director of mines in South Australia he supported a systematic programme of aerial photogrammetry to assess the State's mineralisation, while for Rio Tinto he initiated regional exploration programmes in Tasmania and the Mount Isa-Cloncurry area.<sup>10</sup> In addition, Dickinson's association with overseas-trained geologists exposed him to a more sophisticated approach to geophysical investigation.<sup>11</sup> His knowledge of industrialists like W. S. Robinson instilled in him an appreciation of the value of mineral discoveries being integrated with processing and fabricating activities for wider economic benefits. He brought these experiences to the role of director of mines in South Australia, while with Rio Tinto he was an advocate for both minerals development, as well as downstream processing, including titanium and alumina production.

### **Public servant**

Dickinson started work with the South Australian Department of Mines in May 1940 as an assistant geologist, aged twenty-nine.<sup>12</sup> In the same year he married Jessica Helen Ward, the daughter of Dr Keith Ward, the director of the department. The marriage to Jessica was the first of three marriages. As a public servant, Dickinson brought to his role a strong academic background and practical geological experience. By August 1942 Dickinson had been appointed deputy director of mines and deputy government geologist. In March 1944, he was made director of mines and government geologist, as well as supervisor of boring operations and secretary to the Minister of Mines. Aged thirty-two, Dickinson took over departmental responsibilities from his father-in-law.<sup>13</sup>

Much of the department's focus during the Second World War related to sourcing minerals critical to the war effort. Dickinson undertook a comprehensive study of the copper resources of the State for the Copper and Bauxite Committee, established by the Department of Supply in May 1941. He also served as deputy controller, Minerals Production, for the Commonwealth Government. Copper was in short supply and required for the manufacture of shell casings and cartridges.<sup>14</sup> Dickinson's academic study on copper mining in South Australia equipped him for this task.<sup>15</sup> The wartime work also involved the identification of minerals, the supply of which had been interrupted by the war. These included phosphate rock, necessary for the manufacture of superphosphate

to support agricultural production.<sup>16</sup> In addition, an interest in uranium supply to the United Kingdom for weapons manufacture, as part of the Manhattan Project, led to geological investigations by the Department of Mines at Mount Painter in the Flinders Ranges.

Work on the evaluation of coal deposits at Leigh Creek gained greater impetus during the war years with the sinking of ships by the Germans on the eastern coastline of Australia highlighting the risk to continuity of coal supply from New South Wales. The passage of the South Australian *Leigh Creek Coal Act, 1942* authorised the Minister of Mines to mine any seams vested in the Crown at Leigh Creek with funding established for this purpose. Extensive boring activity commenced, and a shaft was sunk in 1944 with a bulk sample sent for metallurgical testing to the laboratory at the South Australia School of Mines. Between 1941 to 1956 there was a continuous drilling programme to define coal seams in four separate basins.

The evaluation of the Leigh Creek coal fields, as a potential replacement for coal imported from New South Wales for the State's electricity generation, consumed a major part of Dickinson's efforts. He viewed the production of coal from Leigh Creek as a central part of the Government's plan for industrial development to supplement the state's position as a source of high-quality iron ore from the Middleback Ranges.<sup>17</sup> The low-grade, sub-bituminous nature of the Leigh Creek coal required extensive test work, particularly related to boiler and furnace design. Engineers were recruited to determine modifications to industrial boilers and the fireboxes of train engines to enable the use of the coal for electricity generation and by the railways.<sup>18</sup>

The delineation and assessment of coal reserves at Leigh Creek was completed during 1950, with mining plans prepared, while subsequent percussion boring during 1951 proved additional reserves. Dickinson visited the United States to investigate open cut mining operations and recommended the use at Leigh Creek of large-scale equipment including draglines.<sup>19</sup> Leigh Creek remained the main source of the State's energy supply, feeding a power station constructed in 1954 by the Government at Port Augusta, with mining of the deposit under the control of the Electricity Trust of South Australia, a body established in 1948 through the nationalisation of a private company.<sup>20</sup>

**Figure 2:** *First consignment of coal from Leigh Creek in 1942.*



Source: Dickinson, Samuel Benson Collection, State Library of South Australia, PRG 1097.

While having direct responsibility to Lyell McEwin as the Minister of Mines (1939-1965), Dickinson was also an adviser and confidant of Thomas Playford, the Premier of South Australia (1938-1965).<sup>21</sup> Dickinson had more experience than anyone else in the thinly resourced department in producing reports and plans on the state's mineralisation. The approach he adopted was novel and drew upon the experience of North American geologists in examining the economic potential of ore bodies. His experience, as well as the appointment of geologists, such as Regg Sprigg and Swiss-trained Dr Bruno Campana, led to an emphasis on regional geological surveys involving mapping and interpretation of mineral deposits, including areas not well-canvassed by mining companies.<sup>22</sup> During Dickinson's tenure as director of the Department of Mines, an expansive programme of mineral evaluation occurred, with a consideration of asbestos and manganese, as well as other minerals, including copper, graphite, mica, quartz crystal, iron pyrites and monazite. The development of a pyrites mine outside of Adelaide provided the basis to establish sulphuric acid production for superphosphate manufacture. Hydrological work led to the construction of the Mannum to Adelaide pipeline, while investigations occurred into clay deposits for the establishment of brickmaking facilities.

**Figure 3:** *Uranium investigation, South Australia. Dickinson centre with Sir Thomas Playford.*



Source: Public Records of South Australia N8822.

**Figure 4:** *Uranium concentrate from Radium Hill being unloaded at Port Pirie.*



Source: Public Records of South Australia N8835.

Dickinson was interested in how the identification and development of the minerals base of South Australia could contribute to economic growth and create employment opportunities, principally through processing and manufacturing ventures. Apart from the attraction of new industries, he recognised the importance of the expansion of existing industries, such as alkali production, cement making and building construction, as well as the utilisation of the lead and zinc smelting facilities at Port Pirie. In the 1948 director's report for the Department of Mines he made a 'plea for intensive development', achieved through the expansion of metallurgical and chemical plants, to enable the establishment of related industries in fertilisers, paint, paper and pulp, explosives, glass and ceramics.<sup>23</sup>

In 1947, the department set up a geophysical section to support the work of the Geological Survey of South Australia. Dickinson strengthened the department's capabilities in the paleontological, mineralogical and petrological disciplines. He facilitated departmental personnel taking overseas visits for investigations, including the development of low-grade coal and iron ore deposits, as well as geological investigations of uranium deposits. He introduced sabbatical leave for technical staff, allowing them to work or study overseas.

Regional exploration, notably for uranium, led to the discovery of various deposits, with Dickinson involved in the evaluation of the Mount Painter deposit and then the

development of the Radium Hill deposit with the intent to supply the Combined Development Agency (CDA), the uranium oxide purchasing body of the United Kingdom and United States atomic energy authorities.<sup>24</sup> The significance of South Australian uranium for defence purposes was apparent from 1944, with a request from the United Kingdom Government to investigate the Mount Painter deposit as a source of uranium oxide. A detailed geological survey was conducted.<sup>25</sup> By February 1945 the United Kingdom Government requested the completion of exploratory programmes on its behalf. Nonetheless, after the cessation of the war and with sufficient encouragement from prior exploration – and with Dickinson’s appreciation of the uses of nuclear energy for civilian purposes – evaluation of uranium mineralisation in the state recommenced.

In 1950 an expanded programme to determine the level of available uranium ore at Radium Hill was underway, with a pilot plant to finalise milling techniques and with the study of nitric acid extraction by the CSIRO. The metallurgical branch formed in 1949 to investigate Radium Hill ore was housed in the South Australian School of Mines, before being transferred to departmental facilities at suburban Thebarton. The establishment of a chemical extraction pilot plant followed.<sup>26</sup> In 1951 Dickinson reported that exploration and evaluation work, including metallurgical and pilot plant flotation tests, were progressing to enable information on the Radium Hill ore body to be provided to the United States Atomic Energy Commission and the British Ministry of Supply.<sup>27</sup> In the same year the *Uranium Mining Act* was passed by the South Australian Parliament. Notably, in August 1951 Sir Thomas Playford and Dickinson visited the United States, leading to a technical mission from representatives of the United States Atomic Energy Commission and an agreement to proceed with purchasing, financing and production arrangements for Radium Hill. In 1952, the CDA entered into an agreement with the Commonwealth and South Australian Governments with loan facilities to finance capital works and a seven-year cost-plus contract for the supply of uranium oxide. As Dickinson observed, ‘The agreement heralded Australia’s entry into uranium mining’.<sup>28</sup>

By 1952, resourcing for the uranium oxide project had been increased with technical staff seconded from the United States Atomic Energy Commission. Construction work at Radium Hill commenced, with the official opening on 10 November 1952, officiated by the Governor General, Sir William Slim. In 1954 production on a larger scale started. It was a significant milestone for the state and a credit to the work Dickinson had overseen in assembling the necessary technical resources to establish Radium Hill as one of Australia’s first sources of uranium oxide production, along with the Rum Jungle operation. The operation involved the establishment of a remote township with educational, health, social and recreation services.<sup>29</sup> Influenced by Dickinson’s views, the South Australian Premier considered Radium Hill part of a longer-term plan for nuclear power development in the state. As such, there was a broader exploration effort for uranium and a concern that the Radium Hill resources were not depleted beyond a certain level.<sup>30</sup>

Dickinson played a central role in establishing research and development functions within the Department. For example, during 1952, a Geological Survey Laboratories

Branch was established, with the former chief analyst at the South Australian School of Mines appointed to take charge. The standing of the branch meant that analytical and consulting services for other mining companies generated fees representing around a third of its expenditure, with work undertaken on behalf of Territory Enterprises for Rum Jungle, as well as the Mary Kathleen uranium projects. The expansion of analytical and laboratory facilities was an enlightened investment in South Australia's technical capabilities.

Nearing the time of his departure from the Department of Mines, Dickinson recognised the unique set of factors that had made possible South Australia's involvement in uranium production, notably the CDA's requirement to obtain uranium oxide from a secure source, even though the cost of production for South Australian uranium was high. These factors meant it would be difficult to continue the Radium Hill operation. While Dickinson contemplated various means of overcoming the impediments to South Australia's continued commitment to the uranium industry, production at Radium Hill ended in 1961. Nonetheless, Dickinson remained an advocate for the State's involvement in the broader nuclear fuel cycle, including nuclear energy production, and returned to promote this area two decades later as an adviser to the South Australian Government.

**Figure 5:** *Ben Dickinson with Sir William Slim (Governor-General), Sir Thomas Playford and Sir Lyell McEwin.*



Source: Dickinson, Samuel Benson Collection, State Library of South Australia, PRG 1097.

The imminent cessation of uranium mining led Dickinson to consider in the late 1950s the future of the research facilities, including the laboratory, chemical, mineralogical, petrological and radiometric services he had played a major role in

establishing. He proposed that these functions be funded on a joint government and private sector basis, drawing on the model of the Waite Agricultural Research Institute in South Australia which served as a centre for agricultural research and development for the government and private sectors. Dickinson and Harold Raggatt (Commonwealth Secretary of the Department of National Development) convinced Playford that instead of being disbanded, the facilities could serve a wider, national function.<sup>31</sup> In 1959 the Australian Mineral Industries Research Association (AMIRA) was established, with the involvement of BHP and Consolidated Zinc, as a central funding body for a new entity, Australian Mineral Development Laboratories (AMDEL), set up in the same year as an independent statutory body with members nominated by the Commonwealth and South Australian Governments and representatives of AMIRA. Dickinson deserves credit for his foresight in retaining this research capability.

**Figure 6:** *Drilling at Iron Knob, Middleback Ranges, South Australia, 1947.*



Source: Dickinson, Samuel Benson Collection, State Library of South Australia, PRG 1097.

Apart from his advocacy for uranium mining, Dickinson held an overwhelming ambition while director of mines for the establishment of an integrated steel industry in South Australia. A remarkable part of Dickinson's role as a senior public servant was his attempt to persuade BHP to take steps to establish a steelmaking presence in South Australia, given its access to a major source of iron ore through the Iron Knob deposits. From 1937, Essington Lewis, as managing director of BHP, had been a supporter of the establishment of a steel industry in South Australia. In that year the *Broken Hill Indenture*

*Act* was passed, obligating the company to establish a blast furnace to produce pig iron. In return, the state provided access to iron ore mineral leases for a period of fifty years. Subsequently, the State Government arranged the construction of a water pipeline from Morgan to Whyalla, completed in 1944. Dickinson wrote in 1950, 'The foundations have now been firmly established for the expansion envisaged by the Broken Hill Proprietary Company Limited and the South Australian Government'.<sup>32</sup> An integrated steel industry was seen as possible within two or three years. Dickinson lobbied BHP to move into steelmaking in the State. He did so in several persuasive and well-researched analyses of the steel industry, and its central role in Australia's economic progress and national defence and, by implication, BHP's tardiness in making its contribution in South Australia despite its privileged position in access to the iron ore resources of the State.

The issue for Dickinson was that he saw little evidence of BHP's commitment to expand its steelmaking presence in South Australia, while all the time the company was drawing on the State's iron ore reserves for steel production at Port Kembla in New South Wales. Dickinson sought the opinion of the Crown Solicitor as to whether BHP may have repudiated Essington Lewis's promise to establish a steel industry in South Australia and, as such, the purpose of the *Indenture Act*.<sup>33</sup> At a meeting with BHP in 1954, Dickinson said that without a commitment to a steel plant, additional leases might not be made available to the company.<sup>34</sup> He also contemplated a change in royalty arrangements and a surcharge on BHP's activities if the company did not give appropriate guarantees to establish a steel industry at Whyalla. In fact, Dickinson wrote that, in 'his considered judgment', the State Government would be 'fully justified' in taking over the leases and iron ore production equipment of BHP in South Australia if it did not provide such guarantees.<sup>35</sup> For a state that had coal production in public ownership and had acquired the operations of a private company involved with the Leigh Creek deposits, this was not empty rhetoric. Dickinson also believed that other sources of capital could be utilised, intimating the potential involvement of non-Australian steel companies, including inviting German steelmaker, Krupp, to be involved in South Australia.<sup>36</sup>

Dickinson contrasted BHP's monopolistic status with that of larger United States steel companies that operated without governmental 'concessions or favour', while in the United States the *Sherman Act* meant that monopoly control of any industry was 'illegal'.<sup>37</sup> Dickinson mused that similar legislation 'may well profit Australian development'.<sup>38</sup> For Dickinson there was a wider principle of the use of national resources for national outcomes, as opposed predominantly for the interests of shareholders. In this regard, he considered that government-sponsored and controlled bodies had a role to play, as exemplified by the Snowy Mountains Hydro-electric Authority, the Joint Coal Board, the Commonwealth Atomic Energy Commission and the River Murray Basin Commission, the charters of which represented national interests by the development of the country's resources. In contrast, the arrangements related to BHP's involvement in South Australia's iron ore resources lacked appropriate powers 'to restrain misuse, direct better use, or promote wise use of these vital resources'.<sup>39</sup> Dickinson proved a thorn in the side of BHP and the company made representations to Playford and McEwin, on more than one occasion, that he be sacked.

Playford wrote to Dickinson in 1958, after he had left the department and when an arrangement had been made with BHP to establish an integrated steel industry in South Australia. Playford observed: 'I thank you ... for the tremendous part that you played at its inception by providing the general idea'.<sup>40</sup> When the Whyalla steelworks were opened in 1965, Dickinson did not receive an invitation; BHP possibly not appreciative of Dickinson's earlier strident advocacy for an integrated steel plant.

From a small backwater department, the Department of Mines became one of the largest and most influential in the state during Dickinson's tenure. The organisational structure included a committee to oversee the Radium Hill operation, the geological survey, a mining branch, mechanical branch and research and development functions. The delineation of coal reserves at Leigh Creek, as well as work to enable the combustion of the coal for power generation and other uses, was progressed by the department Dickinson led. Plans had been advanced to produce sulphuric acid for fertiliser production, while steps were in train for an oil refinery. Extensive drilling had occurred at Iron Knob which facilitated increased iron ore production. Mineral deposits were evaluated, and, in some cases, commercial production established, such as pyrites and gypsum. The research and development branch, set up in large part for testing and treatment of uranium ores, meant South Australia had one of the best-equipped research functions in Australia.<sup>41</sup> In 1956, the final year that Dickinson was a public servant, the total value of minerals produced in South Australia was just less than £18 million compared to £4 million in the 1940s.

### **Mining Executive**

Dickinson subsequently played a major role in the early years of the operations of the Australian arm of the British mining group, Rio Tinto. Its presence had been established in the country in 1954 by the acquisition of a 51 per cent interest in the Mary Kathleen uranium deposit near Cloncurry in Queensland.

In February 1956, The Rio Tinto Mining Company of Australia announced its intention to proceed with the development of the Mary Kathleen deposit. With this underway, the group turned its attention to other mineral opportunities. A local board of directors was established with Blake Pelly, a New South Wales parliamentarian, appointed chairman.<sup>42</sup> John Poole, an English lawyer, was managing director, with the third director a Melbourne solicitor, John Rodd.<sup>43</sup>

Engagement by Poole with Ben Dickinson occurred during 1955. Dickinson's standing as a geologist and mining administrator drew him to the attention of Rio Tinto as a person suitable for the role of evaluating mineral opportunities for the group's expansion in Australia. Dickinson considered seriously the offer to join Rio Tinto. It would return him to a mining company with a commitment to invest substantial funds in mining in the country. Against this, Dickinson considered his departure from a prominent department in the service of South Australia and his association with Sir Thomas Playford. Dickinson recalled at an early meeting with Poole that he 'professed complete ignorance of mining treatment, exploration and all of the identical matters related to mining'.<sup>44</sup> However, discussions in London with the Rio Tinto managing director, Val

Duncan, persuaded him that their ‘ideas of working were in complete harmony’.<sup>45</sup> Duncan, at his persuasive best, conveyed the sweep of his vision for establishing Rio Tinto as a leading mining company in Australia and one that – in accord with Dickinson’s motivations – could make a major contribution to the country’s economic development. Furthermore, for Dickinson:

[Duncan] valued my capacity to evaluate and secure new mining ventures and ... look into the future and foresee the possibilities of tomorrow in advance of others. For my part I admired the courage he had already shown in taking Rio Tinto into uranium mining on a world scale and felt that ... I could bring forward new development possibilities and work out with them ways and means for their accomplishment.<sup>46</sup>

In accepting the position of managing director of Rio Tinto’s Australian exploration function, agreement on several matters was reached. Dickinson would have direct responsibility for the conduct of exploration and business evaluation activities, reporting to London, not the board in Australia. However, ambiguity as to the role of the local board in terms of Dickinson’s responsibilities, as well as the nature of the individuals on this board, had major implications for how Dickinson fulfilled his role. As he recalled in 1960, ‘Little ... did I realize what obstacles and difficulties were to arise within less than twelve months of the start of my active full-time job in October 1956’.<sup>47</sup>

Aged in his mid-forties when he joined Rio Tinto, Dickinson was at the prime of his professional career. His breadth of experience was well-suited to Rio Tinto’s requirements, and he provided the company with a wide-ranging and almost frenetic approach to identifying exploration and mineral opportunities. As Duncan recalled, it was ‘almost dangerous to let him loose’, observing that on occasions he had to play the ‘quaint role’ of calming Dickinson ‘from his more spectacular flights of imagination’.<sup>48</sup>

As was his approach at the South Australian Department of Mines, Dickinson strengthened the resourcing of his area.<sup>49</sup> Harold Jensen was appointed chief geologist, having worked at Lake View and Star mine in Western Australia. Mervyn Wade, a geologist from The Mount Lyell Mining and Railway Company was employed, as was Dr Bruno Campana, a structural geologist, along with Ted McCarthy, a senior geologist from the Bureau of Mineral Resources, and Harold Pearson, recently retired from Minerals Economics Section of the Bureau.<sup>50</sup>

The exploration net was cast widely, with two regional exploration programmes, as well as consideration of opportunities to acquire mineral interests at an advanced stage of evaluation or in production. Under Dickinson, evaluation encompassed manganese, asbestos, iron ore, pyrites, bauxite, molybdenum, mineral sands, gold, coal, fluor spar, wolfram, salt, limestone, industrial diamonds, copper, and tin. Quarrying and construction materials were also evaluated. Dickinson promoted secondary processing, including a potential involvement with Dow Chemical in petrochemical production, as well as liquid fuel production from coal. Activity took place across all states of Australia, as well as in New Zealand, Malaya and Fiji.<sup>51</sup>

A regional exploration programme was conducted from 1957 in western Tasmania for copper and base metals, in conjunction with Electrolytic Zinc. Campana was recruited to run the programme. Another regional programme was undertaken in the Mount Isa and Cloncurry areas. Both entailed a large expenditure although, by 1960, this had not resulted in any commercial discoveries. As part of the activity, Renison Associated Tin Mines NL was evaluated as an acquisition and a means to enter the tin industry. Renison was a small Tasmanian operation although, in Dickinson's view, with the potential for substantial additional ore to be delineated. An inspection was offered, although an option on the leases for testing was not taken up based on a pessimistic assessment from London.<sup>52</sup> This was a missed opportunity given Renison's subsequent significance in Australian tin production.

Dickinson investigated the iron ore deposits at Savage River in Tasmania, as well as in New South Wales, while the deposits at Koolyanobbing in Western Australia were assessed as a basis for Rio Tinto to become a producer of pyrite for sulphuric acid for the manufacture of fertiliser.<sup>53</sup> Dickinson was responsible for arrangements with Lang Hancock and Peter Wright to access mineral opportunities in Western Australia, centred around asbestos and manganese.<sup>54</sup> A heads of agreement was signed on 25 June 1959.

There were numerous disappointments for Dickinson when proposals to evaluate or acquire producing mines were not taken up. This contributed to strained relations with his fellow directors. For instance, in 1957 Dickinson ascertained that the Storeys Creek Tin Mining Company NL was potentially available for purchase. An agreement was made with the company for its acquisition at a defined valuation, and Dickinson sought to assure himself of the reserve position before finalising the acquisition. On the day he had arranged to review the deposit, however, he was forced to inform the Storeys Creek directors that Rio Tinto had changed its mind about the acquisition. As he later recalled:

I was never more humiliated in my life when I had to make a trip to the Mine, meet the Directors of Storey's Creek and tell them that the deal had been called off by London. The Australian Directors stood by unconcerned, not knowing what all this meant. London had ruled against it, but they did not protest. It clearly meant that they did not understand the mining business and were not prepared to examine, let alone fight for an option on a property which had every appearance of a bonanza. They only knew the Mary Kathleen contract and believed that everything had to fall into the pattern of an assured forward market before they could be prepared to move.<sup>55</sup>

Dickinson made representations to London but John Poole, based on advice from the company secretary, believed that the mine would not be profitable in its initial years and no further evaluation occurred.<sup>56</sup> For Dickinson, this reinforced his view that Poole lacked the technical and mining experience to evaluate the investment case for any mining project.

Under Dickinson, Rio Tinto evaluated all the main mineral sands companies operating on the east coast of Australia. A proposal for the acquisition of Associated Minerals Consolidated was made.<sup>57</sup> Dickinson wrote in 1956 to a London colleague that

Rio Tinto should 'definitely [be] interested in entering the rutile field', given its use in titanium metal for military applications.<sup>58</sup> He also recognised that rutile and ilmenite were important feedstocks for titanium pigment production, notably the chloride production route pioneered by DuPont. In Dickinson's view, access to mineral sands provided an opportunity for Rio Tinto to establish a dominant position in a new mineral and achieve a degree of vertical integration, including in pigment production.

London held reservations; mineral sands was a novel mineral for the group. London's lack of overt enthusiasm for mineral sands influenced Poole in writing to Dickinson, expressing his doubts:

The publicity accruing to the Official Opening of M.K.U., the listing of its shares and generally the growing reputation of Rio Tinto in this country are all building up towards the launching of our second Australian venture. Surely that must be something equally splendid and imaginative, not an anti-climax?<sup>59</sup>

After the success in establishing a presence in uranium through Mary Kathleen, the preference was that Rio Tinto's second Australian venture be in a 'traditional base metal of unquestioned stability'.<sup>60</sup> Mineral sands was not pursued and the main opportunities that Dickinson identified formed a major part of the portfolio of the other British mining company, Consolidated Gold Fields (Australia), which expanded its presence in the country during the 1960s.<sup>61</sup>

Rio Tinto considered asbestos deposits in New South Wales but did not proceed beyond an initial evaluation. In Western Australia, prospects were viewed more favourably. Asbestos was of prime interest to Dickinson, with his suggestion that Rio Tinto join forces with CSR in an asbestos mining operation near Wittenoom.<sup>62</sup> London was happy for its Australian arm to be involved in asbestos, but preferred this occur with an experienced partner. Dickinson maintained his optimistic view that Rio Tinto could 'join forces with CSR' and move to a majority equity position.<sup>63</sup> When discussions with CSR failed to progress, Dickinson pursued a plan to establish a second asbestos operation in Western Australia.<sup>64</sup> The agreement with Hancock and Wright provided Rio Tinto with access to tenements considered prospective for asbestos. Hancock and Wright were requested to peg land at Wittenoom Gorge as a potential mine site, while Rio Tinto approached Asbestos Corporation, a Canadian asbestos mining and milling plant operator, for one of its senior geologists to visit Western Australia. Despite initial encouragement that the company might support the establishment of asbestos production in Western Australia, it decided not to take up the opportunity.<sup>65</sup> The interest in asbestos was discontinued.

Dickinson held a positive perspective of the opportunity for a large-scale manganese operation.<sup>66</sup> His confidence was such that Rio Tinto envisaged a purchase price for Hancock and Wright's manganese options of £1.5 million, along with a royalty.<sup>67</sup> At a Rio Tinto board meeting on 24 October 1959, a new company, Australian Manganese, was incorporated. The board of directors was confident that the next, major mining operation after Mary Kathleen Uranium had been identified. Despite the optimism, and a commitment of £188,000 for evaluation activities, in February 1960 it

was decided to abandon work on manganese. Assay results from sample pits showed that the material recovered was low grade, with Dickinson recording the results as a 'set back to ... hopes for an early big new grass roots development'.<sup>68</sup>

In 1958 the copper mining and smelting operations of The Mount Lyell Mining and Railway Company at Queenstown in Tasmania came under consideration. Dickinson had worked during his earlier career in the northwest of Tasmania, involved in geological mapping at Rosebery and Queenstown. A committee formed by Rio Tinto in Melbourne was critical of Dickinson's report on Mount Lyell as a business opportunity. Not wanting to let this matter rest, Dickinson sent his report to London where it received interest from Duncan. In fact, in 1958, the chairman of The Mount Lyell Mining and Railway Company was approached by Duncan with the offer to provide financing to enable the operation to increase production.<sup>69</sup> In the meantime, London technical personnel reviewed the Mount Lyell opportunity. Their view was that more detailed information was required of the size and grade distribution of the ore body before an assessment could be made as to whether the reserves could be mined economically.<sup>70</sup> Mount Lyell remained under consideration but was not pursued as an acquisition.

Dickinson sponsored a study into aluminium in Australia, recognising an opportunity as the industry ranked third in value after iron and steel, and copper production. His interest was associated with the evaluation by other companies of bauxite deposits at Gove in Arnhem Land in the Northern Territory, and at Cape York in Queensland. In 1958 representations were made to The Commonwealth Government to investigate the possibility of acquiring an interest in the Bell Bay plant in Tasmania. Dickinson proposed that Rio Tinto offer to buy the Commonwealth's share and take over the management of the Australian Aluminium Production Commission. London's examination of Dickinson's plan was critical, although the logic of an involvement in aluminium was not dismissed out of hand.<sup>71</sup> Duncan took an interest in aluminium and engaged with Imperial Chemical Industry of Australia and New Zealand, as well as Alcoa International. Rio Tinto's consideration extended to the evaluation of domestic sources of coal supply, with options secured by Dickinson on coal deposits in New South Wales.

Rio Tinto in London, recognising the superior position of Consolidated Zinc and Kaiser Aluminum and Chemical Corporation in terms of their involvement in aluminium in Australia, approached Consolidated Zinc about opportunities for Rio Tinto to participate in their plans.<sup>72</sup> The company's overtures were rebuffed. Consolidated Zinc and Kaiser jointly acquired the Bell Bay facility and established Comalco Industries in December 1960. These activities put an end to Rio Tinto's plans in aluminium production and with it another bold business venture conceived of by Dickinson.

Dickinson's investigation of an involvement in the coal sector commenced in 1958 and involved options over coal properties in New South Wales. A Coal Committee was established in Rio Tinto, with the investigation of coal opportunities looked upon in a favourable light.<sup>73</sup> However, it may not have assisted Dickinson's standing that expenditure of £85,000 for an option on one set of coal properties was declared abortive

and written off as a loss.<sup>74</sup> His proposal to acquire J & A Brown & Abermain Seaham Collieries failed to advance. Dickinson engaged with Howard Smith, which owned Caledonian Collieries, for a merger of its interests in various New South Wales fields. Hesitancy by his fellow directors meant the opportunity did not progress, curtailing – in Dickinson’s view – Rio Tinto’s entry into the coal sector and the ‘loss of several millions [of pounds]’.<sup>75</sup> The Clinton Collieries in the Camden district of New South Wales came under consideration in 1959, with Rio Tinto acquiring the company in 1961, the year after Dickinson had left Rio Tinto.

The association with Hancock and Wright presented the opportunity for an involvement in the Mount Goldsworthy iron ore resource. Dickinson viewed the resource as valuable, but small, with little work undertaken on this opportunity, not least given restrictions on the export of iron ore. The major mineral opportunity in iron ore that Dickinson had an indirect role in presenting to Rio Tinto came about through Lang Hancock and the evaluation conducted by Bruno Campana of limonite ore deposits in the Hamersley Ranges. The deposits attracted the interest of Consolidated Zinc chairman, Maurie Mawby. In the lead up to the 1962 merger of Rio Tinto and Consolidated Zinc, a regional exploration programme in the vicinity of the deposits, under the direction of Consolidated Zinc, discovered what became known as the Mount Tom Price deposit. The limonite deposits introduced by Hancock became inconsequential in the context of the development of the high-grade hematite deposits which formed one of the main underpinnings of Australia’s iron ore export industry. Roy Wright, Rio Tinto’s London deputy chairman, described Rio Tinto’s arrangement with Lang Hancock ‘as one of the most significant in the history’ of the company in Australia.<sup>76</sup> Dickinson can lay no direct claim to the discovery of Mount Tom Price. However, without his engagement of Hancock in the 1959 royalty agreement and the subsequent investigation undertaken by Campana—at Dickinson’s direction—which in turn led to Consolidated Zinc’s wider regional survey of iron ore resources, what became CRA may not have participated in the Mount Tom Price iron ore development.

The initial thrust of Dickinson’s exploration and business evaluation efforts was made while construction efforts were underway for the Mary Kathleen Uranium operation and during its initial years of production from 1956. It was expected that Mary Kathleen Uranium would provide a revenue and cash flow stream until at least 1968. Circumstances changed when higher uranium oxide production, combined with indications that initial contracts would not be renewed, meant that Rio Tinto’s principal source of revenue would cease three to four years earlier than planned. Pressure on the company to accept public shareholding reinforced that Rio Tinto had to establish a portfolio that extended beyond Mary Kathleen. Yet, most of the mineral opportunities Dickinson had presented had been discarded and others, such as Mount Lyell, remained problematical to pursue. In their place, opportunities in construction materials and brickmaking were identified as the basis for the diversification of the company’s revenue.<sup>77</sup>

Dickinson held a scathing view of the competency of his fellow directors. His inability to progress any of the business opportunities he presented created increasing

frustration and contributed to a deterioration in relationships. His fundamental concern was that with the exception of A.J. Keast, his fellow directors did not possess the experience to oversee the development of a mining company. He wrote in 1960, at the time of his departure from Rio Tinto:

The plain fact of the matter was that none of the three men who took upon themselves the responsibility of controlling and administering Rio Tinto Mining Company of Australia had any mining in their blood. They knew nothing of the mining business or the organization needed to run a mine. The organization they set up comprised a group of accountants, secretaries and administrators who likewise had no knowledge of the business and were there to act as glorified servants to satisfy the whims and fancies of this upper hierarchy of Directors.<sup>78</sup>

Those appointed to Rio Tinto, in Dickinson's view, displayed 'a tragic record of indecision, impotence and lost opportunities'.<sup>79</sup> His assessment was:

The tragedy, however, of my endeavours is in the metalliferous and coal mining and chemical field where R.T. has lost opportunities worth many more millions. Men without knowledge or understanding were chosen as the vetting authority ... holding on grimly to the control of R.T. destiny, and living off the fat of Mary Kathleen which clearly now cannot go on for ever.<sup>80</sup>

In January 1960, expenditure control measures for exploration were put in place, and Dickinson's exploration and business evaluation efforts began to be cast in a negative light. One London executive referred to Dickinson's 'dragon-fly' approach to exploration.<sup>81</sup> On 27 July 1960, Dickinson was advised by the Australian board of directors that his services were no longer required. His employment was terminated.<sup>82</sup> In fact, the board of directors of Rio Tinto Management Services, chaired by John Rodd, had met the previous day. Based on the consideration that Dickinson had left for overseas without approval and against the express directions of the deputy managing director, this was sufficient rationale for his employment to be terminated effective 18 July. Furthermore, an extraordinary general meeting of shareholders was called thirty minutes after the commencement of the board meeting to remove Dickinson from various director roles and rescind his financial authorities.<sup>83</sup> Dickinson wrote to Duncan that he was deeply distressed, believing that the termination of his employment, and it being made known to others before being advised to him, was 'not in keeping with the code of ethics one would expect in an organization such as Rio Tinto.'<sup>84</sup> Dickinson put the matter in the hands of a solicitor, with a settlement in the form of a retirement payment of £9,000.

### **Other interests**

After his departure from Rio Tinto, Dickinson's employment opportunities in mainstream mining companies were truncated, leading him to become involved in what can be considered second-tier ventures as a consultant and in entrepreneurial activities.

### ***Mineral exports to Japan***

In 1960 Dickinson formed an association with Sir Arthur Fadden and Frank Duval for the export of Mount Goldsworthy iron ore to Japan.<sup>85</sup> This venture did not progress. Duval

had established a company in Japan, and using Dickinson's knowledge of mineral opportunities, direct mineral supply arrangements to Japan were pursued. Dickinson became involved in the formation of a company, Frances-Creek Iron Mining Corporation Pty Ltd in 1961 to supply iron ore to Sumitomo Metal Industries, with the later development of the deposit, as well as work on the Savage River deposit in Tasmania.

### ***Gove bauxite***

Through involvement with Duval Holdings, Dickinson was responsible in 1961 for securing a prospecting permit for bauxite at Gove in the Northern Territory with the intention to supply several Japanese companies planning to establish an aluminium smelter.<sup>86</sup> Exploration access was sought in an area which formed part of the Arnhem Land reserve, close to the Yirrkala Methodist Mission. As consultant mining engineer and geologist to Duval's company, Dickinson presented a programme of drilling to the Northern Territory authorities, with an expectation that a development plan could be submitted within eighteen months, followed by commercial production, bauxite exports from 1965 and the later construction of an alumina plant.<sup>87</sup> By July 1961, the Commonwealth Department of Territories, through its minister, Paul Hasluck, granted the Duval entity which Dickinson represented, Gove Bauxite Corporation, the right to prospect for a period of eighteen months.

A fundamental issue arose when ore reserve modelling determined that overall reserves were lower than initial estimates while access would be required within a radius of two miles of the mission settlement to recover the higher-grade proportion of the ore body.<sup>88</sup> Based on previous access arrangements, mining was not permitted to occur within a two-mile radius of the mission. Dickinson's representations to the Administration conveyed that it was essential to gain access to the high-grade ore within this area to meet its requirements for the export of bauxite.<sup>89</sup> The situation was resolved by advice from the Northern Territory Director of Welfare who believed mining within a 1.5 miles radius would be unlikely to have a significant impact on the Aboriginal population in terms of its agricultural and pastoral operations. While a senior representative of the Methodist Overseas Mission wanted the retention of the two mile radius, after discussions with the Minister, Paul Hasluck, it was determined that a one mile radius, or the perimeter of the mission fence line (whichever was the greater) would be applied.<sup>90</sup> Any work in an area less than two miles would first require the approval of the Administrator, while the mission would receive compensation in cash and/or in kind, apart from the royalty arrangements for mining activity.<sup>91</sup>

Within eighteen months of the lease being granted, Dickinson engaged with the French aluminium company, Pechiney, and indicated to the Australian Government that Gove Bauxite Corporation was prepared to join with this company for the purposes of undertaking a large-scale development in the Northern Territory.<sup>92</sup> Pechiney committed to an alumina plant before the end of 1969, while the original undertaking to export 10 million tons of bauxite over 18 years, no later than March 1965, was confirmed.<sup>93</sup> In February 1963 Gove Bauxite Corporation was issued with a special mining lease,

encompassing an area of 57 square miles, which was acquired by a Pechiney subsidiary company, Gove Mining and Industrial Corporation.<sup>94</sup>

The project offered the prospect of a major industrial development in the Northern Territory, encompassing the potential employment of 800 people and supporting a population of 3,000. It, along with Comalco's development of the Weipa bauxite deposit and alumina refinery at Gladstone, Queensland, and Western Australian bauxite feeding a refinery at Geelong, offered the prospect of Australia becoming a leader in the aluminium industry.

The presence of marker pegs on the outskirts of the Yirrkala mission alerted the mission superintendent to the prospect of mining activity, and with this concerns that the Aboriginal population had not been consulted about the excision of a part of the reserve land nor the potential for mining close to the settlement. The situation at the time was that reserves for the use and benefit of Aborigines did not entail title to this land, with the Minister for Territories having the power to allow prospecting and mining on reserves. Local concerns found a broader political and public reception, manifested in the presentation of a bark petition to the House of Representatives on 28 August 1963.<sup>95</sup> This historic document contended that land for mining had been excised without explanation to the Aboriginal people, that administration officers had not conveyed their concerns to the Government in Canberra, and that places sacred to the Yirrkala people would be excised and that their needs and interests ignored.<sup>96</sup>

A Select Committee was formed to investigate the grievances of the Yirrkala people, with its report tabled in Parliament on 29 October 1963.<sup>97</sup> The Select Committee's findings determined that there was no obligation on the part of the Methodist Mission to inform the Aboriginal inhabitants of government policy and that, while the Administration apparently thought the decision had been communicated to the Aboriginal population, the absence on leave of the chief welfare officer and lack of proficient linguists at an earlier meeting with representatives of the Yirrkala population, may have resulted in the 'failure in clear communication'.<sup>98</sup> Measures, such as integrated housing arrangements for the township, compensation in the form of land grants and agricultural training and, most radically in the context of Northern Territory laws, that the first £150,000 in royalties be allocated to meet the capital requirements of the Yirrkala people, were made by the Committee.<sup>99</sup> In effect, the proposals made by the Select Committee endorsed future mining development, and an associated township, as an opportunity to advance assimilation policies and provide education, training and employment opportunities to part of the Aboriginal population.<sup>100</sup> As it transpired, the Pechiney subsidiary company that Dickinson represented did not undertake mining at Gove.

Dickinson, as the representative of the company involved with the mineral leases, was an unwitting participant in one of the early public policy considerations of the access and use of land on which an Aboriginal population was living.<sup>101</sup> Like many public figures of his era, Dickinson was an advocate for national benefits to be derived from the development of the country's mineral resources. He did not agree then – nor later – that

special rights be provided to one part of the population, in this case the Aboriginal population, to determine the use of mineral resources or to receive a disproportionate financial benefit from their exploitation.

British Aluminium and Reynolds Metals held the main lease area on Gove. By May of 1963, the Government determined that the lease be surrendered. Several companies applied for the lease which the Bureau of Mineral Resources estimated contained the largest proportion of Gove's bauxite reserves. In September 1963, Nabalco (North Australian Bauxite and Alumina Company) was granted the lease.<sup>102</sup> Its involvement, and control of the main ore reserves, in conjunction with Comalco's plans for an alumina refinery at Gladstone, changed the landscape for Pechiney. By April 1964, Gove Mining and Industrial Corporation was making representations to the Northern Territory Administration that not only would the reserves from its leases not support an alumina refinery, but that it was having difficulties in securing sales arrangements for bauxite to export markets. Accordingly, it asked to be relieved of its obligations to commence bauxite exports in 1965.

Engagement had occurred as early as 1960 with Comalco in relation to a long-term alumina supply arrangement for Pechiney. By 1963 Pechiney was pessimistic, based on its Gove deposits, about its ability to export to Japan and by October 1963 agreement was reached for a capital contribution to Comalco's alumina facility at Gladstone in return for the supply of alumina. In effect, Pechiney swapped its rights at Gove for an equity participation at Gladstone and became the only new foreign entrant to the Australian aluminium market not to have its own source of domestic bauxite supply. The mineral leases at Gove were surrendered and granted to Nabalco in May 1966.<sup>103</sup> This company undertook bauxite mining at Gove, with the companies that Dickinson had represented playing no further role in the area.

### ***Other ventures***

Subsequently, through a company, Southern Enterprises, Dickinson was involved in the investigation of gypsum deposits in South Australia, with the leases ultimately transferred to BHP. Southern Enterprises also undertook work for a French petroleum company, investigating markets for gas supply from the Mereenie gas field in the Northern Territory. The DAWM syndicate of which Dickinson was a founder and participant (and which included South Australian bookmaker, Bill Waterhouse) was involved in exploration for nickel in the Lefroy area of Western Australia with BHP and Inco taking an option over its lease.<sup>104</sup> In 1966, Dickinson was appointed project development manager of Daniel K. Ludwig's Clutha coal fields venture, with Clutha Development becoming the largest exporter of coal from New South Wales, before the operation came under the ownership of BP and Western Mining Corporation. In 1972, Clutha planned the closure of its South Clifton Colliery. Dickinson with three associates formed Mining and Metals Corporation and, after raising finance, reopened the mine in 1973: it operated successfully for several years and was a lucrative financial investment for Dickinson.

### **Advisory work**

Dickinson returned to live in South Australia in the 1970s with his prime responsibility from 1975 to 1983 related to the State's investigation of potential involvement in uranium enrichment. Dickinson's renewed engagement with uranium policy as an advisor was in the context of work already underway at the State and national levels. In 1972, a study had commenced under the auspices of the Australian and French Governments for a uranium enrichment plant in Australia to produce uranium hexafluoride.<sup>105</sup> In parallel with this work, AMDEL, with the co-operation of the South Australian Department of Mines, undertook an examination of sites for a plant. In 1973 the Australian Atomic Energy Commission joined the Association for Centrifuge and Enrichment, of which Japan was a member. This allowed engagement in relation to access to centrifuge equipment. In December 1974, a South Australian Uranium Enrichment Committee was established, with Dickinson to become an adviser and its deputy chairman. A report presented to the Cabinet of the South Australian Government in April 1975 asserted that Australian uranium was destined to play a role in the development of nuclear energy, presenting an opportunity for South Australia to construct a plant for uranium hexafluoride production for export and, potentially, for domestic use in the development of nuclear power.<sup>106</sup> Dickinson's work led to the proposal for a joint venture arrangement involving Urenco-Centec – an international organisation established under the auspices of several European governments, the South Australian Government, overseas companies likely to purchase the product, as well as an Australian industrial company, of which BHP was the favoured choice.<sup>107</sup> The Uranium Enrichment Group recommended a hexafluoride plant at Redcliff on the upper Spencer Gulf. The economics for a plant were viewed as viable and the risks manageable. The committee's findings were provided to the Federal Government in May 1975 and before the end of the year the South Australian Government was involved with the Australian Atomic Energy Commission in work on centrifuge enrichment with Urenco-Centec.

In 1979 the Premier of South Australia, Don Dunstan, undertook a trip to Europe, designed to investigate the latest international developments in nuclear energy as a means of assisting the South Australian Government determine its stance on uranium mining and treatment. Dickinson accompanied Dunstan. On 5 February 1979, Dunstan announced that his government would not proceed with uranium mining or enrichment, unconvinced that the safety of involvement in the nuclear fuel cycle could be assured.<sup>108</sup> In contrast, Dickinson's report on the visit contended that there was 'unanimity' amongst those consulted in the uranium industry that mining and the treatment of uranium could proceed, subject to the application of stringent international safeguards.<sup>109</sup> Further, an enrichment facility, with multi-country involvement, was considered commercially feasible.<sup>110</sup>

Dickinson's disappointment with the South Australian Government's failure to grasp this opportunity for an involvement in the nuclear fuel cycle would be matched by his disappointment with how the Commonwealth managed the subsequent formulation of uranium policy. In January 1977 the Fraser Government announced a study to determine

the feasibility of establishing a uranium enrichment industry in Australia. Despite South Australia's extensive work, the Commonwealth largely excluded its involvement.<sup>111</sup> The responsibility for the study was given to BHP, Western Mining Corporation, Peko-Wallsend and CSR. Dickinson expressed concerns about the exclusion of the South Australian Government, not least given its expertise and expenditure in the area.<sup>112</sup>

The private sector group progressed commercial and technical arrangements with the overseas bodies that the South Australian Government had had relationships with, a situation which Dickinson considered 'brought South Australia's activities virtually to a dead end.'<sup>113</sup> This was despite the chairman of the South Australian enrichment committee having written to BHP and CSR in 1976, and Dickinson informing the companies of the nature of its work.<sup>114</sup> As Dickinson wrote:

For companies of the stature of BHP and CSR not to have informed South Australia that they were double dealing ... on the one hand and rendering lip-service to the understanding that they would remain free to negotiate with South Australia is a sad reflection of their business ethics ... Had South Australia been advised the course of its whole planning of a South Australian industry would have changed.<sup>115</sup>

It would have been galling to Dickinson that the private sector group reported in 1982 that uranium enrichment in Australia was feasible, using Urenco-Centec centrifuge technology that the South Australian Government committee had determined as appropriate five years earlier, with sites identified including in South Australia.<sup>116</sup>

Dickinson's views firmed in relation to the opportunity for enrichment and processing of uranium with the discovery of the Olympic Dam deposit.<sup>117</sup> The construction of a uranium enrichment plant was viewed as likely to be comparable in magnitude and potential economic benefits to the Snowy Mountains hydro-electric scheme.<sup>118</sup> Despite these expectations, and the extensive work undertaken, the state's plans for involvement in uranium enrichment ended with the election of the Hawke Labor Government in 1983, notwithstanding its three mines policy allowed uranium mining from Olympic Dam.<sup>119</sup>

Apart from his involvement in uranium enrichment matters, Dickinson was an adviser to the Pipeline Authority of South Australia, the Cooper Basin Development Committee and the Natural Gas Supplies Review Committee, as well as providing advice to the minister for mining and energy on a range of matters including methanol and petrochemical production, and royalty and indenture legislation arrangements for the Olympic Dam project. In 1977 Dickinson was involved in a minerals assessment of the Middleback Ranges for BHP, although BHP terminated the project before its completion. Dickinson remained an advocate for a variety of causes, including the introduction of electric arc furnace technology at Whyalla. He was a commentator on issues, including viewing the transfer of Crown lands to Aboriginal ownership in the Northern Territory as a national calamity, believing, like many mining men of his generation, 'that ... resources must not be permitted to lie in a state of unproductive idleness', with minerals playing 'an indispensable part in ... modern civilisation ... to be exploited ... for the benefit of

all Australians'.<sup>120</sup> Dickinson's directorships included North Bulli Collieries and Burmine Ltd, a gold mining company in Western Australia.

### **Assessment**

Ben Dickinson was an important and varied contributor to Australia's mining sector. An economic geologist, he applied his training and professional experiences to his work at the South Australian Department of Mines. He was a vigorous, capable, technically proficient public servant in a state which, despite a conservative coalition government, was prepared to innovate and, if necessary, assume powers the preserve of the private sector. As a nationalist, this suited Dickinson. Dickinson's appreciation that uranium could provide a basis for electricity generation to replace the reliance on the state's coal resources, despite the future role of gas, displayed foresight and laid the foundations for later work on uranium enrichment. Dickinson was a bold public servant who saw his role contributing to the industrialisation and economic development of South Australia. In this regard, he established a professional and well-equipped department which represented and advanced the state's interests. He brought a major mining operation, Radium Hill, into commercial production. He was an advocate, an enthusiast and a man who believed outcomes were important. His role in advocating that the resources of South Australia be used for economic development, particularly through processing activities, found its most forceful expression in the pressure he applied to BHP to commit to steelmaking in South Australia.

In Dickinson, Rio Tinto gained the services of a knowledgeable, experienced and energetic mining professional. It was a lost opportunity for Rio Tinto, a reflection of an ill-equipped directorial structure in Rio Tinto Australia, and an unfortunate truncation of Dickinson's career, that the mineral opportunities he presented did not result in Rio Tinto establishing a broader portfolio of minerals businesses beyond Mary Kathleen Uranium and an involvement in road construction materials and brick making.

Dickinson's role as an adviser to the South Australian Government in its consideration of uranium enrichment, was wide-ranging. In part due to his contribution, the state was well advanced in access to the necessary technical capabilities, supplementing its abundant uranium resources, to be a prime contender for involvement in nuclear enrichment; an opportunity that was ultimately truncated by Federal political determinations.

Dickinson, as he described himself, was a buccaneering character. He was prepared to pursue outcomes he considered important, even if he was occasionally combative in his relationships with colleagues, most evident during his period with Rio Tinto. His outspokenness probably limited his opportunities later in his career for senior executive roles and directorships of Australian mining companies. Yet, Dickinson's career was unusual in its breadth and diversity, and he was a noteworthy contributor to the development of the Australian mining sector over four decades.

Dickinson was knighted in 1980 for his contribution to Australian mining. He died in South Australia in 2000 at eighty-eight years of age.

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## Endnotes

<sup>1</sup> For family details, see Janet Scarfe, 'Dickinson, Ruby Droma', (posted in 2016), East Melbourne Historical Society website, [https://emhs.org.au/biography/dickinson/ruby\\_droma](https://emhs.org.au/biography/dickinson/ruby_droma).

<sup>2</sup> William N. Oats, 'Clemes, Samuel (Sammy) (1845-1922)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/clemes-samuel-sammy-5683/text9603>, published first in hardcopy 1981.

<sup>3</sup> These were Scotts College in Wellington and St. Andrews College in Christchurch. Scarfe, 'Dickinson, Ruby Droma', East Melbourne Historical Society website.

<sup>4</sup> 'Rose, Walter John (1885-1952)', Encyclopedia of Science and Innovation, accessed 2 September 2025, <<https://www.eoas.info/biogs/P001796b.htm>>.

<sup>5</sup> For example, the Secretary of the Department of the Interior made a Cabinet submission in November 1933 suggesting a comprehensive survey of the 'mineral belt' of the Northern Territory. H.C. Brown, Department of the Interior, The Minister, Question of Mining Possibilities in the Northern Territory, 3 November 1933, Cabinet Submission, National Archives of Australia [hereafter NAA], A2694.169.

<sup>6</sup> B.E. Kennedy, 'Gepp, Sir Herbert William (Bert) (1877-1954)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/gepp-sir-herbert-william-bert-6298/text10861>, published first in hardcopy 1981.

<sup>7</sup> Sir Ben Dickinson, 'Contribution of the Geological & Geophysical Survey of Northern Australia', in D. F. Branagan, G.S. Gibbons and K.L. Williams (eds), *Geological Mapping of Two Southern Continents. The First Edgeworth David Day Symposium May 1988. The Second Edgeworth David Day Symposium June 1989*, The Edgeworth David Society, Department of Geology and Geophysics, University of Sydney, January 1991, pp. 49-50.

<sup>8</sup> See Robert Porter, 'William Sydney (W.S.) Robinson', *Journal of Australasian Mining History* (hereafter *JAMH*), vol. 22, 2024, 21 pp. 61-82.

<sup>9</sup> *Ibid.*, pp. 61-62.

<sup>10</sup> Bruce Webb, 'Geological Mapping – The South Australian Story', in Branagan, Gibbons and Williams (eds), *Geological Mapping of Two Southern Continents*, pp. 26–27.

<sup>11</sup> See 'Hugh Exton McKinstry (1896-1961)', [https://miningeducationfoundation.org/Hugh\\_McKinstry](https://miningeducationfoundation.org/Hugh_McKinstry)

<sup>12</sup> Bernard J. O'Neil, 'In Search of Mineral Wealth: The South Australian Geological Survey and Department of Mines and Energy to 1944', Master of Arts Thesis, Department of History, University of Adelaide, March 1983, pp. 274-275. O'Neil indicated that Dickinson gained his position in the department after two prior candidates selected for the role withdrew. Bernard O'Neil, *In Search of Mineral Wealth: The South Australian Geological Survey and Department of Mines to 1944*, Department of Mines and Energy, Adelaide, 1982, p. 202.

<sup>13</sup> See Bernard O'Neil, 'Ward, Leonard Keith (1879–1964)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/ward-leonard-keith-11961/text21439>, published first in hardcopy 2002.

<sup>14</sup> D.P. Mellor, *The Role of Science and Industry. Australia in the War of 1939–1945*, Series Four, Civil. Volume V, Australian War Memorial, Canberra, 1958, p. 97.

<sup>15</sup> Dickinson's work on copper was reflected in the publication S. B. Dickinson, *The Structural Control of Ore Deposition in Some South Australian Copper Fields*, South Australian Department of Mines, Geological Survey, Bulletin No 20 and Bulletin No 21, Government Printer, Adelaide, 1942 and 1944.

<sup>16</sup> Interview with Sir Ben Dickinson by Barry Cooper, 4 April 1984 for the Department of Mines and Energy Oral History, p. 1, OH 89/26, J.D. Somerville Oral History Collection, Mortlock Library of South Australia.

<sup>17</sup> *South Australia Annual Report of the Director of Mines and Government Geologist for 1947 with Appendix*, Government Printer, Adelaide, 1948, p. 13.

<sup>18</sup> Industry Commission, *Inquiry into the Australian Black Coal Industry*, The South Australian Black Coal Industry. Submission by the Department of Primary Industries and Resources, South Australia, December 1997, pp. 1-5.

<sup>19</sup> S.B. Dickinson *Report on Some Recent Developments in Open Cut Mining Operations in the United States (With Reference to Possible Applications at Leigh Creek)*, Geological Survey of South Australia, Department of Mines, Adelaide May 1952 (monograph, State Library of South Australia).

<sup>20</sup> R.K. Johns, 'Coal in South Australia', in D.F. Branagan and K. Williams (eds), *Coal in Australia*, Edgeworth Society, Department of Geology and Geophysics, Sydney, September 1999, p. 72.

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<sup>21</sup> P.A. Howell, 'Playford, Sir Thomas (Tom) (1896-1981)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/playford-sir-thomas-tom-15472/text26686>, published first in hardcopy 2012; Judith Raftery, 'McEwin, Sir Alexander Lyell (1897-1988)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/mcewin-sir-alexander-lyell-15104/text26305>, published first in hardcopy 2012.

<sup>22</sup> Drawn from Interview with Sir Samuel Dickinson conducted by Bernard O'Neil, 19 January 1990, Department of Mines and Energy Oral History Program, J.D. Somerville Oral History Collection, State Library of South Australia, Tape 2. See also Colin Harris, 'Sprigg, Reginald Claude (Reg) (1919-1994)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, <https://adb.anu.edu.au/biography/sprigg-reginald-claude-reg-19112/text30685>, published online 2018.

<sup>23</sup> *South Australia Annual Report of the Director of Mines and Government Geologist for 1947 with Appendix*, Government Printer, Adelaide, 1948, p. 22.

<sup>24</sup> See Bernard O'Neil "'National heroes not national villains": South Australia and the Atomic Age', in Bernard O'Neil, Judith Raftery & Kerrie Round (eds), *Playford's South Australia*, Association of Professional Historians (SA), Adelaide, 1996, pp.155-176.

<sup>25</sup> S.B. Dickinson et al., Uranium Deposits in South Australia, South Australia Department of Mines Geological Survey, Bulletin No. 30, 1954, p. 8.

<sup>26</sup> See Bernard O'Neil, *Above & Below: The South Australian Department of Mines and Energy 1944-1994*, South Australian Department of Mines and Energy, Special Publication No. 10, p. 93.

<sup>27</sup> *South Australia Annual Report of the Director of Mines and Government Geologist for 1951*, Government Printer, Adelaide, 1952, pp. 10 and 17.

<sup>28</sup> Sir Ben Dickinson, Uranium in South Australia Past, Present and Future, March 1984, pp. 26-27, State Records of South Australia, Series GRS/10679, Unit 5, 00049.

<sup>29</sup> Kevin R. Kakoschke, 'Radium Hill: Bindi to Boom Town', *JAMH*, Vol. 5, September 2007, pp. 135-149.

<sup>30</sup> See Annexure A, Thomas Playford, Premier to The Right Honourable the Prime Minister, 21 March 1952, p. 1, NAA, A1209, 1957/4196 Part 1.

<sup>31</sup> O'Neil, *Above & Below*, p. 146. For a biographical profile of Raggatt see J.M. Rayner and I.W. Walk, 'Harold George Raggatt 1900-1968', Australian Academy of Sciences, (original publication 1972), <https://www.science.org.au/fellowship/fellows/biographical-memoirs/harold-george-raggatt-1900-1968>.

<sup>32</sup> *South Australia Annual Report of the Director of Mines and Government Geologist for 1950 with Appendix*, Government Printer, Adelaide, 1952, pp. 29-30.

<sup>33</sup> Samuel Dickinson, The Whyalla Steel Plant Story. A Public Servant's Experience (1941-1958) (A Story of Restrained Public Service), pp. 4-5, in Dickinson, Samuel Benson Collection, State Library of South Australia, PRG 1097, Series 2.

<sup>34</sup> Leases etc., South Australia, Notes of Discussion Held in Managing Director's Office on Friday, 30 July 1954, 2 August 1954, Dickinson, Samuel Benson Collection, State Library of South Australia, PRG 1097.

<sup>35</sup> S.B. Dickinson, 'The Establishment of an Integrated Steel Industry in South Australia', in *South Australia Annual Report of the Director of Mines and Government Geologist for 1953 with Appendix*, Government Printer, Adelaide, 1955 p. 25.

<sup>36</sup> Interview with Sir Ben Dickinson by Barry Cooper, 4 April 1984, Department of Mines and Energy Oral History, State Library of South Australia, p. 4.

<sup>37</sup> *South Australia Annual Report of the Director of Mines and Government Geologist for 1947 with Appendix*, p. 22.

<sup>38</sup> *Ibid.*

<sup>39</sup> *Ibid.*

<sup>40</sup> S.B. Dickinson from Thomas Playford, 12 March 1958, in Dickinson, Samuel Benson Collection, State Library of South Australia, PRG1097/5.

<sup>41</sup> *South Australia Annual Report of the Director of Mines and Government Geologist for 1955 with Appendix*, Government Printer, Adelaide, 1956, p. 31.

<sup>42</sup> Blake Raymond Pelly (1937-1990) was educated at the University of Cambridge and University of Marburg, Germany, gaining qualifications in engineering. He joined a British company, the forerunner to British Gas, as a staff engineer. He moved to Australia and served as aide-de-camp to the Governor of New South Wales before enlisting in the Royal Australian Airforce, with military service including as commander of the 451<sup>st</sup> Squadron, director of Tactical and Operational Requirements, and director of Operations for the Royal Australian Air Force Headquarters between 1945 and 1946. When recruited as chairman to Rio Tinto Mining Company of Australia in 1956 he was a member of the New South Wales Legislative Assembly. Pelly's direct business dealings and knowledge were limited and more so when it came to mining.

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<sup>43</sup> John Rea Poole (1912-2000) was born in England and educated at the University of Cambridge, gaining a BA and MA, and working as a solicitor in England. In 1948, Poole settled in Australia, where at the Sydney suburb of Manly he established a legal practice. Poole represented a client who had been bashed by police officers at the Darlinghurst police station and threatened to take civil action for assault against the officers. A royal commission followed in 1954, at which Poole came under intensive questioning, including being threatened with jail for contempt of court. The files of his legal practice were seized and his ability to practice law in effect ruined. Poole returned to England in 1954. He was introduced to Duncan who asked him whether he would be willing to return to Australia to become Rio Tinto's first Australian managing director with prime responsibility for bringing the Mary Kathleen uranium mine into production. Early Days of Rio Tinto in Australia, Notes prepared for Sir Val Duncan by Eric Linkletter, p. 17, University of Melbourne Archives [hereafter UMA] 1990.0081, Unit 34. Rodd, a barrister, was a partner in Arthur Robinson & Co and had played a role in acting for Rio Tinto London from 1953 with his office in Collins Street initially serving as Rio Tinto's de facto Australian office. See Robert Porter, *Rio Tinto in Australia. The Origins and Formation of an International Resources Company. 1954-1995*, Connor Court Publishing, Redlands Bay, 2023, pp. 38-39.

<sup>44</sup> Personal Account of my employment with Rio Tinto Australia by Ben Dickinson. Dated 18.8.1960. Notes by B. O'Neil 1990, p. 2, Samuel Benson Collection, State Library of South Australia, PRG 1097, Series 1-2.

<sup>45</sup> Notes provided by Sir Ben Dickinson on Rio Tinto Australian Exploration Pty Ltd, 18 August 1960, p. 1, in Interview with Sir Ben Dickinson in Adelaide, 4 August 1982, by Dr A.F. Seldon, UMA 1984.0076, 1 O/6.

<sup>46</sup> Ibid.

<sup>47</sup> Ibid.

<sup>48</sup> Early Days of Rio Tinto in Australia, p. 22.

<sup>49</sup> R.S. Matheson was already employed by Rio Tinto, having been appointed for the company's initial uranium exploration activities. Kalgoorlie-born and educated at UWA, Matheson was senior geologist with the Geological Survey of the Western Australian Department of Mines (1935-47) and then supervising geologist with the Bureau of Mineral Resources (1948-54), before his appointment as exploration manager with Rio Tinto Australia. Matheson, Robert Sackville (1913-), Biographical Notes, Council of Heads of Australian Herbaria, <https://www.anbg.gov.au/biography/matheson-robert-sackville.html>.

<sup>50</sup> Notes provided by Sir Ben Dickinson on Rio Tinto Australian Exploration Pty Ltd, pp. 8-9.

<sup>51</sup> Oil exploration in Papua New Guinea was also contemplated, although this was at the initiative of his fellow-directors and not supported by Dickinson.

<sup>52</sup> Interview with Sir Ben Dickinson, 4 August 1982, p. 11.

<sup>53</sup> S.B. Dickinson, 10 March 1957, UMA 1988.0085, Unit 48.

<sup>54</sup> Interview with Sir Ben Dickinson in Adelaide, 4 August 1982, p. 3.

<sup>55</sup> Notes provided by Sir Ben Dickinson on Rio Tinto Australian Exploration, pp. 21-22.

<sup>56</sup> Storeys Creek Tin Mining Company NL was purchased by Aberfoyle in the late 1950s. This mine was Tasmania's largest producer of wolfram and an important producer of tin.

<sup>57</sup> S.B. Dickinson, Managing Director to Chairman and Directors of R.T.A.E., 28 January 1959, UMA1987.0058, Unit 10.

<sup>58</sup> Letter to R.H. Hood, 30 August 1956, UMA 1987.0068, Unit 9.

<sup>59</sup> John R. Poole to S.B. Dickinson, 17 October 1956, UMA 1987.0058, Unit 9.

<sup>60</sup> Ibid.

<sup>61</sup> See Robert Porter, 'Two British mining houses in Australia: Consolidated Gold Fields and CRA. Part 2 – evolution and new structures', *JAMH*, Vol. 22, October 2024, p. 107.

<sup>62</sup> Rio Tinto Australian Exploration Pty Limited, Report on Visit to Western Australia by S.B. Dickinson, Managing Director, R.T.A.E., August 25, 1959, p. 6, UMA 1987.0058, Unit 7.

<sup>63</sup> Ibid., p. 6.

<sup>64</sup> S.B. Dickinson to The Hon David Brand, 5 February 1960, UMA 1987.0058, Unit 7.

<sup>65</sup> To Chairman and Directors RTMS, West Australia – Hancock & Wright, A.T. Climas, 2 February 1961, pp. 8-9, UMA 1987.0058, Unit 26.

<sup>66</sup> Rio Tinto Australian Exploration Pty Limited, Report on Visit to Western Australia by S.B. Dickinson, Managing Director R.T.A.E., August 25, 1959, p. 11, UMA 1987.0058, Unit 7.

<sup>67</sup> P.W. Robinson to R.W. Wright, 14 September 1959, UMA 1987.0058, Unit 7.

<sup>68</sup> Note on Manganese ore with particular reference to the deposits in North-West Australia, May 21, 1959 (A.E. Buxton), UMA 1987.0058, Unit 25.

<sup>69</sup> Ultimately, by a series of actions, Rio Tinto's then main British mining counterpart, Consolidated Gold Fields, through its recently established Australian arm, acquired a majority interest in The Mount Lyell

Mining and Railway Company. See Robert Porter, *Consolidated Gold Fields in Australia. The Rise and Decline of a British Mining House in Australia, 1926-1998*, ANU Press, Canberra, 2021, pp. 142, 430.

<sup>70</sup> Inter Office Memorandum From Mr Gairnes to Mr Best, Investigating Committee Report on Mt Lyell, July 1958, Barrington House, London, August 5, 1958, UMA 1988.0085, Unit 47.

<sup>71</sup> Confidential Aluminium Prospects for Rio Tinto and Associates in Australia, 23 October 1959, p. 4, UMA 1987.0058, Unit 26.

<sup>72</sup> Queensland Alumina Limited Weipa Alumina Plant Wespac, John Fogarty, December 1991, p. 33, UMA 1997.0079, Unit 2.

<sup>73</sup> Minutes of Meeting of Directors, Rio Tinto Management Services (Australia) Pty Limited, on 14 April 1959, p. 1, UMA 2006.0050, Unit 35.

<sup>74</sup> Minutes of Special Meeting of Directors of Rio Tinto Management Services (Australia) Pty Limited, on 31 December 1959, UMA 2006.0050, Unit 35.

<sup>75</sup> Notes provided by Sir Ben Dickinson on Rio Tinto Australian Exploration, p. 19.

<sup>76</sup> Wright, John Rodd, p. 7.

<sup>77</sup> For a consideration of opportunities presented by Dickinson late in his period with Rio Tinto, and several of which came to fruition after his departure in 1960, see Porter, *Rio Tinto in Australia*, pp. 54-55 and 62-63.

<sup>78</sup> Notes provided by Sir Ben Dickinson on Rio Tinto Australian Exploration, p. 4.

<sup>79</sup> *Ibid.*

<sup>80</sup> *Ibid.*, pp. 35 and 42.

<sup>81</sup> R.F. Lethbridge, Australian Budget, 23 June 1960, UMA 1988.0085, Unit 48.

<sup>82</sup> The circumstances associated with Dickinson's departure from Rio Tinto were as extraordinary as the events that preceded them. As Dickinson recalled, he was asked to leave the company over a marital situation, when he had arranged to travel overseas with a woman who was not his wife. Notes provided by Sir Ben Dickinson on Rio Tinto Australian Exploration, p. 10.

<sup>83</sup> Minutes of Meeting of Directors of Rio Tinto Management Services (Australia) Pty Limited, on 26 July 1960, UMA 2006.0050, Unit 35.

<sup>84</sup> S.B. Dickinson to Val Duncan, 17 August 1960, p. 1, Dickinson, Samuel Benson Collection, State Library of South Australia, PRG1097 Series 9, Part 1 of 5.

<sup>85</sup> Sir Arthur Fadden had formed his own company and was accredited with seven Japanese steel mills to market iron ore to Japan. *The Bulletin*, 12 April 1961.

<sup>86</sup> The Hon Paul Hasluck from Managing Director, Duval Holdings Pty Ltd, 30 March 1961, NAA F425 C133 Part 2, and C.R. Lambert, Secretary, Department of Territories, Managing Director, Duval Holdings Pty Ltd, 30 March 1966, NAA F425 C133 Part 2.

<sup>87</sup> The Northern Territory Director of Mines admitted that Duval Holdings as a new applicant was not previously known to him. His Honour the Administrator, from C.F. Adams, Director of Mines, 10 April 196, NAA F425 C133 Part 2.

<sup>88</sup> The deposit originally estimated to contain 150-200 million tons, was now estimated at 30 to 40 million tons. Pechiney, Gove Bauxite Deposit, NAA M58, 375 Part 1.

<sup>89</sup> The Secretary, Roger Nott, Administrator, Gove Bauxite Deposits, 2 January 1963, NAA F425 C133 Part 3.

<sup>90</sup> See Gove Bauxite Deposits Conference on 16 January 1963 and H.C. Giese, Director of Welfare to The Assistant Administrator (E. & S.A.), Gove Lease Arrangements, 7 February 1963, NAA F425 C133 Part 3.

<sup>91</sup> H.C. Barclay, Assistant Administrator (E. & S.A.), Gove Bauxite Corporation Ltd, 21 January 1963, and The Secretary, Gove Bauxite Deposits, Roger Nott, Administrator, 2 January 1963, NAA F425 C133 Part 3.

<sup>92</sup> The Hon. Paul Hasluck from Gove Bauxite Corporation Limited, 11 December 1962, NAA F425 C133 Part 3.

<sup>93</sup> Proposals for the Development of Gove Bauxite Deposits, Joint Report by the Department of Territories and the Department of National Development, 14 December 1962, NAA F425 C133 Part 3; I.P. Sargaent, Gove Bauxite to Acting Secretary, Department of Territories, 21 December 1962, NAA F425 C133 Part 3. Production on Aboriginal reserves in the Northern Territory was, at Hasluck's instigation, associated with a royalty double the prevailing rate, with proceeds to be paid into a trust fund for the benefit of the welfare of Aborigines in the Northern Territory. These payments did not affect the general allocation of funding for Aboriginal policy.

<sup>94</sup> On 8 March 1963, Hasluck wrote to Gove Bauxite Corporation indicating that the company would be required to erect a school for rental by the Administration and be expected to provide increased services as the project develops. It was believed that provisions could be made to safeguard the interests of the Yirrkala mission, ensure policies for the conduct of mine and operation workers and provide opportunities for employment for part of the Aboriginal population. The Managing Director, Gove Bauxite Corporation Pty Ltd, Paul Hasluck, 8 March 1963, 17 February 1963, NAA F425 CB3 Part 4, and Text of Statement Issued by the Prime Minister, 17 February 1963, NAA F425 CB3 Part 4. Hasluck held discussions with Reverend C.F. Gribble, the General Secretary of the Methodist Overseas Mission in Sydney on 15 February 1963 with his acceptance of the provisions outlined in Menzies's statement to safeguard the interests of the Yirrkala mission. To His Hon The Administrator. C.R. Lambert, Gove Bauxite Corporation Ltd Granted Special Mining Lease, NAA F425 CB3 Part 4.

<sup>95</sup> Four petitions were presented in total, with two similar petitions presented on 14 August and another petition on 28 August 1963.

<sup>96</sup> See The Parliament of the Commonwealth of Australia, House of Representatives, *Report from the Select Committee on Grievances of Yirrkala Aborigines, Arnhem Land Reserve, Part 1 – Report and Minutes of Proceedings*, Commonwealth Government Printer, Canberra, 29 October 1963, p. 6.

<sup>97</sup> The events leading to the bark petitions and formation of a select committee, as well as role played by some of the principal participants (the missionaries, members of the Yirrkala Aboriginal population, the Northern Territory Administration, the Minister for Territories, Gove Mining and Industrial Corporation, including Dickinson, and Federal parliamentarians, including Gordon Bryant and Fred Chaney senior (who suggested a petition on bark), are conveyed in Clare Wright, *Naku Dharuk. The Bark Petitions: How the People of Yirrkala Changed the Course of Australian Democracy*, Text Publishing, Melbourne, 2024, 618 pp.

<sup>98</sup> The Parliament of the Commonwealth of Australia, House of Representatives, *Report from the Select Committee on Grievances of Yirrkala Aborigines, Arnhem Land Reserve, Part 1*, p. 11.

<sup>99</sup> *Ibid.*, pp. 11-12.

<sup>100</sup> The Parliament of the Commonwealth of Australia, House of Representatives, *Report from the Select Committee on Grievances of Yirrkala Aborigines, Arnhem Land Reserve, Part 1*, p. 11.

<sup>101</sup> Dickinson appeared before the Select Committee and Federal Labor MHR Gordon Bryant (one of the main individuals responsible for agitating for a Select Committee inquiry), is reported by Wright as saying that he 'commended Dickinson for your attitude and the way you have put the facts before us.' Wright, *Naku Dharu. The Bark Petitions*, p. 459.

<sup>102</sup> The consortium involved: Swiss Aluminium and CSR, along with AMP, Bank of New South Wales, The Commercial Bank of Sydney, Elder Smith Goldsborough Mort, Mount Morgan, The Mutual Life Citizen Assurance Co and Peko-Wallsend.

<sup>103</sup> Gove Bauxite Deposits, Interdepartmental Report on Gove Peninsula, NAA F425 C133 Part 5.

<sup>104</sup> *Australian Financial Review*, 22 August 1997.

<sup>105</sup> See R. Keith Johns, 'Uranium in South Australia – Politics and Reality', *JAMH*, Vol. 3, September 2005, p. 176.

<sup>106</sup> This and following sections drawn from UEGA by Sir Ben Dickinson, November 1982, Public Records of South Australia [hereafter PROSA], 010679/00001, Unit 5.

<sup>107</sup> British Nuclear Fuels, a company owned by the UK Government, was also involved in the work. See D. Aston and E. Raetz, 'Status of the Urenco/Centec Centrifuge Project and Advantages of the Process', International Conference on Nuclear Power and its Fuel Cycle, Salzburg, Austria, 2-13 May 1977, [https://inis.iaea.org/collection/NCLCollectionStore/\\_Public/08/303/8303309.pdf?r=1](https://inis.iaea.org/collection/NCLCollectionStore/_Public/08/303/8303309.pdf?r=1)

<sup>108</sup> Angela Woollacott, *Don Dunstan. The Visionary Politician who Changed Australia*, Allen & Unwin, Sydney, 2019, pp. 230-232.

<sup>109</sup> Official Visit: 19 January-11 February 1979, Don Dunstan, P.M. Wilmhurst, Technical Director of AMDEL, p. 2, PROSA, SA010679/0001 Unit 000004.

<sup>110</sup> *Ibid.*, p. 4.

<sup>111</sup> UEGA by Sir Ben Dickinson, November 1982, PROSA, p. 1, 010679/00001, Unit 5.

<sup>112</sup> *Ibid.*, p. 4.

<sup>113</sup> *Ibid.*, p. 5.

<sup>114</sup> *Ibid.*, p. 14.

<sup>115</sup> *Ibid.*, p. 27.

<sup>116</sup> Uranium Enrichment Group of Australia, Investigation of the Establishment of an Australian Uranium Enrichment Industry. Report on Technology Choice and Plant Siting and Other matters, UEGA, 24 September 1982.

<sup>117</sup> Sir Ben Dickinson, Chairman of Uranium Enrichment Committee, September 1983, PROSA, 010679/00001, Unit 8.

<sup>118</sup> Johns, *Uranium in South Australia – Politics and Reality*, p. 177.

<sup>119</sup> The South Australian Government again considered an involvement in the nuclear fuel cycle in 2015, when a Royal Commission undertook an investigation. See Nuclear Fuel Cycle Royal Commission (South Australia), Nuclear Fuel Cycle Royal Commission Report, May 2016, Nuclear Fuel Cycle Royal Commission, Adelaide, South Australia, May 2016, <https://nla.gov.au/nla.obj-281452879/view>

<sup>120</sup> Phillip Grenard, 'S.A.'s Land Rights dilemma', *The Bulletin*, 25 March 1980, p. 41.