Judgment 2 of 1978

IN THE PRIVY COUNCIL

No. 28 of 1977

ON APPEAL
FROM THE SUPREME COURT OF
NEW SOUTH WALES
EQUITY DIVISION

IN PROCEEDINGS 292 OF 1973

QUEENSLAND MINES LIMITED

Appellant (Plaintiff)

ERNEST ROY HUDSON,

SAVAGE IRON INVESTMENTS PTY. LIMITED

and

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LIMITED

Respondents (Defendants)

TRANSCRIPT RECORD OF PROCEEDINGS

PART II

Volume VIII

SOLICITORS FOR THE APPELLANT

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* 8A. Annexed hereto and marked with the letter "E" is a photocopy of letter dated 26th September, 1960 from Stanley Korman to J. G. Symons.

(a) Is the signature to that letter that of Mr. Stanley Korman the then chairman of Stanhill Consolidated Limited?

8B. (a) I don't know.

8A. (b) A copy of this letter was produced by the first defendant upon discovery. When did this letter first come into the possession of the firstnamed defendant?

8B. (b) I believe that I first saw a copy of the letter about the time it was written i.e. on or about 26th September, 1960.

8A. (c) When did the firstnamed defendant first become aware of the contents of this letter?

8B. (c) When I first saw the letter - see (b) above.

8A. (d) Did the first defendant have an interview with Mr. Symons shortly before 26th September, 1960?

8B. (d) Yes.

8A. (e) What took place at such interview?

8B. (e) See answers to interrogatories nod. 1.I. (b) to (h).

* Exhibit "A6" page 1295 of this Appeal.

Exhibit "B" - Interrogatories 8(a), (b), (c), (d), (e) and (o) and answers thereto

1913.

8A. (o) Did the first defendant ever complain about or express disagreement with any of the content of that letter to Mr. Stanley Korman or Mr. Symons?

8B. (o) No.

Exhibit "B" - Interrogatories 8(a), (b), (c), (d), (e) and (o) and answers thereto

1A. (a) Did the first defendant have a conference or conferences with Mr. J.G. Symons, the Director of Mines for Tasmania in 1959-1960 and January and February 1961?

(b) When were such meetings held?

(c) Where were such meetings held?

(d) What other persons were present at such meetings?

(h) In respect of each meeting with Mr. Symons what was said at each of such meetings?

1B. (a) Yes. There were a number of conferences between me and Mr. J.G. Symons during this period. Particulars of the relevant substances of each such conference to the best of my recollection are given hereunder with each conference dealt with following a Roman numeral.

I. (b) About September, 1960.

(c) At the office of Mr. J.G. Symons, Director of Mines for Tasmania in Davey Street, Hobart.

(d) No other person was present.

(h) I had known Mr. Symons for some years when he was employed at Broken Hill, but had not seen him since he left there. We renewed our acquaintanceship and he asked me what I was doing. I told him I was managing director of Mary Kathleen

Exhibit "C" - Interrogatories 1(a), (b), (c), (d), (h) and answers I, II, III, IV, V, VI, (i), (ii) VII, VIII

Investments, Australasian Oil Exploration and Queensland Mines and that I was also working for Stanley Korman of Stanhill Consolidated Limited. I told Mr. Symons that Stanhill was interested in extending its organisation into a small steel industry and had been looking for iron ore in Queensland and subsequently tried to establish a steel industry in New Zealand at considerable cost and without success, and that Mr. Palmer had then been asked to make an investigation of iron ore bodies in Australia and had recommended an investigation of the possibility of acquiring the Savage River deposits, which was the reason for my visit. I discussed with Mr. Symons the estimated cost of development of the Savage River deposits and the financial status of Stanhill Consolidated and its ability to raise finance. I told Mr. Symons that Mr. Palmer had made the suggestion of producing the iron ore at Savage River and reducing it in Victoria using Victorian brown coal, and Mr. Symons informed me this would not be acceptable to

his Government, which required an integrated steel industry in Tasmania and was only prepared to deal with an organisation with the capability and capacity to undertake the work. Mr. Symons informed me that Rio Tinto Exploration Pty. Limited had done work for the Government in supervising drilling on the

northern section of Savage River, it had a large exploration licence adjoining the area and that the Government considered it should have first opportunity to apply for a licence and, if it did so, the Government would be in favour of granting such a licence to Rio Tinto which had the necessary capital and expertise to undertake the venture. I also discussed with Mr. Symons terms and conditions of an application for an exploration licence which would be satisfactory to his Government from the development aspect, and he informed me that he considered the investigation should be completed within a period of two years,

Exhibit "C" - Interrogatories 1(a), (b), (c), (d), (h) and answers I, II, III, IV, V, VI, (i), (ii), VII, VIII

requiring expenditure of £250,000 every six months.

II. (b) October, 1960.

(c) At the office of Mr. Symons.

(d) No other person was present.

(h) I discussed with Mr. Symons inter alia some of the matters referred to in the letter dated 26th September, 1960 from Stanhill Consolidated to Mr. Symons. Mr. Symons said that if Rio Tinto retired an application for a licence generally upon the basis of the letter would be considered. Mr. Symons said that the only tenure given would be an exploration licence renewable every six months and that his Government would insist on certain terms and conditions in regard to expenditure. Mr. Symons also said that any company making application for an exploration licence in Tasmania had to be registered in that State. (Stanhill Consolidated was subsequently registered in Tasmania on 28th November, 1960.)

III. (b) December, 1960.

(c) 16 O'Connell Street, Sydney.

Exhibit "C" - Interrogatories 1(a), (b), (c), (d), (h) and answers I, II, III, IV, V, VI, (i), (ii), VII, VIII

(d) No other person present.

(h) We discussed the matters about which I reported in the letter to Mr. Korman of 12th December, 1960.

IV. (b) January, 1961.

(c) Mr. Symons' office.

(d) No other person was present.

(h) Mr. Symons informed me inter alia he had been advised by Rio Tinto Exploration they were not interested in proceeding with an integrated steel industry and that therefore Stanhill Consolidated could now make an application for an exploration licence.

V. (b) February, 1961.

(c) At the office of Mr. Symons.

(d) No other person was present.

(h) I handed to Mr. Symons the application for an exploration licence dated 31st January, 1961. Mr. Symons said that generally, the terms of the application seemed acceptable but it would be a matter for his Minister to make the decision.

VI.(i)(b) In about the latter part of February, 1961.

(c) At the office of Mr. Symons.

Exhibit "C" - Interrogatories 1(a), (b), (c), (d), (h) and answers I, II, III, IV, V, VI, (i), (ii), VII, VIII

(d) No other person was present.

(h) I informed Mr. Symons that Mr. Korman had told me that in view of the liquidity problems of Stanhill Consolidated at that time, it was doubtful whether Stanhill Consolidated would be able to proceed but Mr. Korman had not yet made a final decision. I said that if the application were allowed to continue and the licence issue if Stanhill Consolidated did not go ahead I hoped I would be able to get some other organisation to take the place of Stanhill Consolidated.

VI.(ii)(b) In about the latter part of March, 1961.

(c) At the office of Mr. Symons.

(d) No other person was present.

(h) I informed Mr. Symons that Mr. Korman had told me that Stanhill Consolidated could not proceed and that I would try to obtain another organisation to take Stanhill's place or float a company as provided in the application and that, in the interim, I was prepared to carry out at my own expense limited development work. Mr. Symons said to me that as no one else was interested

consideration would be given to allowing the licence to continue for the time being.

---oOo---

(e) Yes. I had two conferences with the Premier of Tasmania during this period. Particulars of the relevant substance of each such conference to the best of my recollection are given hereunder with each conference dealt with following a Roman numeral.

VII.(f) October, 1960.

(b) The Premier of Tasmania, Mr. Symons, a representative of the Attorney-General of Tasmania, Sir John McCauley, a director of Stanhill Consolidated,

5.

Mr. S. Korman and another director of Stanhill Consolidated probably Mr. F.W. Strange.

(i) Mr. Korman gave particulars of Stanhill Consolidated and its various interests, and mentioned his efforts to establish a steel industry in New Zealand. Mr. Korman said he wanted to set up an organisation

Exhibit "C" - Interrogatories 1(a), (b), (c), (d), (h) and answers I, II, III, IV, V, VI, (i), (ii), VII, VIII

to establish a steel industry in Tasmania and there was discussion of various aspects of this including the type of tenure which would be available. The Premier indicated that Tasmania desired to have a steel industry established and that the Savage River deposits had been reserved for this specific purpose. He also indicated that the Government would give every possible assistance.

VIII. (f) In the latter part of 1961.

(g) Mr. Symons was present.

(i) I discussed with the Premier my actions in trying to interest various companies in the project. I informed him I still thought I would be able to interest some company if he allowed the licence to be further renewed. The Premier told me that I should understand his position and that if a suitable organisation was interested and was prepared to carry out the expenditure commitment, he would have no alternative but to grant a licence to it. I informed the Premier that I was

Exhibit "C" - Interrogatories 1(a), (b), (c), (d), (h) and answers I, II, III, IV, V, VI, (i), (ii), VII, VIII

aware of this position and was prepared to take the risk attendant thereon and that if he did grant a licence to another organisation, I hoped he could do so on condition that it would refund to me all my direct expenditure on development.

---oOo---

(j) I was part-time managing director of the plaintiff from 24th January, 1959 until 15th March, 1961 during which period the activities of the plaintiff were limited to uranium development in Queensland.

2A. (a) Was the first defendant present at a meeting of the board of directors of the plaintiff held on 13th February, 1962 and at which he is shown in the Minutes as having given a report on negotiations that had taken place with the Tasmanian Government with regard to developing iron ore deposits in Tasmania?

2B. (a) Yes.

2A. (d) Over what period had the negotiations referred to taken place?

2B. (d) Negotiations with the Tasmanian Government had taken place from September, 1960 up to the 13th February, 1962.

2A. (e) With whom had such negotiations taken place?

2B. (e) With Mr. Symons, Director of Mines for Tasmania and Mr. Reece, the Premier of Tasmania.

1924. Exhibit "D" - Interrogatories 2(a), (d) and (e) and answers thereto

3A. (a) Was any agreement entered into by the first defendant with North West Iron Co. Limited and/or Dahlia Mining Co. Limited in respect of the winning and/or processing or iron ore products from the Savage River area?

(b) Was any agreement entered into by the second defendant with North West Iron Co. Limited and/or Dahlia Mining Co. Limited in respect of the winning and/or processing of iron ore products from the Savage River area?

(c) Was any agreement entered into by the third defendant with North West Iron Co. Limited and/or Dahlia Mining Co. Limited in respect of the winning and/or processing of iron ore

products from the Savage River area?

(d) Is or are such agreement or agreements in writing?

(e) What is the description of such written agreement?

3B. (a) (b) (c) (d) (e) As from June 3,1966 the interest of Pickands Mather & Co. International in the Option Agreement dated October 24, 1964 between Industrial and Mining Investigations Pty. Limited (as the

Exhibit "H" - Interrogatory 3 and answer thereto

second defendant was then known) and Pickands Mather & Co. was assigned to Dahlia Mining Co. Limited and Northwest Iron Co. Limited.

Exhibit "H" - Interrogatory 3 and answer thereto

4A. (a) Was the preliminary report to the first defendant on iron ore and ilmenite deposits in Western Australia and Tasmania a copy of which is annexed hereto and marked with the letter "A" prepared by A. G. Palmer a consultant geologist in or about December 1959?

4B. (a) Yes.

4A. (b) Was the first named defendant the managing director of the plaintiff at that time?

4B. (b) Yes, this being a part-time appointment.

4A. (c) Was such report delivered to the plaintiff?

4B. (c) No.

4A. (d) Was such report delivered to the first named defendant?

4B. (d) Yes, on behalf of Stanhill Consolidated.

4A. (e) How was it delivered to the first named defendant?

4B. (e) By Mr. Palmer.

4A. (f) Did Mr. Palmer render an account for his costs of preparation of the report?

4B. (f) Yes.

4A. (g) Identify any account rendered by Mr. Palmer in respect of such report.

4B. (g) The account was for £487.18.7

4A. (i) Was such account paid for by the first defendant?

Exhibit "L" - Interrogatories 4(a) to (g) (incl) and 4(i) to (o) (incl) and answers thereto

4B. (i) No.

4A. (j) Was payment made by cheque?

4B. (j) Yes.

4A. (k) Upon what account was such cheque drawn?

4B. (k) Upon the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney such payment being made by Queensland Mines Limited on behalf of Stanhill Consolidated.

4A. (l) Who gave instructions to Mr. Palmer to make the report?

4B. (l) I did.

4A. (m) Were such instructions in writing?

4B. (m) No.

4A. (n) What is the identity of the writing?

4B. (n) Not applicable.

4A. (o) Were oral instructions given by the first defendant for the preparation of the report?

4B. (o) Yes.

PRELIMINARY REPORT

to

E. R. HUDSON, ESQ.

on

IRON ORE AND ILMENITE DEPOSITS

IN WESTERN AUSTRALIA AND TASMANIA

* * *

A. G. Palmer, B.E. M.Aus.I.M.M.

December, 1959

Exhibit "M" - Preliminary
Report to E.R. Hudson
1929. from A.G. Palmer

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* * *

INTRODUCTION

This report has been prepared under the instructions of E. R. Hudson, Esq., 16 O'Connell Street, Sydney, N.S.W. Its principal objective is to make a preliminary assessment of the potential of iron ore and ilmenite deposits in Western Australia and Tasmania with a view to their respective utilizations in the manufacture of iron, steel and titanium pigment.

The conclusions reached in this report have been based on information collected by the writer in Western Australia between 6th - 20th October, and in Tasmania between 20th - 23rd October this year. Sources of information included personal interviews with senior government and non-government executives, technical officers, and the study of reports, papers, and other technical material.

Owing to the very preliminary nature of the investigation, and the fact that substantial tonnages of iron ore are known to exist in Western Australia and Tasmania, it was not considered necessary to examine any of the actual iron ore deposits at this juncture. However, in view of their proximity to Perth, the writer did inspect the ilmenite deposits and operating plants at Bunbury and Capel.

In conclusion, it is desired to place on record the friendly co-operation of the various officials interviewed. Their help and guidance was of the utmost value and is gratefully appreciated.

* * *

S U M M A R Y

GENERAL

A. IRON & STEEL

(1) Australia is a small producer of iron and steel with a plant capacity of about 3.2 million ingot tons, which roughly equals present Australian consumption. By way of comparison, existing capacity of U.S. plants is about 140 million ingot tons.

(2) The whole of Australia's iron and steel output is produced by one organisation, namely, the Broken Hill Pty. Co. Ltd., and subsidiary companies. B.H.P. operates integrated iron and steel plants at Port Kembla and Newcastle, N.S.W.

(3) Due to the coastal position of the B.H.P. plants, together with the favourable location and high grade nature of the deposits being exploited, the Company's costs are amongst the lowest in the world.

(4) Over the last five years B.H.P. has expended roughly £15 million per year on new plant. This expenditure has been largely financed out of revenue rather than by new capital issues.

(5) By 1975, Australia's steel consumption may reach 7.3 million ingot tons. Present cost of new iron and steel capacity would be about £120 per annual ton.

(6) On the basis of the above figures, the retention of Australia's self-sufficiency in steel up to 1975 may involve a capital expenditure of £500 million - equivalent to an average annual expenditure of £30 million for the years 1960-1975.

(7) In the interests of preserving known reserves of iron ore, the Commonwealth Government has maintained an embargo on the export of iron ore since 1938. The embargo also applies to concentrates and sinters produced by the beneficiation of low-grade iron ores. It

would not apply to metallic products such as sponge iron produced by the direct reduction of iron ores.

B. TITANIUM PIGMENT

(1) Australia now consumes 15,000 tons of titanium pigment per year, comprising 7,000 tons of imported pigment and 8,000 tons of pigment produced locally at Burnie, Tasmania, by Australian Titan Products Pty. Ltd. - Australia's sole producer.

(2) By 1975, Australia's requirements may reach 39,000 tons per year, as compared with present local production of 8,000 tons per year. Present cost of new pigment capacity would be approximately £400 per annual ton.

(3) Approximate consumption of titanium pigment by manufactures is as follows:-

	%
Paints, enamels & lacquers	54
Paper	13
Rubber	5
Floor coverings	12
Coated fabrics & textiles	4
Printing Ink	3.5
Miscellaneous	8.5
	100.0

PRINCIPAL RAW MATERIALS

A. IRON & STEEL

(a) Iron Ore Deposits - Western Australia

(1) Known reserves, including proved, probable and prospective ore, in high-grade deposits containing more than 60% iron, total 280 million tons.

(2) Known reserves, including proved, probable and prospective ore, in deposits containing less than 60% iron total 250 million tons.

(3) With the exception of certain deposits granted to B.H.P., iron ore deposits

Exhibit "M" - Preliminary
Report to E.R. Hudson
from A.G. Palmer

in W.A. are now reserved to the Crown and are excluded from the normal operation of the Mining Act.

The W.A. Government would be prepared to grant rights over the reserved deposits to an approved applicant. Such rights would be subject to royalty payments and, if the ore is required for iron and steel-making in Australia, probably conditional on the applicant setting up an iron or steel industry in W.A.

(4) The principal W.A. deposits are as follows:

LOCATION	RESERVES (millions long tons)	IRON CONTENT %	REMARKS
Koolan Island. Yampi Sound, 90 miles north of Derby, the nearest port	92	67	Held by B.H.P.
Cockatoo Island. Adjacent to Koolan Island	17	69	Held by B.H.P.
Koolyanobbing. 34 miles from Southern Cross Railway station, 250 miles by rail from Fremantle	69	63	Partly held by B.H.P. Dowd's Hill deposit reserved to the Crown
Bungalbin. About 40 miles north of Koolyanobbing.	41	60+	Reserved to the Crown
Mt. Caudan. About 40 miles by road south of Southern Cross.	Uncertain but large	51-60 (outcrop only)	Reserved to the Crown

Exhibit "M" - Preliminary
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Mt. Goldsworthy. (Ellarine Hills) 85 miles by road from Port Hedland.	11	64	Reserved to the Crown

(5) Deposits at Dowd's Hill and Mt. Goldsworthy were the subjects of tenders recently called by the W.A. Government for the purchase of iron ore for export purposes. Since the calling of the tenders, in conformity with the Commonwealth embargo, the Prime Minister has emphatically stated that no licence would be granted for the export of the W.A. ore.

(b) Iron Ore Deposits - Tasmania.

(1) The most important known iron ore deposit in Tasmania occurs near the Savage River, some 15 miles inland from Pieman Heads on the north-west coast.

-4-

(2) Preliminary geological work and two diamond drill holes have suggested the deposit contains at least 200 million tons of ore. The average grade inferred from the drilling and surface work is 50% iron and 1.7% titanium dioxide.

(3) Other iron ore deposits occur at the following localities:

Blythe River
Dial Ranges
Highclere
Hampshire
Beaconsfield
Zeehan

Insufficient work has been carried out on these other deposits to permit a statement of reserves.

(4) The Rio Tinto Mining Company of Australia Pty. Ltd. possesses a large prospecting area surrounding the Savage River deposits. The Company recently

Exhibit "M" - Preliminary
Report to E.R. Hudson
from A.G. Palmer

discovered a new iron ore deposit within this area and has exclusive rights over this deposit.

(5) With the exception of the deposit found by Rio Tinto, all known iron ore deposits in Tasmania, including the Savage River deposit, are reserved to the Crown and excluded from the normal operation of the Mining Act.

The Tasmanian Government would be prepared to grant rights over the reserved deposits to an approved applicant on the principal condition that the applicant sets up a steel industry, or major part of it, in Tasmania.

(c) Iron Ore Deposits - Victoria

(1) The largest known iron ore deposit occurs in the Nowa Nowa area of East Gippsland, located some 140 miles east of Yallourn.

(2) Recent surveys in the Nowa Nowa area have revealed reserves of between 5 and 7 million tons of high grade ore.

(3) Other iron ore localities exist at Buchan, Dookie, Wartook and Lal Lal.

(4) Depite limited reserves, the Victorian deposits are important because of the proximity of brown coal and a large population.

(5) Limited reserves may be due to a dearth of exploration rather than a lack of deposits.

(d) Iron Ore Deposits - Other States.

Deposits in other States have not been considered, either because they are less favourably located, as in Queensland, because of small reserves, as in N.S.W. or because all the deposits of immediate economic interest are controlled by B.H.P. as in South Australia.

(e) Coal Deposits.

Reserves of proved and probable coal stand as follows:

-5-

STATE	BLACK COAL MILLIONS OF TONS.	BROWN COAL MILLIONS OF TONS.	REMARKS
New South Wales	11,700	-	Coking coals widespread. Coalfields well located.
Queensland	1,800	-	Mostly non-coking. Most deposits remote.
Western Australia	1,900	-	Non-coking. Fairly well located.
Victoria	16	37,000	Non-coking. Location very favourable.
Tasmania	250	-	Non-coking. Seams thin. Location fair.
South Australia	390	230	Non-coking. Poorly located.

(f) Limestone

With the exception of Western Australia, the Commonwealth is well endowed with limestone deposits suitable for metallurgical purposes. Known deposits in W.A. are, in general, poorly located and low in grade.

B. TITANIUM PIGMENT

(a) Ilmenite

(1) The only known commercial deposits of

Exhibit "M" - Preliminary
Report to E.R. Hudson
from A.G. Palmer

ilmenite suitable for pigment manufacture are located on the W.A. coast south of Perth.

(2) Particulars of the operating companies and reserves claimed are as follows -

COMPANY	PAID UP CAPITAL £	PLANT CAPACITY APPROX. TONS HEAVY MINERALS PER YEAR	LOCATION	RESERVES ILMENITE TONS
Western Titanium NL.	840,000	100,000	Ludlow	10,950,000
Westralian Oil Ltd	895,470	100,000	Capel	3,100,000
			Yoganup	900,000
			Tutunup	400,000
Cable (1956) Ltd.	300,000	50,000	Bunbury	250,000
Ilmenite Pty. Ltd.	?	50,000	Wonerup	?

(3) Grades of the various deposits being worked range from 10-50% ilmenite with subordinate zircon, rutile and monozite. The ilmenite itself contains from 50-62% titanium dioxide.

(4) Ilmenite deposits in W.A. are not reserved from occupation under the Mining Act.

(b) Sulphur and Sulphur Bearing Material.

(1) Australia has no known commercial deposits of elemental sulphur. Requirements are imported by the British Phosphate Commissioners on behalf of a pool from which consumers draw their supplies.

(2) For economic reasons, sources of sulphur-bearing material used for pigment manufacture should be located as closely as possible to the ilmenite deposits. For this reason, only sources of sulphur in Western Australia have been considered herein.

(3) Potential, though not necessarily economic, sources of sulphur include pyrites deposits and the sulphur content of sour waste gases from the Kwinana oil refinery.

(4) Pyrite deposits are known to occur in W.A. at Norseman, Koolyanobbing, Ravensthorpe, Whim Creek, Nevoria and Parker's Range. An occurrence of pyrites has been recently discovered in the Bunbury district. In view of the proximity of the ilmenite deposits, the find is of considerable interest.

(5) At the present juncture, sour gases from the Kwinana refinery would not be an economic source of sulphur.

POWER RESOURCES

(1) A fully integrated iron and steel plant incorporating blast furnace smelting would be capable of generating all or a large part of its power requirements.

(2) Integrated iron and steel plants using direct reduction or electric smelting methods would not be self-sufficient in power requirements and would be largely dependant on power purchased from government authorities.

(3) In view of the large potential of cheap hydro-electric power, Tasmania is of special interest with respect to electric pig iron smelting. Cost of power in Tasmania could be as low as 0.5 pence per K.W.H. compared with 2.0 - 3.0 pence per K.W.H. in other States.

ECONOMICS

(1) Due to the impossibility of obtaining any precise information at this stage, the following assessments should only be regarded as a rough guide to the possible economics involved in the exploitation of iron ore and ilmenite deposits.

(2) Although there are many ways of attacking the problem, three prospects have been studied as being roughly representative of the whole. They are:-

PROSPECT 1 - An Iron and Steel Industry

(i)	Location of Works	Tasmania and Victoria.
(ii)	Principal raw materials	Savage River ore and Victorian brown coal.
(iii)	Processes	Direct reduction and electric smelting.
(iv)	Production rate	Iron making capacity 1,000,000 tons per year, with production of finished products of, say, 1,500,000 tons per year.
(v)	Total capital investment	£180,000,000
(vi)	Estimated production cost for typical product, including freight to Australian capital cities (merchant bar)	£34.4 per ton.
(vii)	Additional amount required to yield 25% on capital before tax (merchant bar)	£30.0 per ton.
(viii)	Price required, delivered to Australian capital cities (merchant bar)	£64.4 per ton.

(ix)	Actual B.H.P. price delivered to Australian capital cities (merchant bar)	£40.5 per ton
(x)	Adverse price differential between hypothetical and B.H.P. product (merchant bar)	£23.9

PROSPECT 2 - A Titanium Pigment Industry

(i)	Location of works	Bunbury, Western Australia.
(ii)	Principal raw materials	Bunbury or Capel ilmenite and imported sulphur.
(iii)	Process	Conventional sulphuric acid process.
(iv)	Production rate	20,000 tons of pigment/ year.
(v)	Total capital investment	£8,000,000.
(vi)	Estimated production cost, including freight to capital cities	£135.4 per ton of pigment.
(vii)	Additional amount required to yield 25% on capital before tax	£100.0 per ton of pigment.
(viii)	Price required delivered to Australian capital cities	£235.4 per ton of pigment.
(ix)	* Actual price for Burnie product delivered to Sydney	£260.0 per ton of pigment.
(x)	Favourable differential between hypothetical and Burnie product	£24.6 per ton of pigment.

* Average cost of foreign pigment imported in 1958, F.O.B. port of shipment, was £212 per ton. To this figure must be added overseas freight, local freight, insurance, duty, etc. to obtain cost delivered to capital cities.

PROSPECT 3 - A Small Sponge Iron industry (product exported as scrap substitute)

(i)	Location of Works	Bunbury or Collie, W.A.
(ii)	Principal raw materials	Dowd's Hill ore and Collie coal.
(iii)	Process	Direct reduction process.
(iv)	Production rate	100,000 tons of sponge iron/year
(v)	Total capital investment	£4,000,000.
(vi)	Estimated production cost including F.O.B. charges Bunbury	£20.9 per ton sponge iron.
(vii)	Additional amount required to yield 25% on capital before tax	£10.0/ ton sponge iron.
(viii)	Price required F.O.B. Bunbury	£30.9/ton sponge iron.
(ix)	F.O.B. value of scrap exported (mainly to Japan)	1956 £22/ton 1957 £28/ton 1958 £18/ton

PRELIMINARY INVESTIGATIONS

(1) The purpose of the investigations would be to obtain all the data necessary for an accurate assessment of the economics involved in the exploitation of the deposits concerned. Besides determination of mineral reserves, the field unit would closely study processes, sources of power, labour, freights, locational factors, markets and costs and conditions generally.

(2) Assuming Government aid, either Commonwealth or State, was restricted to assays, minerals separation testing, and the construction of access roads where necessary, investigation costs of the following order would be expected -

PROSPECT	DURATION OF PROGRAMME	COST
1	3 years	£700,000
2	18 months	£210,000
3	18 months	£210,000

CONCLUSIONS

AN IRON & STEEL INDUSTRY

(1) The great industrial expansion now taking place in Australia, together with her population growth and continually improving living standards, must lead to greatly increased steel consumption. This increase in consumption may warrant the establishment of a second Australian steel industry within the next 15 years.

(2) A favourable location for a new steel industry would be in south-eastern Australia, with at least two works, one in Tasmania near the principal ore deposits, and one in Victoria on the brown coal deposits.

(3) A steel industry so located would possess the following advantages -

(a) The industry would be well located with respect to principal Australian markets and supplies of scrap;

(b) It would have access to abundant coal reserves in Victoria, and the cheap hydro-electric power resources of Tasmania.

(c) The twin location of the industry would permit back loading of raw materials and supplies, with resulting low transport costs.

(4) Principal raw materials for the industry in order of preference, would include -

(a) Tasmanian iron ore - initially the Savage River deposits;
(b) Victorian iron ore - if sufficient can be found;
(c) Victorian brown coal - subject to the development of an economic method of producing suitable char. This seems likely;
(d) New South Wales, black coal.
(e) Tasmanian black coal.

Whilst they must eventually be used in the Australian steel industry, deposits of West Australian iron ore, excluding those held by

B.H.P. are not sufficiently well located to be an immediate source of ore for a new steel industry situated some 2400 miles away.

(5) This study indicates that, from the short-term aspect, the major difficulty to be faced by a new steel industry is not so much one of raw materials or production costs, but one of capital - not only the amount of capital required, but also the heavy investment charges per ton of finished product if a reasonable yield on capital is to be achieved.

For this reason, to withstand the intense competition to be expected from the long established and lesser capitalised B.H.P., the new industry, would have to be prepared to operate for a considerable period during which the return on capital would be very small.

(6) The long term picture is more favourable. B.H.P. will also have to face much heavier capital costs per annual ton of new capacity, so that, neglecting variations in production costs, the unfavourable price differential for a given return between B.H.P. and a new industry would tend to disappear.

A TITANIUM PIGMENT INDUSTRY

(1) A favourable location for a new titanium pigment industry would be at Bunbury in Western Australia.

(2) Principal raw materials for the industry, in order of preference, would include:

(a) Bunbury and Capel ilmenites;
(b) Imported elemental sulphur;
(c) Pyrite deposits within a 100 mile radius of Bunbury - if sufficient ore can be found;
(d) Norseman pyrite;
(e) Sour waste gases from Kwinana oil refinery - providing sulphur content is increased to economic limits.

(3) This study suggests that a new pigment industry located at Bunbury, using the stated raw materials, could compete very favourably

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with the existing Burnie plant, operated by Australian Titan Products Pty. Ltd. in Tasmania.

(4) The study also suggests that production costs would be sufficiently low to permit the development of export markets.

(5) The successful establishment of a pigment industry would be subject to first obtaining adequate control at an early stage over the principal reserves of ilmenite in the Bunbury-Capel area.

A SMALL SPONGE IRON INDUSTRY

(1) Two possible locations include Bunbury or Collie, Western Australia and Victoria on the brown coal deposits.

(2) Principal raw materials would include -

(i) West Australian Plants:

(a) Iron ore from the Dowd's Hill deposit;
(b) Collie coal.

(ii) Victorian Plant:

(a) Iron ore from Nowa Nowa;
(b) Brown Coal.

(3) The industry would require a price of about £30 per ton F.O.B. for its product to achieve a reasonable yield on capital investment.

RECOMMENDATIONS

If it is desired to proceed with further investigations along the lines discussed in this report, the following preliminary action is recommended:

AN IRON & STEEL INDUSTRY

That an offer to carry out a detailed investigation to determine the feasibility of setting up an iron and steel industry in Tasmania be submitted to the Tasmanian Government. Such investigation to be conditional upon:

(1) The granting by the Government of

exclusive prospecting rights over all Tasmanian iron ore deposits now reserved to the Crown;

(2) The Tasmanian Government undertaking to carry out assay and minerals testing work, and to construct access roads for exploration purposes wherever necessary.

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A TITANIUM PIGMENT INDUSTRY

That options for the purchase of ilmenite concentrates under long term contracts, up to a maximum of 50,000 tons per year, be secured from companies operating leases at Bunbury or Capel.

A SMALL SPONGE IRON INDUSTRY

That an offer to investigate the feasibility of setting up a small sponge iron industry in Western Australia be submitted to the W.A. Government. Such investigation to be conditional upon -

(1) The granting by the Government of exclusive mining rights over the Dowd's Hill ore deposit, situated near Koolyanobbing;

(2) The W.A. Government undertaking all assay and minerals testing work.

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IRON ORE AND ILMENITE DEPOSITS
OF WESTERN AUSTRALIA & TASMANIA

SOURCES OF INFORMATION

Apart from the writer's own personal observation and studies, sources of information used in the preparation of this report included personal interviews and correspondence with senior government and non-government executives, technical personnel and the many excellent official reports and records available.

Principal officials contacted by correspondence or interviews included;

CORRESPONDENCE:

Senator the Hon. W.H. Spooner, Commonwealth Minister for National Development.

J. G. Symons, Director of Mines, Tasmania.

A.W. Knight, Commissioner, The Hydro-Electric Commission of Tasmania.

R. Grenfell Thomas, Chief, Division of Mineral Chemistry, C.S.I.R.O.

Officers of the Department of Mines, Victoria.

INTERVIEWS:

The Hon. C.W.M. Court, Minister for Industrial Development, West. Australia.

H.L. Brisbane, Director, H.L. Brisbane & Wunderlich Ltd. and Chairman of the Advisory Committee within the Department of Industrial Development, W.A.

Sir Russel Dumas, a former director of Public Works, W.A., and now a member of the above mentioned committee.

C.R. Gibson, Chief Executive Officer, Department of Industrial Development, W.A. and also a member of the above Committee.

A.H. Telfer, Under Secretary for Mines, W.A.

H.A. Ellis, Government Geologist, Department of Mines, W.A.

N. Fernie, Managing Director, Griffin Coal Mining Co. Ltd., W.A.

D. Cable, Director, Cable (1956) Ltd., W.A.

A.P. Asotoff, Technical Adviser, Cable (1956) Ltd., W.A.

G. Cessford, Assistant General Manager, B.P. (Kwinana) Pty. Ltd., W.A.

P.M. Johnstone, Assistant Director of Mines, Tasmania.

H.C.W. Keid, Chief Geologist, Department of Mines, Tasmania.

C.V. Batchler, Power Engineer, Hydro-Electric Commission of Tasmania.

POST WAR ACTIVITY

WESTERN AUSTRALIA. After World War II, the

Government undertook the establishment of a small charcoal iron industry at Wundowie, 41 miles east of Perth, which commenced production in 1948. The Wundowie project is controlled by the State and was established primarily to test the economic possibilities of a larger charcoal iron and steel industry.

A high quality pig iron is produced using ore from Koolyanobbing near Southern Cross and charcoal derived from a local encalypt, the Wandoo. The initial production of 10,000 tons of pig iron per year has been recently expended to 25,000 tons per year by the installation of a second blast furnace.

The bulk of the production is shipped to South East Asia, Western Europe and the U.S.A. There is no local conversion of the pig iron to steel and finished products. In addition to iron, various by-products are recovered, including slag wool and wood distillates.

Following the granting of leases by the W.A. Government in 1950, B.H.P. commenced exploiting the important iron ore deposits of Yampi Sound, the first shipment of ore being sent to the N.S.W. smelters in 1951.

In 1953 B.H.P. commenced the construction of a small rolling mill at Kwinana, adjacent to the B.P. oil refinery which supplies fuel oil for the mill furnace. The plant was completed in 1956 at an approximate cost of £4 million, and has a capacity of about 50,000 tons of finished products per year. Products made include rounds, squares, angles, flats and "Y" bar for fence posts.

The mill is supplied with billets shipped from Newcastle or Port Kembla, N.S.W. to Kwinana via the Bight. After unloading the ships sail under ballast to Yampi, load with iron ore and return via the northern coast to Newcastle or Port Kembla.

Last September, the W.A. Government called for tenders for the purchase of iron ore for export from deposits at Koolyanobbing and Mt. Goldsworthy. Tenders closed on 30th November last. Six tenders were received, one of which was submitted by the Rio Tinto Mining Company of Australia. The carrying out of the scheme is subject to the granting of a licence to export the

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iron ore by the Commonwealth. In this regard, the Prime Minister recently stated emphatically that his Government would not approve the granting of any such licence.

In 1956, the exploitation of extensive ilmenite deposits located south of Perth commenced. This ilmenite is almost chrome free and is suitable for pigment manufacture. Production is largely exported for this purpose.

Since 1956, there have been several investigations into the commercial possibilities of manufacturing titanium dioxide in W.A. using local ilmenite resources. The most important of those investigations was one carried out by Laporte Titanium Ltd. of England. This firm is represented in Australia by Laporte Chemicals (Australia) Pty. Ltd. of Botany, N.S.W. According to the Under-Secretary for Mines, Mr. Telfer, this company almost decided to proceed with the project, but withdrew on account of unfavourable market conditions.

TASMANIA. In 1956, airborne magnetometer surveys were carried out by the Bureau of Mineral Resources over several known iron-bearing areas in north-western Tasmania. The survey disclosed a number of anomalies including a very pronounced one crossing the Savage River where the existence of iron ore has been known since about 1880.

The geophysical work re-awakened interest in the area and ground surveys were carried out in 1957 by the B.H.P. and Tasmanian Mines Department. The results of these surveys were encouraging and indicated that the Savage River deposits were much larger than previously thought.

Following the ground surveys, two drill holes were put down by the Rio Tinto Mining Company of Australia Pty. Ltd. on behalf of the Tasmanian Mines Department. The drilling has revealed large prospective reserves of medium grade ore. Further drilling is to be undertaken. Rio Tinto has a large prospecting reserve surrounding, but not including the Savage River deposits, which are now excluded from the normal operation of the Mining Act.

In November this year it was announced that

B.H.P. would establish a plant to manufacture ferro-manganese at Bell Bay at a cost of about £1½ million. Ferro-manganese is an alloying agent used in steel-making. It is manufactured by electric furnace methods so that the proposed plant will have the advantage of cheap hydro-electric power. If conditions prove favourable the Company will manufacture other types of ferro-alloys.

The only titanium pigment plant in Australia has been operating for the last nine years or so at Burnie, Tasmania. The plant is owned by Australian Titan Products Pty.Ltd., a subsidiary of British Titan Products Pty.Ltd. of England. About 8,000 tons of pigment are produced annually which represents some 55% of Australian requirements. Increased production is planned. In 1957 the Company commenced using ilmenite won from its leases in Western Australia instead of the Indian ilmenite previously used.

GOVERNMENT POLICIES

IN RELATION TO IRON ORE DEPOSITS

WESTERN AUSTRALIA. With the exception of leases granted to B.H.P. over large deposits at Yampi Sound, all iron ore deposits in W.A. have been temporarily reserved to the Crown by the State Government, and as a result are at present excluded from the normal operation of the Mining Act.

Should acquisition of leases to mine ore be desired, whether for supply to a local steel industry or whether for foreign export as raw ore, initial negotiations would have to be carried out with the State Government at a ministerial level.

If a new Australian steel industry is envisaged, it is fairly certain that the Government would require the industry or at least a large part of it to be located in W.A. In return, as in the case of the £50 million Kwinana oil refinery project, considerable Government assistance in the provision of roads, railways, water, power, housing and port facilities could be expected.

Where the object is simply to mine and export iron ore as such, the principal factor would be the amount of royalty which the intending miner would be prepared to pay to the State. The

Government is keen to develop a limited export market to finance developmental works and has recently called for tenders for the purchase of 5 million tons of ore in deposits near Southern Cross and 10 million tons in deposits near Port Hedland. (See Appendices).

Tenders closed on 30th November 1959. The acceptance of any tender is subject to the issue of an export licence by the Commonwealth Government, which has maintained an embargo on exports of iron ore since 1938 in the interests of conserving our known reserves of iron ore. Following the State's move to promote an export market, the Prime Minister stated emphatically last October that his Government would not lift the ban on iron ore exports and the action of the W.A. Government in calling for tenders did not meet with Commonwealth approval.

The Premier has since said that the Government will proceed with its application for a licence to export iron ore. However, in view of the Commonwealth's strong opposition to the proposals, as indicated by the Prime Minister, there seems little hope that an export license will be granted in the near future.

A case supporting the export of iron ore has been put forward by Dr. J.A. Dunn in an article published in the Australian Financial Review of 15/10/59. Dr. Dunn is a former chief mineral economist of the Bureau of Mineral Resources.

In 1956, the partial lifting of a Commonwealth ban on the export of manganese ore, imposed in the belief that reserves were of a minor nature, encouraged vigorous prospecting which revealed many new deposits in W.A. and multiplied known reserves of manganese ore many times.

Arguing on the basis of the similar geological characteristics and general association of many iron and manganese deposits, Dr. Dunn believes that the lifting of the export ban on iron ore to a limited extent would likewise stimulate prospecting and known iron reserves would in turn be vastly increased. Thus, partial lifting of the ban would more likely increase than reduce our known resources of iron ore.

In a personal communication to the writer, the Minister for National Development has stated that the Commonwealth embargo would apply to up-graded products containing not less than 60% iron such as concentrates and sinters produced by the beneficiation of low-grade iron ores, and that the embargo would not apply to metallic products containing not less than 90% iron such as sponge iron.

Although both potential sources of iron, ilmenite and pyrite are not classed as iron ores by the State or Commonwealth Governments, consequently deposits containing these minerals may be taken up under the relevant provisions of the W.A. Mining Act and the Commonwealth embargo on the export of iron ores does not apply.

TASMANIA. The position regarding the Tasmanian iron ore deposits is similar to that existing in Western Australia. Specific iron ore deposits located at the Savage River, Blythe River, Dial Ranges, Highclere, Hampshire, Beaconsfield and Zeehan have been excluded from the normal operations of the Mining Act.

No leases have yet been granted in the above mentioned areas. Leases would only be granted on condition that the steel industry or large part of it is located in Tasmania. The Government has made no definite move towards developing an export market for iron ore.

According to the Assistant Director of Mines, Mr. Johnstone, a proposal to investigate and develop Tasmanian iron ore deposits, such as submitted to the N.Z. Government in connection with N.Z. iron sands, would receive favourable consideration.

SALIENT DATA

(See next page)

SALIENT DATA

A. I R O N & S T E E L

(1) WORLD PRODUCTION OF STEEL.

TABLE I
(Millions of Tons)

1953		1957	
U.S.A.	99.65	U.S.A.	100.64
U.S.S.R.	37.50	U.S.S.R.	50.00
U.K.	17.61	Fed.Rep.Germany	24.12
Fed.Rep.Germany	15.18	U.K.	21.70
France	9.84	France	13.87
Japan	7.54	Japan	12.37
Belgium	4.43	Italy	6.67
Czechoslovakia	4.36	Belgium	6.18
Canada	3.68	Poland	5.22
Poland	3.55	Czechoslovakia	5.08
Italy	3.45	Canada	4.50
Luxemburg	2.62	Luxemburg	3.44
East Germany	2.14	Australia	3.02
Australia	2.04	East Germany	2.85
India	1.51	India	1.72
	215.10		261.38

(2) AUSTRALIAN PRODUCTION & TRADE

TABLE II

(Tons)

Iron Ore	1952	1953	1954	1955	1956	1957
Produced	2,907,754	3,298,718	3,518,804	3,572,609	3,923,985	3,80
Imported	-	-	17	32	14,052	20
Pig Iron						
Produced	1,549,200	1,842,400	1,856,013	1,797,533	2,074,467	2,20
Exported	64,700	211,216	33,738	44,892	16,420	1
Imported	6,232	-	-	-	-	
Steel Ingot						
Production	1,625,900	2,043,100	2,210,611	2,200,555	2,539,061	3,02
Exported (all products)	91,997	219,934	78,090	31,374	122,281	26
Imported ""	n.a.	n.a.	145,927	458,523	220,455	8
... Plate						
Production	-	-	-	-	-	1
Imported	161,014	82,798	127,300	145,938	120,917	14

* Excluding scrap

n.a. Not available

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1955.

(3) PRICES OF IRON & STEEL PRODUCTS. The prices of Australian iron and steel products compared with the approximate prices of similar products in U.S.A. and U.K. expressed in Australian currency are as follows:

TABLE III
(£A per ton)

	1953			1954			1955		
	Aust.	U.S.A.	U.K.	Aust.	U.S.A.	U.K.	Aust.	U.S.A.	UK
Pig Iron	18.4	n.a.	17.4	19.9	26.11	18.4	21.5	26.4	19.
Steel-Heavy Structural	30.8	n.a.	35.6	33.5	36.9	35.5	36.5	45.9	36.
Merchant bars	3200	n.a.	35.6	35.0	36.9	35.5	37.5	46.6	39.
Rails heavy	33.5	n.a.	36.5	36.5	38.7	36.5	39.0	47.3	38.
Plates	36.0	n.a.	37.8	39.1	36.6	37.8	42.4	45.1	39.

	1956			1957			1958		
	Aust.	U.S.A.	U.K.	Aust.	U.S.A.	U.K.	Aust.	U.S.A.	U.K.
Pig Iron	21.5	27.7	22.0	21.5	29.6	26.2	21.5	29.6	-
Steel-Heavy Structural	40.5	48.2	42.6	40.5	52.8	50.3	n.a.	52.8	n.a.
Merchant bars	40.5	48.8	43.8	40.5	53.9	50.5	n.a.	53.9	n.a.
Rails heavy	42.0	49.3	44.4	42.0	54.9	51.0	n.a.	54.9	n.a.
Plates	44.4	46.4	45.0	44.4	50.9	57.8	n.a.	50.9	n.a.

	1959		
	Aust.	U.S.A.	U.K.
Pig Iron	21.5	* 29.6	-
Steel-Heavy Structural	n.a.	54.0	-

Merchant bars	-	-	-
Rails, heavy	n.a.	n.a.	n.a.
Plates	n.a.	n.a.	n.a.

n.a. = not available

* = prior to U.S. steel strike.

(4) AUSTRALIAN STEEL MAKING COSTS. Australian steel-making costs are amongst the lowest in the world, the contributing factors being the high quality and grade of the ore, the coastal location of the deposits and works and the complete integration of all phases of the industry.

An indication of Australian steel-making costs was given in the annual reports of the Director of Mines, South Australia, dated 1954 and 1955. The costs stated therein are as follows:

TABLE IV

Raw Material Costs per ton (delivered to Steelworks, N.S.W.)

	1939			1943			1955 (Est)		
	£	S	D	£	S	D	£	S	D
Iron Ore (S.A.	0	8	0	1	5	0	2	10	0
Coke (N.S.W.)	0	15	0	1	5	0	2	10	0
Limestone (S.A.)	0	15	0	1	5	0	2	10	0

(Table IV Cont'd)

Cost per ton of Basic Pig Iron (Port Kembla and Newcastle)

	1939			1943			1955 (est.)		
Iron ore (1.6 tons)	£0	15	0	£2	0	0	£4	0	0
Coke (0.81 tons)	0	12	0	1	5	0	2	10	0
Limestone (0.38 tons)	0	3	0	0	5	0	0	10	0
Total raw materials	1	10	0	3	10	0	7	0	0
Plant costs	0	10	0	0	10	0	1	0	0
Total costs	2	0	0	4	0	0	8	0	0

Cost per ton of Ingot Steel (Port Kembla and Newcastle)

	1939			1943			1955 (est.)		
	£	S	D	£	S	D	£	S	D
Feed materials	2	0	0	4	0	0	8	0	0
Plant costs	1	5	0	1	10	0	2	10	0
Total costs	3	5	0	5	10	0	10	10	0

Cost per ton of Blooms (Pt. Kembla & Newcastle)

	1939			1943			1955 (est.)		
	£	S	D	£	S	D	£	S	D
Ingot Steel	3	5	0	5	10	0	10	10	0
Plant costs & losses	0	15	0	1	0	0	1	10	0
Total costs	4	0	0	6	10	0	12	0	0

Cost per ton of Billets (Port Kembla and Newcastle)

	1939			1943			1955 (est.)		
	£	S	D	£	S	D	£	S	D
Blooms	4	0	0	6	10	0	12	0	0
Plant costs and losses	0	15	0	0	15	0	1	10	0
Total costs	4	15	0	7	5	0	13	10	0

Cost per ton of Merchant Bar (Port Kembla and Newcastle)

	1939			1943			1955 (est.)		
	£	S	D	£	S	D	£	S	D
Billets	4	15	0	7	5	0	13	10	0
Plant costs and losses	1	10	0	1	15	0	3	0	0
Total costs	6	5	0	9	0	0	16	10	0

Cost per ton of Structural Steel (Port Kembla & Newcastle)

	1939			1943			1955 (est.)		
	£	S	D	£	S	D	£	S	D
Blooms	4	0	0	6	10	0	12	0	0
Plant costs & losses	2	0	0	2	15	0	6	0	0
Total costs	6	0	0	9	5	0	18	0	0

The above costs are direct costs at the plant and do not include overheads for central administration or capital charges. Present direct costs at plants would be perhaps 10-20% higher than the 1955 rates.

Exhibit "M" - Preliminary
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On the basis of the above figures, B.H.P's present production costs for pig iron and ingot steel, excluding overheads for central administration and capital charges, would be in the vicinity of £9-10 and £12-13 per ton, respectively.

(5) AUSTRALIA'S FUTURE STEEL REQUIREMENTS: Due to the fundamental and vital role of steel in the economy of the civilized world, the steel industry is more susceptible to the ebb and flow of business activity than any other industry. Consequently steel production and consumption may be subject to violent fluctuations from year to year, making it extremely difficult to

forecast demand for some years ahead. In the past, Australia has been no exception to this rule.

Because of these difficulties, a detailed study of the problem would serve little purpose. However, it is considered that the following estimate, obtained by compounding population increase and increase in per capita consumption of steel, does give a crude picture of demand growth in Australia up to 1975, assuming no major industrial recession takes place.

Since the end of World War II, Australia's consumption of ingot steel has risen from 250 lbs. to 700 lbs per capita per annum, representing an average increase of some 30 lbs per capita per annum.

In view of the great industrial expansion now taking place in this country and the likelihood of continued improvement in living standards, it does not seem unreasonable to assume that the above rate will be maintained for the next 10-15 years. On this basis, the demand growth for ingot steel would be as follows:

TABLE V

	1959	1960	1965	1970	1975
Population (millions)	10.1	10.3	11.4	12.5	13.6
Consumption (lbs/ capita/annum)	700	730	880	1030	1180
Consumption (millions of tons)	3.2	3.4	4.5	5.7	7.3

~~Existing plant capacity of about 3.2 million ingot tons is about equal to consumption.~~ Present consumption by States would be roughly: N.S.W. 35%; Victoria 30%; South Australia 15%; Queensland 11%; Tasmania 2%; Western Australia 5%; and Commonwealth Territories 2%.

Assuming new iron and steel capacity will cost £120 per annual ton, on the basis of the above estimate, maintenance of our self sufficiency in steel, without regard for export markets, would involve an average expenditure of some £30 million per year between 1960 and 1975.

This compares with the figure of £15 million per year spent by B.H.P. over the last five years on plant expansion. To protect the equity of major shareholders, in the past, the Company has preferred to finance expansions out of revenue rather than by new capital issues. This, and the lack of opposition, are the principal reasons why Australia has never won her place as a significant exporter of iron and steel products.

On the basis of Table V, the preservation of our self sufficiency in steel up to 1975 by B.H.P. would involve the company in an annual capital expenditure of £30 million instead of £15 million. Such an amount would probably be beyond the Company's policy of financing expansion largely from revenue, without considerable increases in its iron and steel prices.

* Present U.S. consumption of ingot steel is approximately 1700/lbs/capita/annum.

SALIENT DATA

(B) T I T A N I U M P I G M E N T

The U.S.A. is the world's largest producer and consumer of titanium pigments with a consumption of about half a million tons of pigment per year, equivalent to an annual per capita consumption of 6.5 lbs.

Australia's production, imports and consumption are as follows:

TABLE VI

TONS

	1952	1953	1954	1955	1956	1957	1958
Production	2,143	3,400	4,503	5,200	6,200	6,400	*8,000
Imports	1,583	4,816	5,906	7,252	8,177	6,172	6,996
Exports	-	-	-	-	-	-	-
Consumption	3,726	8,216	10,409	12,452	14,377	12,572	14,996

* approximate figure only

Australia's sole producer of titanium pigment is Australian Titan Products Pty. Ltd. situated at Burnie in Tasmania. Average cost of imported pigment in 1958 F.O.B. port of shipment was £A212/ton. To this figure must be added overseas freight, local freight, insurance, duty etc. In 1958/59, 182 tons of pigment imported into W.A. from eastern States cost £A265 per ton landed at Fremantle.

Consumption of titanium pigment by manufactures is as follows:

TABLE VII

	%
Paints, enamels and lacquers	54
Paper	13
Rubber	5
Floor coverings	12
Coated fabrics and textiles	4
Printing Ink	3.5
Miscellaneous	8.5
	100.0

AUSTRALIA'S FUTURE PIGMENT REQUIREMENTS: Like steel, a crude picture of our future requirements of titanium pigment can be obtained by compounding population growth with the anticipated increase in per capita consumption.

Since 1945 our consumption of titanium pigment has risen from 0.5 lbs. to the present 3.3 lbs. per capita per annum, representing an average annual increase of approximately 0.2 lbs. Assuming no major industrial recession occurs and the above rate of increase is maintained, the estimated demand for pigment up to 1975 is as follows:

TABLE VIII

	1959	1960	1965	1970	1975
Population (Millions)	10.1	10.3	11.4	12.5	13.6
Consumption (lbs/capita/annum)	3.3	3.5	4.5	5.5	6.5
Consumption (thousands of tons)	15,000	16,000	23,000	31,000	39,000

* * * *

RAW MATERIALS

Raw materials which largely determine the economics of an iron and steel industry comprise iron ore, coal and limestone. Those required for the production of titanium pigment comprise ilmenite and sulphur or sulphur-bearing ores.

IRON ORE: High grade iron ore contains at least 60% iron, the maximum possible content in natural deposits being about 68%. Ore containing less than 35% iron is regarded as low-grade. The average grade of ore mined by B.H.P. in Australia is about 60-65% iron, in U.K. 28% iron and in U.S.A. about 50% iron.

For blast furnace operations, the ore should contain at least 40% iron. Ores containing less than 40% must be up-graded by blending with high grade ores or by beneficiation. Fine ores are also unsuitable and must be converted to lump form by agglomerating and sintering. Other ores containing undesirable constituents such as sulphur, must be calcined or roasted to remove such constituents. Ores containing more than 2% titanium cannot be economically smelted in conventional blast furnaces.

Other processes are less critical. Direct reduction methods can treat fine ores, complex ores including those high in titanium, and are more tolerant towards sulphur. Electric smelting methods can treat fine ores and ores high in titanium.

Iron ore deposits of immediate economic importance occur in Western Australia, Tasmania and Victoria. Deposits in other States are of less interest and have not been considered in this report because of their less favourable location as in Queensland,

small reserves as in N.S.W., or because all the known economic deposits are already controlled by B.H.P. as in South Australia.

(1) Western Australia: Location and estimates of reserves in iron ore deposits as determined by the W.A. Geological Survey are as follows:

TABLE IX

IRON ORE LOCALITIES AND ORE RESERVE ESTIMATES - W.A.

LOCALITY	INFERRED TONNAGE ABOVE PLAIN LEVEL (LONG TONS 2240 LBS)	AVERAGE CONTENT OF METALLIC IRON PER CENT	METHOD OF SURVEY	REMARKS
Koolan Island, Yampi Sound, about 90 miles north of Derby the nearest port	92,000,000.This tonnage may be considered as indicated.	67.2 (main ore body of 87,000,000 tons)	Extensive trenching, pitting, and adit tunnels down to sea level. Theodolite and precise levelling surveys	The ore is practically pure hematite. Navigable deep water channel permits large vessels to approach within loading distance of the coast.
Cockatoo Island. Yampi Sound, about 90 miles north of Derby, the nearest port	16,600,000. This tonnage might be considered as indicated.	69	do	do
Wilgie Mia (Weld Range) 35 miles in direction N 15° W from Cue, which is 260 miles by rail or road from the port of Geraldton.	18,810,000	64.38	No detailed survey. Dimensions measured approx. with linen tape. Heights by aneroid barometer. Surface samples only.	High grade hematite ore. Deposit accessible from Cue by road and station tracks.
Koolyanobbing. 34 Miles N 26°E from Southern Cross railway station. 250 miles by rail from Fremantle	69,250,000 (down to water level, assumed to be 180 feet below base contour)	Surface ore (limonite & hematite) 63.24 deep ore (800 ft. vertical below outcrop) 50.00	Contoured maps of ore bodies available. Detailed outcrops sampling. Sample lines at intervals of approx.100 ft. 12 diamond drill holes to test-drill iron ore for pyrite below zone of oxidation.	There are five main ore bodies, mainly hematite, confined to high ridges. Ore disposed in a manner suitable for quarrying. Drilling exploration shows that the deposits continue downwards as massive, banded magnesite ore for

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1964.

LOCALITY	INFERRED TONNAGE ABOVE PLAIN LEVEL (LONG TONS 2240 LBS)	AVERAGE CONTENT OF METALLIC IRON PER CENT	METHOD OF SURVEY	R E M A R K S
				at least 1,250 ft. vertically below the outcrop. Very large reserves of deep ore are available.
Mt. Hale. 85 miles in a direction N. 65° W from Meekatharra, the nearest railhead	1,380,000	67.77	No detailed survey. Dimensions measured approx. with linen tape. Heights by aneroid barometer. Surface samples only.	High grade hematite lens in jaspilites
Mt. Gould. 90 miles in a direction N 53° W from Meekatharra	14,970,000	66.98	do	The ore bodies are four well defined, high grade hematite lenses in a jaspilite horizon.
Mt. Gibson. About 60 miles by road northeast of Wubin. The distance by rail from Wubin to Fremantle is 207 miles and from Wubin to Geraldton 203	2,250,000	65	do	The deposit consists of two high grade hematite lenses in a low grade jaspilite formation.
Mt. Caudan, 40 miles by road south of Southern Cross	Unknown - Tonnage above plain level insignificant. Large reserves of deep ore are available.	50.70 to 60.22 (outcrop)	Outcrop of ore body mapped on scale 5 chs. = 1 inch. Downward continuation of ore body tested by two diamond drill holes	Surface ore is mainly limenite. One diamond drill hole penetrated magnetite, siderite and pyrrhotite below zone of oxidation.

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1965.

Mt.Goldsworthy. (Ellarine Hills). 85 miles by road from Pt.Hedland, the nearest port.	10,750,000	64.23	Contour map (200ft. = 1 inch) of ore bodies available. Main lens surface sampled at 200 ft. intervals. (Report No.56, Aerial, Geological & Geophysical Survey of N.Aust).	High grade hematite lenses in jaspilites.

LOCALITY	INFERRED TONNAGE ABOVE PLAIN LEVEL (LONG TONS 2240 LBS)	AVERAGE CONTENT OF METALLIC IRON PER CENT	METHOD OF SURVEY	R E M A R K S
Tallering Range. 31 miles in direction N 14° E from Mullewa, the nearest rail centre. Mullewa to Geraldton (nearest post) 70 miles	3,014,333 (above plain level) 2,010,665 (oxidised ore to 320 ft. below surface) 5,044,998 (total to depth of 320 ft.)	64.90 (outcrop)	No detailed survey. Dimensions measured approx. with linen tape. Heights by oneroid barometer. Downward continuation of ore bodies at present being tested by four diamond drill holes. (July, 1959)	Three hematite lenses in jaspilites. Lower limit of oxidised ore unknown. Diamond drilling shows ore to be still oxidised at depth of 320 feet. Magnetite below zone of oxidation.
Bungalbin. About 40 miles north of Koolyanobbing	40,915,000	60+	No detailed survey. Deposits measured approx. only. Outcrop samples only.	Three high grade hematite lenses confined to high ridges. Much of it should be cheaply minerable.
Mt. Walton. About 40 miles N.E. of Koolyanobbing.	2,500,000	60+	No detailed survey. Deposits measured approx. only. Outcrop samples only.	High grade hematite lens in jaspilites. The Bungalbin and Walton deposits should be considered in conjunction with Koolyanobbing deposit.

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1966.

Joyner's Find. Deposit is 2 miles N. of Wiluna-Sandstone Road, from a point on that road 23 miles from Wiluna. Immediately to the E. of Lyndon Goldmine (abandoned)	2,275,000	68	No detailed survey. Dimensions measured approx. only with linen tape. Heights by aneroid barometer. Surface samples only.	Deposit consists essentially of four iron rich jaspilite beds, interbedded with greenstone schists. Nearly pure hematite at the surface.
Mt. Rankin. 15 miles by road S.W. of Southern Cross.	4,000,000	34.86	No detailed survey. Measurements with linen tape. Heights by aneroid barometer. Surface samples only.	Hematitic jaspilites. Large additional tonnages may be available below laterite capped hills south of Mt. Rankin.
*.... 18 miles by road N.N.West from Bullfinch	4,000,000	34	do	Hematitic jaspilites
Golden Valley, 9 miles by road N.W. from Bullfinch	2,200,000	36.78	do	Hematitic jaspilites

LOCALITY	INFERRED TONNAGE ABOVE PLAIN LEVEL (LONG TONS 2240 LBS)	AVERAGE CONTENT OF METALLIC IRON PER CENT	METHOD OF SURVEY	R E M A R K S
Day's Find. 5 miles N.W. from Bullfinch	2,208,000	27 to 34	No detailed survey. Measurements with linen tape. Heights by aneroid barometer. Surface samples only	Hematitic jaspilites.

*.... Illegible

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1967.

Noresman. Occurrences are located approx. 4 miles S.S.E. of Norseman, which is 125 miles by rail from the port of Esperance.	18,000,000	32 to 39	do	Hematitic jaspilites.
Boolycoo Range, 44 miles by road E. of Sandstone. Rail to Mt. Magnet, 345 miles from Port of Geraldton	Large quantities in the order of tens of millions of tons, of medium to low grade ore are available.	39 & 71	Deposit not surveyed. Approx. measurements at south end of range only. Height by aneroid barometer. Outcrop samples only.	Ferruginous jaspilites. Mostly hematite.
Maynard Hills. Situated near Bulya Downs homestead, approx. 130 miles N.W. from Monzies, the nearest accessible railway.	61,000,000	37	Deposit not surveyed. Approx. measurements at south end of range only. Height by aneroid barometer. Outcrop samples only.	Ferruginous jaspilites. Mostly hematite. A high grade lens of 67% Fe ore occurs at Mt. Richardson. 230,000 tons.
Montague Range. Access to southern part of the range via Sandstone-Miluna Road. Distance from Sandstone 60 miles. Mt. Marion and Mt. Townsend are two prominent peaks in northern part of range.	12,000,000.(Mt. Marion and Mt.Townsend only)	34.02 (Mt. Marion and Mt.Townsend)	Surface sampling, measurements with linen tape and height determination by aneroid barometer confined to Mt. Marion and Mt. Townsend.	Large tonnages of ferruginous jaspilite averaging 35% Fe occur in southern portion of the range.

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1968.

LOCALITY	INFERRED TONNAGE ABOVE PLAIN LEVEL (LONG TONS 2240 LBS)	AVERAGE CONTENT OF METALLIC IRON PER CENT	METHOD OF SURVEY	R E M A R K S
Gabanintha. 25 miles by road S.S.E. from Meekatharra. Rail to Meekatharra	200,000	53.77	Measurements with linen tape. Surface samples at 100 ft. intervals	Limonite, hematite, magnetite. Ore contains 8.88% titanium.
Mt. Magnet. Warramboo Hill (Trig.Stn. 15). 2½ miles N.W. of Mt. Magnet townsite. 200 miles by rail or road from Geraldton	9,000,000	35.65	Measurements with linen tape. Heights by aneroid barometer. Surface samples only.	Hematitic jaspilites. Deposit easily accessible.
Mt. Magnet. Deposit occurs at Jumbulyer, 10 miles S.S.W. from Mt. Magnet townsite	10,000,000	36.30	Measurements with linen tape. Heights by aneroid barometer. Surface samples only. Surface samples at ¼ mile intervals.	Hematitic jaspilites. Easily accessible from Mt. Magnet.
Edjudina Range. Accessible by road from Kalgoorlie via Kanowna, Yarri & Paget. Distances approx. 120 miles.	Unknown, but in the order of tens of millions of tons	38.09	No detailed survey. Some measurements with linen tape. Heights by aneroid barometer. Surface samples only.	Hematitic jaspilites. Deposits are remote from transport facilities and not of easy accessibility.

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1969.

Ida Range. Central portion of range 70 miles by road N.W. of Menzies, the nearest rail centre. Mt.Bevan, Mt.Mason and Mt. Ida are the most prominent peaks.	5,625,000 (Mt.Bevon) 450,000 (Mt.Mason) 1,600,000 (Mt.Ida)	38.86 (Mt.Bevon) 67.12 (Mt.Mason) 38.47 (Mt.Ida)	No detailed survey. Measurements with linen tape, height determinations by aneroid barometer. Surface sampling confined to Mt. Bevon, Mt. Mason and Mt. Ida.	A high grade hematite lens occurs at Mt. Mason - The overall tonnage in the Ida Range may be in the order of 30,000,000 tons of 30-35% Fe ore.

LOCALITY	INFERRED TONNAGE ABOVE PLAIN LEVEL (LONG TONS 2240 LBS)	AVERAGE CONTENT OF METALLIC IRON PER CENT	METHOD OF SURVEY	R E M A R K S
Brooking Hills. 80 miles N.W. from Menzies. Immediately east of north-eastern arm of Lake Barlee	23,016,000	38.28	No detailed survey. Measurements with linen tape. Heights by aneroid barometer. Surface samples only.	Hematitic jaspilites.
Evanston. 102 miles by road north of Bullfinch, which is 22 miles by road N.W. of Southern Cross.	1,000,000	30.94	do	Hematitic jaspilites.
Bremer Range. Deposit situated 77 miles by road west of Daniell railway siding, which is 96 miles by rail from the port of Esperance	16,500,000	40.33	No detailed survey. Measurements with linen tape. Heights by aneroid barometer. Surface samples only.	Hematitic jaspilites

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1970.

Johnston Range. Eastern extremity of the range 10 miles north of Evanston	13,000,000	36.84	No detailed survey. Measurements with linen tape. Heights by aneroid barometer. Surface samples only.	Jematitic jaspilites
Die Hardy Range. 15 miles south of Evanston, and 85 miles north of Bullfinch	1,625,000	36.64	do	Hematitic jaspilites. Large quantities of medium to low grade ore can be expected in the broken line of jaspilite hills between Die Hardy and Evanston.
Riedel's Find. 64 miles by road north of Bullfinch	1,440,000	37.46	do	Hematitic jaspilites.

Exhibit "M" - Preliminary Report to E.R. Hudson from A.G. Palmer 1971.

The Koolan Island, Cockatoo Island and Koolyanobbing deposits, with the exception of the Dowd's Hill area, are held under perpetual lease by B.H.P. All other deposits in W.A. are reserved to the Crown and would be available to an applicant, subject to royalty and other conditions, approved by the State Government.

Excluding deposits held by B.H.P. on present knowledge, the best of the W.A. deposits are located in the Southern Cross district at Dowd's Hill, Mt. Caudan and Bungalbin. However, although there are fairly large tonnages of high-grade ore available, none of the deposits are particularly well located as a potential source of ore for initiating a new steel industry.

At the present time, the Southern Cross deposits, and also those located at Mt. Goldsworthy near Port Hedland, would be of more interest as a source of iron ore for premium export markets such as exist in Japan. In this regard, as mentioned elsewhere, the State Government, counter to the wishes of the Commonwealth, has recently called for tenders for the purchase of iron ore contained in the Mt. Goldsworthy and Dowd's Hill deposits.

(2) Tasmania. The principal deposits of iron ore in Tasmania occur at the following localities:

Savage River
Blythe River
Dial Ranges
Highclere
Hampshire
Beaconsfield
Zeehan

Although found many years ago, due to the absence of any detailed field work prior to 1956, very little is known about the reserves available in these deposits.

However, in 1956, following the reservation of these deposits to the Crown, an aerial magnetometer survey covering known iron-bearing areas in N.W. Tasmania was carried out by the Bureau of Mineral Resources on behalf of the State Government. This survey revealed some interesting anomalies including a

pronounced one crossing the Savage River in the vicinity of deposits found many years ago and originally named the Rio Tinto deposits.

The Survey also indicated the presence of a completely new deposit located in a large prospecting reserve which is held by the Rio Tinto Mining Company. Due to the granting of this area prior to the reservation of known deposits, any new iron ore deposits found by Rio Tinto in its prospecting area would not be reserved to the Crown, thus permitting the Company to take up mining rights over the new deposit under the normal operation of the Mining Act. Rio Tinto is now actively exploring the area under its control.

Following the magnetometer survey, ground investigations and drilling to a depth of 550 feet below outcrop was undertaken in the Savage River area reserved to the Crown. The drilling, comprising two diamond drill holes, was carried out on behalf of the Mines Department by Rio Tinto.

As a result of the drilling, together with ancilliary geological and geophysical work, the Mines Department considers that ore reserves in this area will exceed 200 million tons. The average grade of the deposit inferred from the drilling and surface work is 50% iron and 1.7% titanium dioxide.

Preliminary ore dressing investigations on material obtained from drill cores show that the ore would probably be amenable to magnetic methods of concentration. In the tests a magnetic concentrate was readily obtained containing 64.9% iron and 1.8% titanium dioxide with a recovery of 97.6%. Sulphur was less than 0.3% and phosphorous pentoxide less than 0.03. A concentrate of this composition should be suitable for blast furnace or electric smelting and direct reduction methods.

The Savage River deposits are situated in very rough country some 15 miles inland from Pieman Heads on the N.W. coast. The deposits are about 5 miles by air from the nineteen mile peg on the Corinna-Waratah Road. At present this road is suitable for light traffic only. All diamond drilling and other equipment was flown from the Corinna Road to the drill sites by helicopter. Nearest rail connection is at Guildford about 35 air miles to the north-east.

The Pieman River is said to be navigable up to Corinna where the stream is about 80 feet deep. Development of the deposits would involve major harbour works and necessitate a substantial breakwater at Pieman Heads. Transportation of ore from the deposits to Corinna would require the construction of some 25 miles of first class road, or alternatively, an aerial ropeway over some lesser distance.

Due to insufficient data being available, details and reserves in other deposits in Tasmania cannot be given at this juncture.

(3) Victoria. Although ~~the~~ Victoria has small established reserves of iron ore, it could be that the apparent scarcity of iron ore deposits is due to a dearth of exploration rather than lackof deposits. With this in mind and in view of the States huge reserves of favourably located brown coal, intensive exploration for iron ore in Victoria would be no less justified than exploration of the Tasmanian deposits.

Deposits of iron ore occur at Nowa-Nowa, Buchan, Dookie, Wartook and Lal-Lal. On present knowledge, the most important are the Nowa-Nowa deposits in East Gippsland, located some 140 miles east of Yallourn.

Recent surveys in the Nowa Nowa area carried out by the Victorian Mines Department have revealed reserves of between 5 and 7 million tons of high grade magnetite and hematite ore varying in thickness from 80 to several hundred feet. The total metallic iron content varies from 45% to 68% and averages 50%. Sulphur varies from 1% to 3% whilst phosphorous is about 0.01%.

COAL. Only bituminous coals capable of yielding a high strength coke containing less than 1.25% sulphur can be utilized for conventional blast furnace operations. Weak cokes and chars produced from lower rank coals would be crushed by the large internal pressures exerted by the charge and would choke off the air blast in the furnace.

Some of the lower rank coals, normally regarded as non-coking, will respond to special treatment and yield types of coke. However, the high cost of

producing such coke would probably preclude its use in normal blast furnaces.

Direct reduction and electric smelting methods will operate satisfactorily using weak cokes and chars providing the sulphur content does not exceed about 2%.

Proved and probable reserves of Australian coals are as follows:-

TABLE X

State	Black Coal Millions of Tons	Brown Coal Millions of Tons
New South Wales	11,700	-
Queensland	1,800	-
Western Australia	*1,900	-
Victoria	16	37,000
Tasmania	250	-
South Australia	390	230

*Includes roughly 1,600 million tons as prospective reserves.

Queensland and N.S.W. are the only Australian States at present self-sufficient in coal.

New South Wales. The main coal province of N.S.W. is located in the central eastern portion of the State, and is subdivided into coalfields and districts as follows

Coalfield	Main Coal Districts
Northern	Newcastle East Maitland Maitland-Cessnock-Greta Muswellbrook-Singleton Scone-Wingen Gloucester
North Western	Gunnedah-Curlewis Werris Creek Willow Tree Nandewar
Southern	Illawarra Douglas Park Clyde River

South Western	Wollondilly-Nattai Moss Vale - Berrima
Central	Sydney
Western	Lithgow Kandos Ulan Elong

Good quality coking coals occur throughout the main province with their main development in the Northern and Southern coalfields. However, from the steel making aspect, reserves of accessible and cheaply won coking coal are limited and are to a large extent controlled by B.H.P.

Large reserves of lower grade coals exist which would probably be suitable for direct reduction and other methods of producing iron. However, the quantity of cheaply won coals would again be somewhat limited.

Although reserves of potential open cut coal has been estimated at some 100 million tons, many of the deposits are remote from transport facilities and the benefit of low cost mining would be offset by high freights. The most accessible open cut areas, containing in the order of 20-30 million tons occur between Newcastle and Singleton. The bulk of the State's open cut production is won from these latter areas. Production costs for open cut coal mining in N.S.W. range from 40/- to 45/- per ton.

Any new steel industry using N.S.W. coals would have to rely largely on underground coal. Approximately 95% of the State's coal production is won from underground workings. Production costs for N.S.W. coal won by underground methods range between 45/- and 55/- per ton. Price of gas coal F.O.B. Newcastle is about 85/- per ton.

Queensland. Although possessing large potential reserves of coal, the majority of these deposits are too remote to be of any immediate interest as raw material for an iron and steel industry. This position could of course change if large deposits of iron ore, favourably located with respect to the coal fields, were discovered in Queensland.

Because of its proximity to Brisbane, the Ipswich coalfield is the chief supplier of coal in Queensland, producing about 40% of the State's requirements,

solely by underground methods. Both coking and non-coking coals of low sulphur content occur. Proved, probable and possible reserves total about 50 million tons.

On present knowledge, potentially, the most important coal area in Queensland is the Blair Athol Field, located some 240 miles by rail westerly from Rockhampton. The entire reserves of 200 million tons occur at shallow depth and are available for open cutting by low cost methods.

Despite the shallow depth the coal is unweathered. In type, it is a high volatile bituminous coal, non-coking, low in sulphur, and suitable for steam raising purposes. The field has been recently taken up under option by Commonwealth Aluminium Corporation Pty. Ltd. as a possible source of power in connection with the proposed aluminium industry utilizing Cape York bauxite deposits.

Western Australia. The only known coalfield of economic importance in Western Australia is the Collie Coalfield situated some 125 miles by rail south from Perth and 42 miles west of Bunbury. The Collie coal is a sub-bituminous, non-coking coal which is used principally for steam raising purposes. Average sulphur content is about 0.5%. Of the total reserves, roughly 100 million tons would be amenable to open cut operation, assuming a maximum stripping ratio of 8:1.

Victoria. Reserves of coal in Victoria are as follows:

TABLE XI

(a) Black Coal. (Millions of tons)

Districts	Proved	Probable	Possible	TOTAL
Wonthaggi	6.3	2.9	-	9.2
Korumburra, etc.	-	-	21.0	21.0
Other Gippsland	-	-	3.4	3.4
	6.3	2.9	24.4	33.6

(b) Brown Coal (Millions of tons)

Districts	Proved and Probable
Altona-Bacchus Marsh area	7,500
Latrobe Valley area	27,000
Alberton area	2,300
Yarrgon	300
Other deposits	100
	37,200

The Victorian black coal is a bituminous type of relatively low rank used principally for steam raising purpose. It is unsuitable for gas making and coking purposes. Due to limited reserves, these coals are of little interest from the standpoint of an iron and steel industry.

Victoria has, however, very large reserves of favourably located brown coal which are to a large extent amenable to cheap open cut mining. To date, the non-coking character and high moisture content of these coals (50-65%) has prevented their use in the steel industry.

However, with the advent of new process for the extraction of iron from ores, and the development of methods capable of producing hard chars from brown coal, which have already reached the pilot plant stage, there is little doubt that the Victorian brown coals must eventually play an important part in Australia's steel industry.

Present production of brown coal is about 11 million tons per year of which some 60% is used in the raw state for power generation at stations located on the coalfields, the remainder being processed into briquettes. Briquettes are

used for power generation, as fuel for locomotives, general industrial and domestic purposes, and also for the production of town gas.

Production of town gas by the Gas and Fuel Corporation of Victoria commenced in 1956 using the Lurgi High Pressure Gasification System. The Corporation at present supplies about one third of Melbourne's requirements. The gas is piped 103 miles from Morwell to Melbourne. In addition to gas, tar, crude light oil and char residue are obtained.

Eventually the commercial production of hard char and synthetic fuels is envisaged. It is expected that expansion plans now under development will make Victoria independent of coal supplies from other States by 1966.

Composition of briquettes processed from Yallourn brown coal is as follows:

TABLE XII

Volatiles	43.2
Fixed Carbon	40.0
Ash	1.8
Moisture	15.0

Hard char produced from Victorian brown coal briquettes contains 4-6% ash, 0.25-0.3% sulphur and negligible phosphorous. Char of this type would probably be very suitable for the production of pig or sponge iron by electric and direct reduction methods. In view of the low sulphur and phosphorous contents, relatively high quality iron could be produced from normal ore types.

Tasmania. Coal deposits of economic interest occur chiefly in the north-eastern, east and south east portions of the State. Continuity of the coal measures have been broken by faulting and erosion resulting in the formation of a number of small, isolated fields. Many of the seams themselves are heavily faulted and difficult to mine. Economic reserves of coal have been determined by the Geological Survey of Tasmania, approximately as follows:

TABLE XIII

Coalfield	Millions of tons
Mt. Nicholas-Dalmayne Fingall	97.8
Douglas-Dennison-Mt. Paul	8.0
Colebrook	1.4
Avoca	2.5
Catamaran	1.1
York Plains	0.1
Sandfly	5.3
Cygnet	0.7
Lawrenny	2.7
Mersey	0.1
Longford	0.2
Buckland	0.3
Preolenna	5.0
Barn Bluff	9.0
	134.2

Tasmania has no high-grade coking coal suitable for use in blast furnace smelting. As a possible source of raw material for a steel industry, based on other methods, the most important coalfield appears to be the Mt. Nicholas area some 55 miles east of Launceston. This field constitutes some 73% of the above reserves. Although non-coking, the coal is low in sulphur and would be suitable for iron ore reduction processes utilizing chars.

At the present time, Tasmania produces about 275,000 tons of coal per year as compared with 15 million tons in N.S.W. Imports from N.S.W. totalled 24,000 tons in 1957.

South Australia. This State is very poorly endowed with usable and accessible coal and as a result is to a large extent dependent for industrial purposes on black coal imported from New South Wales which, in 1957, totalled some 900,000 tons.

The principal operating field in South Australia is situated at Leigh Creek some 305 miles north of Adelaide. Present production is about 800,000 tons of coal per year, won by open cut methods. Proved and probable reserves stand at about 400 million tons, of which about 15 million tons would be amenable to open cutting.

The Leigh Creek coal is non-coking and sub-bituminous in character. Moisture content ranges between 30-40% whilst sulphur is generally less than 0.5%. The principal disadvantage of Leigh Creek coal is its remote location.

The large deposits of low-grade coal occur in the Inkerman-Balaclava area at the northern end of St. Vincent Gulf, where about 94 million tons have been indicated by drilling. However, from supplementary geological work, it is clear that very much greater reserves exist.

The coal type is a lignite of high moisture content, somewhat similar in composition to the brown coals of Victoria. Although more favourably located, the low quality of the lignites compared with Leigh Creek coals, plus the thinness of the seams and necessity of underground mining, has so far prevented the development of the Inkerman-Balaclava deposits.

LIMESTONE. The Commonwealth is very well endowed with limestones of various types suitable for fluxing in metallurgical operations, manufacture of Portland cement, agricultural and building lime, road metal and building stones. The principal deposits of limestone are located in the various States as follows:

Queensland: Chillagoe, Burdekin River, Fanning River, Reid River, Rockhampton, Gladstone, Silverwood, Gore, Clermont, Mackay-Proserpine, Texas, Springsure, Dawson Valley, Gympie, Ipswich.

New South Wales: Tamworth, Manilla, Yass, Bombala, Burragorang, Lower Hunter Valley, Marulan.

Victoria: Wombat, Limestone Creeks, Buchan, Bindi, Mansfield, Walhalla, Waratah Bay, Lilydale, Bairnsdale, Sale, Nowa Nowa, Woodside, Mornington Peninsula, Geelong, Maude, Portland, Warrnambool.

Tasmania: Railton, Mole Creek, Melrose, Beaconsfield, Zeehan, Queenstown, Gordon River, Adamsfield, Hobart, Maria Island.

South Australia: Adelaide, Augaston, Kapunda, Sellicks Hill, Normanville, Cape Gervis Peninsula, Ardrossan, Mt. Gambier, Murray Bridge, Klein Point.

*Western Australia: Southern Cross, West Kimberley, Nullabor Plain.

*Known limestone deposits in W.A. are generally poorly located and/or of low grade.

ILMENITE: To be suitable for pigment manufacture, the ilmenite must be readily soluble in sulphuric acid and contain less than 0.1% chromium and vanadium oxides. Higher chrome/vanadium contents will result in discolouration of the pigment product.

The only known commercial deposits of ilmenite in Australia meeting with these requirements are located on the south-east coast of Western Australia south of Perth. Exploitation of these deposits commenced in 1956. Particulars of the operating companies and reserves claimed are as follows:

TABLE XIV

COMPANY	PAID UP CAPITAL £	PLANT CAPACITY APPROX. TONS HEAVY MINERAL PER YEAR	RESERVES LOCATION	RESERVES ILMENITE TONS
Western Titanium N.L.	840,000	100,000	Ludlow	10,950,000
Westralian Oil Ltd.	895,470	100,000	Capel	3,100,000
			Yoganup	600,000
			Yoganup extended	300,000
			Tutunup	400,000
Cable (1956) Ltd.	300,000	50,000	Bunbury	250,000
Ilmenite Pty. Ltd.	?	50,000	Wonerup	?

Grades of the various deposits being worked range from 10-50% Ilmenite with subordinate amounts of zircon, rutile and monazite. The ilmenite itself contains from 50-62% titanium dioxide and 25-35% iron. All plants have or will have provision for recovering the subordinate minerals as by-products.

Ilmenite Pty. Ltd. is a subsidiary of Australian Titan Products Pty. Ltd. The whole of the Company's production is shipped to Burnie, Tasmania, for manufacture of titanium pigment.

The other operating companies are almost entirely dependent on foreign markets for disposal of their product. Owing to a slump in world markets, the F.O.B. price paid for Australian ilmenite has dropped from £5-7/ton in 1957 to £3½-4½/ton in 1959. As a result, with production costs ranging between £3½-5 per ton, the companies dependent on export markets are barely breaking even at the present time.

SULPHUR OR SULPHUR-BEARING MATERIAL - Australia has no commercial deposits of sulphur and requirements are wholly imported by the British Phosphate Commission on behalf of a pool from which consumers draw their supplies. The current price for imported sulphur is £17/5/- per ton.

Other sources of sulphur include pyrite and waste gases from oil refining, as carried out at Kwinana, W.A., and Kurnell, N.S.W., and the roasting of lead and zinc concentrates, as carried out at Risdon, Tasmania, Port Pirie, S.A. and Cockle Creek, N.S.W.

With raw materials amounting to some 50% of operating costs, of which sulphuric acid is the major item, assuming other factors remain constant, the principal locational factor for a pigment plant is to have access to cheap ilmenite and sources of sulphur or sulphur-bearing material.

Consequently, sources of sulphur in Western Australia are of particular interest in respect of pigment manufacture. Sources of potential economic interest include pyrites deposits, operated by Norseman G.M. N.L., pyrites underlying iron ore deposits at Koolyanobbing and sour waste gases from the Kwinana oil refinery.

The Norseman company (paid up capital £187,500) operates the Iron King mine situated at Norseman some 360 miles by rail from Fremantle. Proved and probable reserves of pyrites total 3.5 million tons. The approximate composition of lump pyrites as produced at the mine would be 42-45% sulphur and 37-40% iron. The capacity of the plant is about 250,000 tons of pyrites per year. Average price realised by the Company in 1957 was 3.16/- per unit of contained sulphur, F.O.R. Norseman.

A diamond drilling programme carried out by the W.A. Mines Department showed that some of the Koolyanobbing iron ore deposits, located some 250 miles by

rail from Fremantle, were underlain by bodies of pyrite.

The Dowd's Hill ore body, located in this area, was intersected by three drill holes over a length of 1500 feet at vertical depths of 1,090, 560, and 500, feet respectively. True widths of pyritic ore were 65 ft, 224 ft. and 30 ft. containing 35.2%, 24.6% and 38.9% sulphur.

A second ore body in the Koolyanobbing Hills was interesected by three holes over a length of 1100 feet at vertical depths of 850 ft., 620 ft. and 740 ft. respectively. True widths of pyritic ore

were 56 ft., 21 ft and 68 ft. containing 33.2%, 39.8% and 35.1% sulphur.

Other known deposits of pyrites occur at Ravensthorpe, Whim Creek, Nevoria and Parkers Range. During his visit to Western Australia, the writer was shown some specimens of massive pyrites, reputed to have been found on a farm near Bunbury. Due to the proximity of the ilmenite sands, deposits of pyrite in the Bunbury area would be of great interest.

Some inquiries were made at Kwinana concerning the possibility of utilizing sulphur in sour gases from the refining operations. According to Mr. G. Cessford, Assistant General Manager of the refinery, there are two gas streams containing sulphur, resulting from the refining processes.

One stream carried some 10-15 tons of sulphur per day in very low concentrations. The other gas stream carries about 10 tons of sulphur per day in high concentrations, and, as a result, is the most important of the two as a potential source of sulphur.

However, Mr. Cessford considers that the latter gas stream would need to carry at least 20 tons of sulphur per day to be of commercial interest. Although at present there is little likelihood of this figure being achieved, increases in production or production of high quality products than at present made, would result in greater quantities of sulphur being available in the waste gases.

POWER RESOURCES

Average power consumption in a large, fully integrated steelworks incorporating blast furnace smelting would be in the order of 400 KWH per ton of finished products (all types). A modern fully integrated plant would be capable of generating its own power requirements from surplus by-product gases resulting from the blast furnace processes.

A large fully integrated steelworks using direct reduction processes would also consume about 400 KWH per ton of finished product. However, in this case, there would probably be insufficient by-product gas available for self-sufficiency in power requirements.

Average power consumption in a large, fully integrated

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works employing electric smelting would be about 2,500 KWH. per ton of finished products. In this case there would certainly be insufficient by-product gases available to meet more than a very small part of this massive demand.

An integrated works using blast furnace smelting or direct reduction methods and producing, say, one million tons of finished products per year, would represent a power demand of 46 M.W. (continuous) as compared with 280 M.W. (continuous) for an electric plant of the same productivity.

Installed capacities of various types of generating plant by States are as follows:

TABLE XV

INSTALLED CAPACITY IN M.W.

	NSW	VIC.	QLND	S.A.	W.A.	TAS.	Snowy M.A.	Commonwealth Territory
Steam	1479	834	446	312	238	- -	-	-
Hydro	62	221	4	-	2	570	380	3
Diesel	56	45	33	12	20	-	-	13
TOTAL:	1597	1100	483	324	260	570	380	16

In States other than Tasmania, cost of power to large industrial consumers ranges between 2.0 - 3.0 pence per unit. In Tasmania the Hydro-Electric Commission has recently undertaken to supply power for certain industrial purposes at a price of 0.5 pence per kilowatt-hour unit.

In view of the low cost of power, Tasmania is of special interest with respect to electric pig iron smelting.

Following correspondence with the Commissioner, Mr. A.W. Knight, the position appears to be as follows:-

Installed capacity of the Tasmanian hydro-electric system has just been increased from 485 MW to 570 MW with the commissioning of the Liapootah power station. Other developments under construction will raise the capacity still further to about 800 M.W. by 1965/66. The greater part of the energy output from these

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developments is already earmarked to provide for definitely planned industrial expansion and normal load growth in the State.

Ample water power resources, capable of economic development, remain to be exploited in the west and north-west of the State. This remaining potential has been estimated as exceeding 1500 M.W. assuming a load factor of 60%. As an electric steel industry producing say 1,000,000 tons of steel products per year represents a power demand of some 280 M.W. (continuous), there is thus ample potential for an undertaking of this nature.

The Commission's developmental programme is financed from loan funds and the rate of construction is largely governed by the funds made available each year by the Loan Council to the State Government. It is the Commission's policy to plan and construct new developments to meet carefully prepared forecasts of demand which takes into account the known requirements of existing and projected industrial undertakings.

The Commission will not undertake to supply power in quantity at a future date at a firm price except on the basis of a firm contract under which the consumer agrees to take and begin paying for the supply on a specified date. In the absence of such an agreement, the commission would be unwilling to embark upon any large and costly development programme such as would be required for a large electric iron and steel industry.

ECONOMICS

Due to the impossibility of obtaining any precise information at this stage, the following assessments should only be regarded as a rough guide to the possible economics involved in the exploitation of iron ore and ilmenite resources.

Although there are many ways of attacking the problem, three main prospects have been selected for study as being roughly representative of the whole. They are -

PROSPECT 1. An iron and steel industry located in Tasmania and Victoria.

PROSPECT 2. A titanium pigment industry located in Western Australia.

PROSPECT 3. A small sponge iron industry in Western Australia.

PROSPECT 1. From a long-term view, an iron and steel industry, based principally on the use of Tasmanian ore and Victorian brown coal, with works located in Tasmania and Victoria seems a logical concept. The industry would be favourably located with respect to principal Australian markets and supplies of scrap. It would have abundant coal resources and the benefit of cheap hydro-power in Tasmania, whilst ships carrying ore from Tasmania to Victoria could be back loaded with char, briquettes or brown coal, and supplies.

Apart from the large capital investment required, the economics of such an industry would be largely determined by the cost of producing pig or sponge iron, which in turn is determined principally by the cost of assembling the raw materials, which may account for 70-90% of the cost of the iron product in non-electric processes.

In assessing the possible economics of the prospect, the following general assumptions have been made -

1. The ore source is the Savage River deposit in Tasmania;

2. The Victorian brown coals are used to supply reductant and fuel;

3. In Victoria, the ore is treated in a direct reduction kiln-type plant located in a coastal position near the coalfields;

4. In Tasmania, the ore is either smelted electrically or treated by direct reduction methods with works located near the Savage River deposits;

5. Iron making capacity of each plant is half a million tons per year, making a total of one million tons per year., with production of finished products of, say, 1,500,000 tons per year.

(A.) COST OF ORE. Direct operating costs of ore

production comprise costs of mining, beneficiation and transport.

From the very limited information at present available from Mines Department sources, it seems that the Savage River deposit might contain 80 million tons of open cut ore on the basis of a stripping ratio of 2:1.

Assuming the ore as mined contains 45% recoverable iron, the production of one million tons of pig and sponge iron would require the mining and beneficiation of 2.2 million tons of ore per year.

Tests carried out by the Tasmanian Mines Department indicate the Savage River ore could be readily upgraded to 63% iron by simple methods, basically comprising crushing and grinding to release the magnetite particles from the gangue, followed by magnetic separation to produce a magnetite concentrate.

For an open cut operation of the above magnitude coupled with beneficiation by simple magnetic methods, costs of the following order could be expected:

(1) Stripping and ore extraction:

comprises breaking, loading, bulldozing, trucking, dump levelling, road maintenance, transport of men and supplies, power, supervision and general expenses including maintenance of plant:

Stripping	+	5/- per ton of waste
Ore extraction	-	5/- per ton of ore

(2) Beneficiation

Comprises crushing, grinding, classification, magnetic separation, concentrate drying, tailings disposal, cost of power, water and general expenses.

Beneficiation + 15/- per ton of ore.

(3) Transport

Involves handling and transport of concentrates from mine to works in Tasmania and Victoria.

Transport to Pieman River works +
5/- per ton of concentrate
Transport to Victorian works +
30/- per ton of concentrate

Assuming mill heads average 45% recoverable iron and concentrate grade is 63% recoverable iron, then the cost of concentrates becomes -

	Cost of Concentrates Shillings per ton
Mining:	
Overburden	14/-
Ore Extraction	7/-
Beneficiation:	21/-
Transport:	
To Pieman Heads	5/-
To Victoria	30/-
Total direct cost to Victoria	77/-
Total direct cost to Pieman Riv.	47/-

(B) COST OF CHAR. As mined, Victorian brown coal contains about 66% moisture and 18% fixed carbon. The production of one ton of carbon as char would require the mining and briquetting of some 8 tons of brown coal. However, the brown coal is amenable to cheap open cutting on a large scale so that the cost of mining would be a fairly minor component in the cost of producing char.

Electric smelting would require 800 lbs. of char reductant per ton of pig iron, whilst a kiln type direct reduction process would require about 1,000 lbs. of char reductant plus 3,000 lbs. of raw coal or briquette equivalent (used in powder form to fire kilns) per ton of sponge iron.

On the basis of each plant producing half a million tons of iron per year, char and coal requirements per year would be -

Case 1. Electric smelter in Tasmania and direct reduction plant in Victoria.

Tasmanian plant 180,000 tons char per year
Victorian plant 220,000 tons char per year
Total 400,000 tons char per year

Coal requirements to produce 400,000 tons char
= 3.2 million tons coal
" " " fire kilns (Victorian plant)
= 0.7 million tons coal
Total annual coal requirements=3.9 million tons coal

Case 2. Direct reduction plants in Tasmania and Victoria.

Tasmanian plant 220,000 tons char per year.
Victorian plant 220,000 tons char per year.
Total 440,000 tons char per year.

Coal requirements to produce 440,000 tons char
= 3.52 million tons coal
" " fire kilns
= 1.40 million tons coal
Total annual coal requirements
= 4.92 million tons coal

Production of metallurgical coke or char from Victorian brown coal has not yet reached the commercial stage. However, several years ago investigations into the possibilities of producing metallurgical fuel from brown coal were carried out at the University of Melbourne.

These investigations showed that a hard lump char containing only 4-5% ash, less than 0.3% sulphur and a trace of phosphorous could be obtained from brown coal by the slow drying and low temperature carbonisation of ordinary industrial briquettes.

As a result of this and other important research, in 1957 the Gas and Fuel Corporation of Victoria undertook the construction of a pilot plant to produce 25 tons of metallurgical fuel per day. If this experiment is successful the Corporation proposes to build a commercial plant to supply the char to industry in Victoria and possibly in South Australia and Tasmania.

Besides char, low temperature carbonisation of industrial briquettes results in the production of valuable by-products. Tests on Galliondale briquettes gave the following results per ton of briquettes:

Hard char	11.26 cwt.
Gas	3930 cu.ft. (282 B.T.U. per cu.ft.)
Gas Spirit	0.42 galls.
Tar	5.4 galls.

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For the purpose of this study, it is assumed that the costs of coal and char, allowing credits for by-products, delivered to the works, are as follows:

Coal	delivered	to	the	Victorian Works	+ 15/- per ton
"	"	"	"	Tasmanian Works	+ 50/- per ton
Char	"	"	"	Victorian Works	+ £7. per ton
"	"	"	"	Tasmanian Works	+ £9. per ton

(C) OTHER COSTS. The following costs are assumed for other items:

	Victoria	Tasmania
Limestone	£3.0/ton	£3.0/ton
Power	2.0 pence/KWH	0.5 pence/KWH
Water	6.0 pence/1000 Galls.	6.0 pence/1000 Galls.
Labour	£1.0/man hour	£1.0/man hour
Supervision	£1.5/man hour	£1.5/man hour
Waste Disposal	1.0 shillings/ ton waste	1.0 shillings/ ton waste

(D) COST OF SPONGE AND PIG IRON.

(1) Victorian Direct Reduction Plant: The following costs are based on data quoted in a report on the R-N process which was published in the Journal of Metals of July, 1958.

	Units per long ton of sponge iron	
	Quantity	Cost
1. Concentrates	1.6 tons	£6.15
2. Char	0.45 tons	3.15
3. Limestone	0.10 tons	0.30
4. Fuel	9.33×10^{b} B.T.U.	1.00
5. Power	127 K.W.H.	1.06
6. Water (make up)	1000 galls.	0.03
7. Grinding balls and liners	-	0.12
8. Kiln relining	-	0.11
9. Briquetting press (tools and dies)	-	0.13
10. All other maintenance	-	1.12
11. Laboratory: Labour & Materials	-	0.01
12. Direct operating labour	0.4 man hours	0.40
13. Supervision	0.06 man hours	0.09
14. Tailings and waste	1.5 tons	0.08
Total direct plant costs		£13.75

(2) Tasmanian Electric Smelter. The principal cost items comprise ore, char and power. Other costs, including electric consumption, are assumed to be equal to items (6)-(14) as stated in the previous example.

Units per long ton of Pig Iron

		Quantity	Cost
(1)	Ore	1.6 tons	£3.75
(2)	Char	0.36 "	3.24
(3)	Limestone	0.20 "	0.60
(4)	Power	2,200 KWH	4.58
(5)	Total items (6)-(14) as above	-	2.09
	Total direct plant costs -		£14.26

(3) Tasmanian Direct Reduction Plant.

Units per long ton of Sponge Iron

		Quantity	Cost
(1)	Ore	1.6 tons	£3.75
(2)	Char	0.45 tons	4.05
(3)	Limestone	0.10 tons	0.30
(4)	Fuel	9.33×10^{b} BTU	3.35
(5)	Power	127 KWH	0.27
(6)	Total items (6)-(14) as above	-	2.09
	Total direct plant costs -		£13.81

(E) COMMENTS. The above calculations suggest that sponge or electric pig iron could be produced for a direct plant cost, excluding administration, general overheads and capital charges for a cost of about £14 per ton as against the indicated B.H.P. figure of about £10 per ton.

On the basis of the B.H.P. costs for 1955 indicated in Table IV plus 20%, and assuming other factors remain constant, direct plant costs for ingots and finished products would be as follows:

TABLE XVI

*Cost of Product - £/ton

	B.H.P.	Hypothetical Plant
Sponge or pig iron	9.6	14.0
Ingots	12.6	17.0

Blooms	14.4	18.8
Billets	16.2	20.6
Merchant Bar	19.8	24.2
Structural Steel	21.6	26.0

* Direct plant costs excluding administration, general overheads and capital charges.

The establishment of a million ton steel industry in Australia today would cost in the order of £120 per ton of annual capacity. In the case of B.H.P. which has been operating for the last 45 years, the capital investment represented by existing installations would be very much less than this figure.

By way of illustration, and to give some idea of the price required for, say, merchant bar, to obtain a reasonable yield on capital, a comparison between B.H.P. and a hypothetical new plant has been calculated on the following basis -

(1) Production at both plants is equated on the basis of one million tons of finished products per year.

(2) Total capital investment to establish the new plant is £120 per ton of annual capacity.

(3) Total capital investment represented by existing B.H.P. installations is £60 per ton of annual capacity.

(4) Annual yield required equals 25% of total capital investment before taxation.

(5) Production of merchant bar totals 100,000 tons per year.

(6) Capital investment attributable to merchant bar production is one-tenth of the total investment.

(7) Direct plant costs are as stated in Table XVI.

(8) Depreciation is 5% of total capital investment per year.

(9) Administration and general overheads cost 5% of direct plant costs.

(10) Transport charges on finished products delivered to capital cities average £3 per ton.

TABLE XVII

	B. H. P		HYPOTHETICAL PLANT	
	*Total Cost	Cost/Ton	*Total Cost	Cost/Ton
1.Total capital investment	£60,000,000		£120,000,000	
2.Capital investment attributable to merchant bar	6,000,000		12,000,000	
3.25% yield on capital	1,500,000	£15.0	3,000,000	£30.0
4.Direct plant costs		19.8		24.2
5.Depreciation	300,000	3.0	600,000	6.0
6.Administration etc.		1.0		1.2
7.Transport charges		3.0		3.0
8.**Price required		41.8		64.4

* Equated to a one million ton per year basis.

** Actual price of merchant bar in Australia capital cities is at present £40.5 per ton (U.S.A.£53.9 per ton)

Although based on many assumptions, it is considered that the above figures are sufficiently close to roughly indicate the economics of establishing a new steel industry in this country.

The example indicates that the major difficulty to be faced by a new industry is not so much one of raw materials or production costs but one of capital - not only the amount of capital involved, but also investment charges per ton of finished product if a reasonable yield on capital is to be obtained.

However, B.H.P. must also face this problem if the Company intends to keep up with future demand. As indicated in Table V. our steel consumption may rise from the present 3.2 million ingot tons to 7.3 million ingot tons by 1975, assuming no major recession takes place.

Neglecting future inflationary trends, the expansion of plant capacity in line with this demand growth will cost £120 per ton of annual capacity whether carried out by B.H.P. or independent interests. This

must lead eventually to substantial increases in the local price of finished steel products over and above any increases due to increased raw material and plant costs.

From the above it is concluded that, neglecting the possibility of premium export markets, any new steel industry, to withstand the intense competition to be expected from the long established and lesser capitalised B.H.P. would have to be prepared to operate for a considerable period during which the yield on capital would be very small.

The long-term picture is more favourable. B.H.P. will also have to face much heavier capital costs per annual ton of new capacity, so that, neglecting variations in production costs, the unfavourable price differential, for a given yield on capital, between B.H.P. and a new industry would tend to disappear.

PROSPECT 2. A suitable location for establishing a titanium pigment industry is in Western Australia at Bunbury. Bunbury is an old established township of some 10,000 people. It has well developed port facilities, ample power resources, water, and it is very conveniently situated with regard to the ilmenite deposits.

In assessing the possible economics of such an industry, the following general assumptions have been made -

1. The plant is located at Bunbury;
2. Production totals 20,000 tons of titanium pigment/year;
3. A conventional process involving leaching by sulphuric acid is adopted;
4. Principal raw materials comprise Bunbury and or Capel ilmenites and imported sulphur;
5. Sulphuric acid requirements are manufactured at the pigment plant.

A. Cost of Ilmenite. The annual reports of Western Titanium N.L. and Cable (1956) Ltd. indicate production costs for ilmenite delivered in Bunbury totals roughly £3½-5 per ton for each company. For the purposes of this assessment it is assumed that the cost of ilmenite delivered to the pigment plant is £6.0 per ton.

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B. Cost of Elemental Sulphur. The present price of imported sulphur in Melbourne is £17.25 per ton to which must be added freight to Bunbury. Assuming transport costs of £7.0 per ton, the total cost of sulphur delivered to the pigment plant would be £24.25 per ton.

C. Cost of Coal. Coal is used as fuel to supply heat energy to the process. Collie coal would be quite suitable for this purpose. Cost of Collie coal delivered to the pigment plant in Bunbury would be about £2.5 per ton.

D. Iron Scrap. Cost of iron scrap delivered to the plant is assumed to be £25.0 per ton.

E. Other Raw Materials. These comprise small quantities of phosphuric acid antimony trioxide and potash. The cost of these items is assumed to be equal to 5% of the total cost of all other raw materials.

F. Other Costs. Following costs are assumed for other items:

Air	2.0 shillings per 1000 cu.ft.
Water	6.0 pence per 1000 galls.
Steam	5.0 shillings per 1000 lbs.
Power	2.5 pence per K.W.H.
Labour	£1.0 per man hour
Supervision	£1.5 per man hour
Containers	£4.0 per ton of pigment
Waste Disposal	£1.0 per ton of pigment

G. Cost of Sulphuric Acid. The production of one ton of titanium pigment from W.A. ilmenite requires about three tons of 100% sulphuric acid. The production of 20,000 tons of pigment will therefore require the production of 60,000 tons of acid per year. The capital cost of a plant of this capacity using sulphur would be approximately £1,000,000.

The operating costs for an acid plant of this capacity has been estimated as follows:

	Units per long ton of 100% Sulphuric Acid	
	Quantity	Cost
1. Sulphur	770 lbs.	£8.350
2. Water	5,000 galls.	0.125
3. Steam*	200 lbs.	small
4. Power	5 KWH	0.052
5. Operating labour	0.5 man hours	0.500
6. Supervision	0.05 man hours	0.075
7. Maintenance: labour & supplies	7%/year of plant investment	1.167
8. Depreciation	7%/year of plant investment	1.167
9. Works overhead	70% of operating labour	0.350
	Total:	11.786
	Total production cost, say	£12.000

* Supplied by waste heat boiler or heat exchanger.

H. Cost of Pigment Manufacture. Most titanium pigment is prepared by a sulphuric acid leaching process. This involves dissolving the ilmenite and combined impurities in hot sulphuric acid. Impurities such as iron and lime are then removed by fractional crystallisation or precipitation. Residual iron still in solution must then be reduced to the ferrous state by scrap iron and maintained in this form during a prolonged hydrolysis stage in which the solution is boiled to precipitate titanium hydrate.

A preliminary seeding of the solution is necessary to obtain the desired form of oxide, rutile or anatase which have somewhat different properties. After extensive washing the precipitated hydrate is calcined to remove water and residual sulphuric acid. The calcined product is quenched ground and dispersed in water. The product is thickened, filtered and the cake dried, pulverized and finally bagged.

The process is complex requiring close control and the presence of even small amounts of chromium make it impossible to obtain a white product. To a lesser extent vanadium and manganese are also objectionable. Some forms of ilmenite are much more reactive with sulphuric acid than others and, for this reason, considerable preference may be exercised by buyers of ilmenite. Ilmenite produced by Cable (1956) Ltd.

and Western Titanium appears to be quite satisfactory in these respects.

In 1957, E.I. du Pont de Nemours and Co. Inc. of U.S.A. disclosed that it proposed constructing a 125 ton per day titanium pigment plant near Johnsonville, Tenn. Pigments will be produced by a chloride route rather than by the sulphuric acid process used by all other domestic producers. The plant will also produce titanium tetrachloride for the production of titanium metal. The process seems attractive and will no doubt have an important impact on the pigment industry.

The following assessment of the economics involved is largely based on data relating to the manufacture of titanium pigment using sulphuric acid as carried out in 1943 by Titangesellschaft G m b H at Leverkusen, Germany.

The capital cost of a 20,000 ton per year pigment plant using the acid process would be in the order of £270 per ton of annual capacity, excluding

sulphuric acid plant. On this basis, the capital cost of the pigment plant would be £5.4 million.

		Units per long ton of Pigment	
		Quantity	Cost
1.	Ilmenite	2 tons	£12.0
2.	Sulphuric acid	3 tons	36.0
3.	Iron scrap	0.14 tons	3.5
4.	Fuel (Collie Coal)	1.2×10^6 BTU	0.2
5.	Other raw materials	5% of cost of items (1)-(4)	2.6
6.	Water (make up)	4,000 galls.	0.1
7.	Air	4,000 cu.ft.	0.4
8.	Steam	1,400 lbs.	0.4
9.	Power	55 K.W.H.	0.6
10.	Bagging of product	-	4.0
11.	Waste disposal	-	1.0
12.	Operating labour	5.0 man hours	5.0
13.	Supervision	0.5 man hours	0.8
14.	Maintenance: labour	7%/year of plant investment	18.9
15.	*Depreciation	10%/year of plant investment	27.0

16. Works overhead	70% of operating labour	3.5
		116.0
	Plant costs, say	£120.0

*Due to the likelihood of new processes and equipment being developed and consequent obsolescence of existing plants, depreciation with respect to chemical plants is relatively high.

The price required for the pigment product is calculated on the following bases:

1. Total capital investment is made up as follows:

(i)	Sulphuric acid plant	£1,000,000
(ii)	Pigment plant	5,400,000
(iii)	Other capital expense including cost of initial investigations and contingencies	1,600,000
		£8,000,000

2. A 25% yield on capital before taxation is required.

3. Interstate transport costs of product consumed in Australia total £7 per ton.

4. Transport charges F.O.B. Bunbury for exported product total 10/- per ton.

5. Central administration, marketing expenses etc. cost 7% of plant costs.

6. Production and plant costs are as stated above.

TABLE XVIII

		Home Market £/ton pigment	Export Market £/ton pigment
1.	25% yield on capital	100.0	100.0
2.	Transport charges	7.0	0.5
3.	Central administration etc.	8.4	8.4
4.	Plant costs	120.0	120.0
	Price required	£235.4	£228.9

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The estimated price of £228.9 per ton F.O.B. Bunbury required for exported pigment compares with the 1958 average foreign price of £A212 per ton, F.O.B. port of shipment, for pigment imported into Australia. To the latter figure must be added overseas freight, local freight, insurance and duty, if applicable, to obtain the cost delivered to capital cities.

The estimated price of £235.4 per ton C.I.F. to eastern States required for pigment consumed in Australia compares with the cost for Tasmanian pigment bagged and delivered in Sydney of about £260 per ton. In 1958/59, 182 tons of pigment imported into Western Australia from eastern States cost £265 per ton landed at Fremantle.

PROSPECT 3. The third possibility examined in this report is a small sponge iron industry exporting to premium markets overseas. For reasons discussed previously, Bunbury would be a favourable site for such an industry. Alternatively, the works could be established at Collie on the coalfield, some 42 miles distant from Bunbury, where there is also an established community.

In the following assessment both Bunbury and Collie are considered as possible sites. The calculations have been made on the following general assumptions.

1. The plant is located at Bunbury or Collie.
2. Production totals 100,000 tons of sponge iron per year.
3. A direct reduction kiln type process is adopted.
4. Principal raw materials comprise iron ore mined at Dowd's Hill near Koolyanobbing and Collie coal.

A. Cost of Ore. The Dowd's Hill ore body is a high grade deposit which would not require beneficiation prior to direct reduction. On the basis that the ore as mined contains 63% recoverable iron, some 160,000 tons of ore will be required for the production of 100,000 tons of sponge iron.

Geological plans and sections of the deposit indicate that some 6,000,000 tons of high grade ore would be available with little or no overburden. On the basis of a stripping ratio of 0.5 : 1 costs of the following order could be expected.

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1. Stripping and ore extraction
Comprises breaking, loading, bulldozing, trucking, dump levelling, road maintenance, transport of men and supplies, power supervision and general expenses including maintenance of plant.

Stripping @ 10/- per ton of waste	5/-	per ton ore
Ore extraction @ 10/- per ton of ore	10/-	" " "
Total -	15/-	" " "

2. Handling and transport charges
These comprise costs of trucking ore 35 miles by railhead and then 380 miles by rail to Bunbury, or Collie.

Trucking ore to railhead	25/-	per ton ore
Rail freight and handling	65/-	" " "
Total -	90/-	

3. Royalties. The amount of royalty payable would have to be determined by negotiation with the W.A. Government. For the purposes of the estimate it is assumed to be 1.0 shillings per ton.

4. Total Direct Costs

	£ per ton
Mining	0.75
Handling & Transport	4.50
Royalties	0.05
	£5.30

B. Cost of Char. As mined, Collie coal contains about 45% fired carbon so that the production of one ton of carbon as char would require about 2.2 tons of coal. The kiln type direct reduction process would consume about 1000 lbs of char reductant plus 1,000 lbs. of raw Collie coal (used in powder form to fire kilns) per ton of sponge iron. A production of 100,000 tons of sponge iron would thus require the mining of some 150,000 tons of coal per year.

According to Mr. Fernie, the Griffin Coal Mining Company would be prepared to sell coal at £1 per ton at the pit head. Rail freight and handling to Bunbury would cost an additional £1.5 per ton. Assuming char

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is made at Collie at a cost of £5 per ton, cost of coal and char would be as follows:

Case 1. Sponge iron plant at Collie	£/ton
Coal £1 + £0.1 transport cost to plant	1.01
Char (£5 + £0.1 do do)	5.01

Case 2. Sponge iron plant at Bunbury	£/ton
Coal (£1 +£1.5 transport cost to plant	2.5
Char (£5 +£1.5 do do)	6.5

C. Other Costs. The following costs are assumed for other items -

	Collie	Bunbury
Limestone	£5.0/ton	£5.0/ton
Power	2.5 pence/KWH	2.5 pence/KWH
Water	6.0 pence/1000 galls.	6.0 pence/1000 galls.
Labour	£1.0/man hour	£1.0/man hour
Supervision	£1.5/man hour	£1.5/man hour
Water Disposal	1.0 shillings/ ton waste	1.0 shillings/ ton waste

D. Cost of Sponge Iron

	Units per long ton of Sponge Iron		
	Quantity	Collie	Bunbury
1. Iron Ore	1.6 tons	8.48	8.48
2. Char	0.45 tons	2.26	2.93
3. Limestone	0.10 tons	0.50	0.50
4. Fuel	9.33×10^6 B.T.U.	0.45	1.12
5. Power	150 K.W.H.	1.56	1.56
6. Water (make up)	1000 galls.	0.03	0.03
7. Grinding balls & liners	-	0.15	0.15
8. Kiln relining	-	0.15	0.15
9. Briquetting press (tools & dies)	-	0.15	0.15
10. All other maintenance	-	1.30	1.30
11. Laboratory labour & materials	-	0.02	0.02
12. Direct operating labout	1.0 man hours	1.00	1.00
13. Supervision	0.1 man hours	0.15	0.15
14. Tailings & Waste	1.5 tons	0.08	0.08
Total direct plant costs -		£16.28	£17.62

The price required for the sponge iron product is calculated on the following bases -

1. Total capital investment is composed as follows -

(i)	Ore production plant (£5/ton annual capacity of ore)	£ 800,000
(ii)	Sponge iron plant (£25.0/ton annual capacity of iron)	2,500,000
(iii)	Other capital expenses including cost of initial investigations and contingencies	700,000
		£4,000,000

2. A 25% yield on capital is required before taxation.

3. Transport charges for sponge iron F.O.B. Bunbury are as follows:

Plant located at Collie £1.75/ton iron product
Plant located at Bunbury £0.50/ton iron product

4. Administration and general expenses cost 5% of total direct plant costs at Collie plant.

5. Depreciation is charged at the rate of 5% of total capital investment/year.

6. Production and direct plant costs are as above.-

TABLE XIX

	Cost/ton of sponge iron	
	Collie	Bunbury
1. 25% yield on capital	£10.00	£10.00
2. Transport charges	1.75	0.50
3. Administration, etc.	0.82	0.82
4. Depreciation	2.00	2.00
5. Total direct plant costs	16.28	17.62
Price required	£30.85	£30.94

Japan accounts for about 85% of our exports of iron and steel scrap. Tonnage and values of scrap F.O.B. port of shipment exported from Australia are as follows:

TABLE XX

	1954	1955	1956	1957	1958	Jan-March 1959
Quantity(tons)	64,387	74,476	105,123	178,255	156,930	44,916
Value(per ton)	n.a.	n.a.	£22	£28	£18	n.a.

n.a. = not available.

PRELIMINARY INVESTIGATIONS

The purpose of the investigations would be to obtain all the data necessary for an accurate assessment of the economics involved in the exploitation of our principal deposits of iron ore and ilmenite. Besides determination of mineral reserves, the field unit would closely study processes, sources of power, labour, freights, locational factors, markets and costs and conditions generally.

Prior to the commencement of any investigations with a view to setting up a full-scale iron and steel industry, the principal mineral deposits should be held under exclusive prospecting or mining title. Acquisition of the iron ore deposits of Tasmania, and possibly Victoria, would be most necessary in this respect.

In the case of a pigment industry located in Western Australia, the acquisition of mineral properties and/or long term contracts for the purchase of ilmenite would likewise be essential prior to commencing any field operations.

Ilmenite deposits in and around Bunbury are high grade and favourably located. It is considered that prospecting in this area would disclose new deposits in addition to those already held by operating interests. Although favourable long term contracts could probably be secured from Cable (1956) Ltd. and other operators, it would still be wise policy to retain independent reserves of ilmenite.

Although this report assumes that pigment would be made using sulphuric acid manufactured from imported elemental sulphur, pyrites could also be used for this purpose. If economic deposits of pyrites could be found near Bunbury, a pigment plant could be operated at very favourable costs. As mentioned earlier, pyrite has recently been found in the

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Bunbury district, so that prospecting for pyrite in the area would be justified. There are no known commercial deposits of elemental sulphur in Australia.

If a small sponge iron industry in W.A. is to be considered, acquisition of exclusive rights over the high-grade iron ore deposit at Dowd's Hill near Koolyanobbing would be essential. In view of the large freight component in the cost of iron ore, prospecting for new deposits nearer Bunbury would be justified. Every million tons of new ore found would supply a 100,000 ton sponge iron plant for six years.

Deposits of iron ore located at Nowa Nowa in Victoria some 140 miles east of Yallourn could also form the basis of a small sponge iron industry in Victoria, using brown coal products. Known reserves in these deposits would have a life of some 35 years, assuming an annual sponge iron production of 100,000 tons.

PROSPECT I. - AN IRON & STEEL INDUSTRY

(1) Exploration. Exploration would be concentrated on the more important areas commencing with the Savage River iron ore deposits. The work would include a systematic diamond drilling campaign involving many thousands of feet of drilling, costing perhaps £5-10 per foot, depending on total footage drilled, depth of holes and character of the ground.

During drilling, the depth of each run and details of the ground intersected would be logged. Drill core would be sampled and assayed. Tonnage and grade would be computed from assay results and drill logs. Drill samples would be bulked together and subjected to separation testing to determine most suitable treatment methods.

The exploration would also include surface mapping, sampling and prospecting for extensions and new deposits aided by geological and perhaps geophysical survey. In addition to iron ore, the investigations would also be concerned with coal, limestone, dolomite and magnesite.

(2) Economic Studies. These would cover various processes, plant locations, production rates and use of different raw materials.

Principal methods include electric pig iron smelting,

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direct reduction processes, smelting in low shaft furnaces using oxygen enriched air, and conventional blast furnace smelting. The latter method would largely depend on the availability of N.S.W. coking coal.

Plant locations would be limited to coastal positions near the chief centres of population and future industrial development, and as close to ore and coal as possible. On present trends, Victoria, Tasmania and perhaps New South Wales would be the most favourable States in which to establish a new steel industry.

Because the assembly costs of ore and coal amount to 70-90% of the direct plant costs of producing pig or sponge iron by non-electric processes, and because suitable deposits of these raw materials are widely separated, it would be necessary to operate at least two works, one near ore, the other near coal. In this way optimum freights would be achieved by forward and back loading of raw materials, products and supplies.

Various production rates could be studied. However, from this preliminary study, it is felt that any new integrated steelworks would need to have a minimum capacity of one million tons per year. In view of the many technical, financial and political problems which would arise, the minimum production target of one million tons would probably be achieved by steps in units with capacities averaging say, 250,000 tons/year commencing with the similar types of finished products, the first being more or less a pilot plant operation.

Deposits of iron ore of potential interest include those located in Tasmania, Victoria and Western Australia. Coals would include Victorian brown coals, coking coals from the Southern Coalfield of N.S.W. and coals in north-eastern Tasmania. Owing to the much smaller quantities consumed, sources of limestone, magnesite and other raw materials would be less critical.

(3) Approximate Costs and Duration of the Programme. The duration and costs of a programme to investigate the prospects for establishing a new steel industry in Australia are difficult to determine at this stage.

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The following estimate of costs should, therefore, be regarded as very approximate.-

In the estimates, it is assumed that:-

(i) Government aid, either State or Commonwealth, would be restricted to assays, minerals separation testing, regional geological work and the construction of access facilities.

(ii) The minimum economic tonnage is 1,000,000 tons of pig iron per year, with steel ingot production in excess of this figure.

(iii) Duration of the programme would be 3 years.

(iv) Diamond drilling would be carried out by outside contractors.

(a) Diamond Drilling. One of the principal cost items of the investigations would be the drilling of the iron ore deposits. Drilling costs would be determined by the regularity or otherwise of the mineral distribution, depth of testing and the minimum economic tonnage warranting a steel industry.

Because most iron ore deposits exhibit fairly regular mineral distribution, close drill spacing would normally not be required. Further, since only open cut ore is of immediate interest, drilling would be restricted to comparatively shallow depths. Once the minimum economic tonnage has been established with evidence of further ore extensions, there would be no point in continuing the drilling programme further.

With respect to coal, reserves and composition of the more favourably located coal deposits have been fairly well established by geological surveys and drilling carried out by the various State Mines Departments. As a result, drilling requirements would not be so exacting.

Some drilling would also have to be carried out to test limestone, magnesite and other deposits of raw materials. However, as the tonnage requirements of these subsidiary materials would be small compared with ore and coal, drilling requirements would be proportionately small.

On present information, the most favourable prospect

for establishing a minimum economic tonnage would be the Savage River area in Tasmania. It is felt that the minimum economic tonnage should be capable of supporting a million ton pig or sponge iron operation for 50 years. On the basis of the ore containing 45% recoverable iron, the required tonnage would be 110 million tons of ore.

Study of data obtained from the Tasmanian Mines Department indicates that testing the Savage River deposits would involve a total drill footage in the order of 30,000 ft. with an average maximum depth per hole of 1,000 feet. Assuming three machines were used on a single shift basis, under normal drilling conditions, a programme of this magnitude would cost about £6/foot, and require some 20 months to complete.

Allowing for drilling at other prospects such as iron ore, coal, limestone, magnesite etc. all in drilling costs of the following order could be expected:

	Total Cost
Savage River deposits	£180,000
Other prospects	90,000
	£270,000

(b) Personnel. The field unit would probably be manned more or less along the following lines, assuming the stated costs which would include salary field allowances, transport costs etc:

Occupation	No. Required	Cost/Year
Chief Engineer	1	£6,000
Assistant to Chief Engineer	1	4,000
Junior engineers & geologists	6	18,000
Prospectors	4	12,000
Miscellaneous: clerks, mechanics, drivers, cooks, and general hands	12	30,000
	24	£70,000

The Chief Engineer would have to be a graduate from a recognised mining school or university of many years standing. In addition to possessing an adequate knowledge of mining and metallurgical techniques, he should have extensive experience in exploration

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techniques and the economic appraisal of mining properties. He should also possess the administrative and organising ability necessary for the successful operation of the programme. The assistant to the chief engineer would also be a graduate from a recognised mining school or university of at least 8-10 years standing, preferably with experience in mineral exploration. Graduates with an average of say, 5 years standing would be suitable for the more junior positions.

The prospectors would be employed for reconnaissance and general prospecting ahead of the main field party. The main qualifications, apart from adequate prospecting experience would be the ability to work under rough conditions such as would be encountered on the west coast of Tasmania.

(c) Equipment. Principal items would include trucks, jeeps, light tractors, trailers, pumping sets, pipes, tanks, sampling and survey equipment, miscellaneous tools, camping equipment etc. Diamond drilling plant would be supplied by the outside contractor. The sum of £50,000 has been allowed for equipment.

(d) Miscellaneous Items. The following costs have been allowed:

		Cost
(1)	Metallurgical testing including freight and handling of bulk samples	£30,000
(2)	Fees payable to overseas experts	20,000
(3)	Travelling expenses	20,000
(4)	General overheads (3 years)	30,000
(5)	Expenses in acquiring and maintaining exclusive prospecting titles	10,000
		£110,000

(e) Total Cost of Investigations

(1)	Diamond Drilling	£270,000
(2)	Personnel	210,000
(3)	Equipment	50,000
(4)	Miscellaneous	110,000
(5)	Contingencies	60,000
		£700,000

PROSPECT 2 - A TITANIUM PIGMENT INDUSTRY.

(1) Exploration. The basic raw materials for a pigment industry comprise chrome-free ilmenite and sulphur or sulphur-bearing ores. The only known commercial deposits of ilmenite suitable for pigments occur in recent and ancient beach deposits south of Perth, W.A. - notably in the Bunbury-Capel area.

Due to their shallow, flat-lying, and unconsolidated nature, beach deposits can be tested by simple drilling methods including jet drills and hand and mechanical augers. As a result, minimum economic tonnage requirements for a pigment industry could be determined relatively cheaply and quickly compared with steeply inclined hard rock deposits.

One of the main sulphur-bearing ores is pyrites, containing some 45% sulphur. However, in order to compete with imported sulphur, pyrites deposits would need to be amenable to cheap mining and beneficiation and also favourably located with regard to the pigment plant. Another disadvantage of pyrites is that capital cost of sulphuric acid plants using pyrites is at least 50% greater than for plants using elemental sulphur.

Search for pyrites deposits would involve general prospecting operations under geological control within a radius of say, 100 miles around the site of the pigment plant. Promising deposits so found would be tested by diamond drilling.

(2) Economic Studies. These would cover various processes, plant locations, production rates and use of different raw materials.

The principal method of manufacturing pigment now in use is the sulphuric acid process employing sulphur or sulphur-bearing ores as alternate sources of sulphuric acid. However, the trend in the future may be towards chlorination processes which produce titanium tetrachloride, which can be employed for manufacture of titanium metal as well as pigment.

From the preliminary study made in this report it seems clear that the most favourable location for a pigment plant would be near the ilmenite deposits. From this aspect, it would be very difficult to improve upon Bunbury as a plant location.

A plant producing 20,000 tons of pigment per year as studied in this report, would be considered a fairly large plant. Detailed investigation might indicate a plant of lesser or greater capacity may be desirable. The problem of whether to achieve target production in one step or a series of steps beginning with a pilot plant operation would also have to be decided.

The raw materials question is relatively straightforward, namely, Bunbury-Capel ilmenites and imported sulphur with the possible alternatives of favourably located deposits of pyrites or sulphur recovery from the sour gases of the Kwinana oil refinery, assuming sulphur content reaches economic concentrations.

(3) Approximate Costs and Duration of the Programme. With ample supplies of suitable raw materials clearly available, together with the much smaller raw material and capital requirements, the establishment of a titanium pigment industry would be a far less complex matter than setting up an iron and steel industry.

Accordingly, the investigations required to determine the feasibility of a pigment plant would be simpler and on a lesser scale than those for an iron and steel industry. It is considered that the feasibility of the prospect could be determined by an investigation of approximately eighteen months duration. Costs of the following order could be expected --

		Cost
1.	Boring including diamond drilling	£50,000
2.	Personnel	60,000
3.	Equipment	30,000
4.	Metallurgical testing, etc.	10,000
5.	Fees payable to overseas experts	10,000
6.	Travelling Expenses	10,000
7.	General overheads	10,000
8.	Expenses in acquiring and maintaining mineral properties	10,000
9.	Contingencies	20,000
		£210,000

PROSPECT 3 - A SMALL SPONGE IRON INDUSTRY

Investigations into the prospects for establishing a small sponge iron industry would probably be of much the same magnitude as those required for a prospective pigment industry. On this basis, the duration and costs of the programme would be approximately eighteen months and £210,000 respectively. 10

* * * A.G. Palmer

A P P E N D I C E S

INVITATION FOR TENDERS

IRON ORE - WESTERN AUSTRALIA

IRON ORE - WESTERN AUSTRALIA

CONDITIONS UNDER WHICH OFFERS FOR PURCHASE CAN BE CONSIDERED

TENDERS will be received up to noon on 30th November 1959, by the Government of Western Australia for the purchase and shipment of iron ore from the iron ore deposits known as Koolyanobbing situated North-East from Southern Cross. The particular ore body from which the ore is to be mined is sited at Dowd's Hill approximately 34 miles from Southern Cross railway siding.

Plans will be provided by the Government indicating the site, and further particulars required by tenderers will be supplied.

The Government may accept any or none of tenders submitted.

GENERAL CONDITIONS:

The tenderer must provide for the provision of all necessary plant and equipment including construction and maintenance of roadway from Dowd's Hill site to the ore loading sidings at Southern Cross and must carry out all work incidental to the mining of the iron ore including transport and loading of the iron ore into ship's hold at Fremantle wharves, with the exception that the Government will provide necessary rolling stock and will haul the loaded railway wagons from the ore loading sidings at Southern Cross to an approved dump site at Fremantle and will haul the empty wagons back to Southern Cross Free of cost to the tenderer.

Tenders are to be based on iron ore quality 62% Fe. and tenderers must state percentage variation up or down in price according to variation in Fe. content of iron ore from time to time.

Alternative tenders may be submitted and each tenderer may submit tenders under (a) and (b),

(a) for purchase of 500,000 tons per annum for a period of 10 years under the conditions set out.

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(b) for the purchase of 500,000 tons per annum for a period of 10 years under alternative conditions to be set out by the tenderer.

Tenderers must acquaint themselves with the local conditions, and the Government will not be responsible for any miscalculation by tenderers on whatever grounds such miscalculation may be said to be based.

Before supplying any information or considering any tender the Government will require from intending tenderers satisfactory evidence that they are the authorised representatives or agents of principals financially and otherwise capable of carrying out this contract.

Each tenderer must submit a bank guarantee of £10,000 when submitting his tender, and successful tenderer will be required to deposit with the Government a bank guarantee or equivalent of £100,000 as security for the carrying out of his contract.

The successful tenderer shall:

(a) carry out all mining to the satisfaction and approval and in accordance with the regulations of the Mines Department;

(b) provide for the housing of all employees resident at or near the site of mining operations and shall in all things comply with the requirements of the State Health Department, and provide water reticulation at his own expense.

(c) construct and maintain a roadway from the mine to the ore loading sidings at Southern Cross, and shall permit all normal traffic and all traffic approved by the Government to utilise the said roadway.

(d) permit all transport engaged in carrying iron ore consigned to Wundowie Charcoal Iron Works to use the said roadway.

(e) construct a loading ramp and/or approved bins or other loading facilities at the ore loading sidings at Southern Cross to the satisfaction of the Commissioner of Railways for loading iron ore on to railway wagons.

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(f) erect approved equipment on an area made available on lease by the Fremantle Harbour Trust to enable the railway wagons to be emptied and the iron ore stored. Approved equipment shall also be provided by contractor to remove the ore from the storage dump to convey the ore to the wharf and to load into ship's hold: all to the approval of the Fremantle Harbour Trust and in accordance with its by-laws and regulations. The tenderer shall provide suitable shunting facilities at the unloading dump.

(g) the cost of repairs to any wagon damaged during loading or unloading operations and/or while in the custody of the tenderer shall be a charge to the tenderer.

(h) when loaded the contents of the wagon shall be trimmed to the satisfaction of the Railway Department to ensure proper distribution of load and safe travel. Loading shall not exceed the tonnage capacity shown on the wagon and, if over loaded, the tenderer is responsible for adjustment of weights. Any delay occurring to the wagon due to overweight shall be charged for in accordance with the arrangements for demurrage.

(i) shall assume control of the railway wagons when delivered by the Government to an agreed on location near the storage dump, and after emptying shall return the wagons to an agreed on location near the storage dump. Demurrage will be charged on trucks held up beyond an agreed on period of time.

(j) conform to the requirements and direction of the Fremantle Harbour Trust in the movement of ore from stock piling to ship, shunting operations, etc., and for stevedoring and the engagement of labour.

(k) submit to General Manager Harbour Trust plans and specifications of all equipment, plant, structures, etc. proposed to be installed within the Fremantle Harbour Trust area for prior approval before commencement of any work.

The State Government will :

(a) provide and operate rolling stock estimated to be capable of transporting 10,000 tons of iron ore per week from Southern Cross to Fremantle, but will not accept liability for failure to do so for any cause whatsoever.

(b) provide additional rail sidings at Southern Cross as required.

(c) haul the iron ore wagons from the ore sidings at Southern Cross to an agreed on location near the stock pile area at Fremantle.

(d) haul the empty wagons from an agreed on location near the stock pile area to Southern Cross.

(e) if requested by the successful tenderer and within six months construct a pipe line from Southern Cross to the mine site providing a supply of water not exceeding 25,000 gallons a day, on payment by the tenderer of an annual fixed sum of £6,500 and in addition pay for all water supplied at the rate ruling from time to time (the present rate is 5/10d per 1,000 gallons) provided that the Government shall be entitled to supply other consumers from the

(e) Cont'd. said pipe line without interfering with the tenderer's operations: the tenderer shall also provide all reticulation with the approval of the Public Works Department.

TENDERERS may also submit proposals for the mining and shipment of up to ten million tons of iron ore on a 62% Fe. basis to be mined from the Mount Goldsworthy deposits in the Ellarine Hills, approximately 60 miles east from Port Hedland.

Tenderers must inspect the site and inform themselves on local conditions.

Tenderers must ascertain from the Department

of Industrial Development the conditions which must apply regarding road access from the mine site to the loading point.

Mining must be carried out to the approval of the State Mines Department.

The successful tenderer will be required at his own cost to provide a new loading berth at Port Hedland and to carry out and maintain dredging in accordance with details available from Department of Industrial Development to tive a depth of 30 ft. at mean neap tides.

The Government will assist bona fide tenderers to inspect the site, and to obtain information required by them.

Acceptance of any tender would be subject to the issue of an export licence by the Commonwealth Government.

R E F E R E N C E S

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PRINCIPAL REPLIES TO CORRESPONDENCE

* * *

Exhibit "M" - Preliminary
Report to E.R. Hudson
from A.G. Palmer

COMMONWEALTH OF AUSTRALIA.

Minister for National Development

Commonwealth Parliament
Offices

SYDNEY. NSW.

8th December, 1959

Dear Mr. Palmer,

I refer again to your letter of the 5th November 1959 concerning the exploitation of iron ore deposits in Western Australia.

The Commonwealth of Australia maintains an embargo on the export of iron ore because it is believed that iron and steel are of such basic importance to the economy of Australia that our limited known resources of iron ore must be conserved.

Export of haematite (other than micaceous haematite), magnetite and ores containing either or both of these minerals is prohibited under the Customs (Prohibited Exports) Regulations.

Low grade ores containing haematite or magnetite which have been beneficiated by concentration or sintering come within the ambit of these Regulations. Ores not containing haematite or magnetite are included in the second schedule of the Regulations - goods the export of which is prohibited unless the consent of the Minister for Customs and Excise is obtained.

Metallic products such as sponge iron produced by the direct reduction of iron ores would be classed as iron and steel products. Export of these products is subject to the control of the Minister for Trade. I have therefore brought your letter to the attention of my colleague who will write to you direct on the subject.

Yours sincerely,

(Sgd) W.H. SPOONER.

Mr. A.G. Palmer,
Room 15, Sixth Floor,
10 Martin Place,
SYDNEY. NSW

DEPARTMENT OF MINES, TASMANIA.

HOBART.

17th November, 1959

Mr. A.G. Palmer,
Room 15, Sixth Floor,
Challis House,
10 Martin Place,
SYDNEY. NSW

Dear Sir,

I wish to acknowledge your letter of the 13th November in which you request information concerning the iron ore deposits in this State. The reservation which was placed on iron resources of the State during 1956 covered all the deposits known at that time. A subsequent aerial magnetometer survey conducted at our request by the Bureau of Mineral Resources indicated another deposit in the Exploration Licence area held by Rio Tinto Australian Exploration Pty. Ltd.

Ground geophysical and geological surveys have covered most of the more promising deposits and diamond drilling was commenced at the Savage River area by the Department of Mines. For full information on those deposits I refer you to Geological Survey - Mineral Resources No. 6 "The Iron Ore Deposits in Tasmania". This publication is out of print but most libraries will have a copy. Results of the more recent work is published in Technical Reports Nos. 2 and 3 which I believe you have a copy.

Estimates made for the reserves of the various deposits are very approximate only, but the recent drilling at Savage River together with the ground magnetometer survey, indicate that the orebody is wide and long and extends to a depth of at least 1000 feet. It is considered that ore reserves in this area would exceed 200 million tons - the grade in drill holes to date being approximately 50% Fe. Simple magnetic separation improves the grade to some 62% Fe with a recovery of some 97%. See Technical Report No. 3 - Page 151.

My Government is not not committed to the granting of leases on any of the areas reserved, but is holding the areas with the thought that any

organization prepared to establish a steel industry in the State may require all the deposits to safeguard its future operations.

Rio Tinto Australian Exploration Pty. Ltd. by virtue of holding an exploration licence over the recently discovered deposit have been in close contact with our work and in fact acted as our drilling agent on the Savage River drilling. This Company requested and have been given full results of our work and have also drilled one borehole on the iron deposit within their licence area.

Should your principals request an exclusive right over the reserved areas, I would require to be given full details of their proposals before I could make any recommendation to the Minister for Mines.

Yours faithfully,

(Sgd) J. G. SYMONS
Director of Mines

THE HYDRO-ELECTRIC COMMISSION
TASMANIA.

Box 631B GPO
HOBART.

No. 14471 4th November, 1959

A.G. Palmer, Esq., B.E., M.Aus.I.M.M.,
Room 15, Sixth Floor,
Challis House,
10 Martin Place,
SYDNEY. N.S.Wales.

Dear Sir,

We acknowledge receipt of your letter of 30th October 1959, regarding the matter of a power supply for steel production in Tasmania.

We would first say that it is our understanding that iron ore deposits in this State are reserved by the Government, and that investigations to prove their quality and extent are still in progress. We assume that you are also making an approach to the State Government or to its Mines Department in order to satisfy yourself that the necessary licences or concessions would be granted to your principals. You will appreciate that this would be a prerequisite to any negotiations that might take place on the conditions for a supply of power to the undertaking.

You have stated that the proposal envisages an annual output of 500,000 tons of steel products from a works at Pieman Heads, starting about 1964. This represents a power demand of some 170 MW (continuous), and hence an installation in excess of this figure.

The present installed capacity of the Tasmanian hydro-electric generating system is 485 MW, shortly to be raised to 570 MW with the commissioning of the Liapootah Power Station in a few weeks time. Other developments now under construction will raise the capacity still further, to about 800 MW by 1965-6. The greater part of the energy output from these developments is already earmarked to provide for definitely planned industrial expansion and for the normal growth of load in the State.

Ample water power resources capable of economic development remain to be exploited, mainly in the west and north-west of the State. The remaining potential has been estimated as exceeding two million horsepower at a load factor of 60 per cent. There is thus ample potential for an undertaking such as you have described in your letter.

The Commission's developmental programme is financed from loan funds and the rate of construction is therefore governed to a large extent by the amounts made available each year by the Loan Council to the State Government. It is the Commission's policy to plan and construct new developments to meet a carefully prepared forecast of demand, and the forecast takes into account the known requirements of existing and proposed industrial undertakings.

The Commission is not prepared to undertake to supply power in quantity at a future date and at a firm price except on the basis of a firm contract under which the consumer on his part agrees to take and to begin paying for the supply on the specified date. In the absence of such an agreement, the Commission would be unwilling to embark upon any large and costly new developmental works.

The price of the power will be governed mainly by construction costs, rates of interest on loans, size of installation, location of plant, and load factor in operation. At this stage and on the somewhat scanty data provided, we prefer not to quote a figure, but we may say this much for your guidance. We have recently undertaken to supply power for industrial purposes at a price of approximately 0.5 pence per KWH unit.

Before embarking upon any more detailed discussions regarding a supply of power and the price of energy, we should ask for assurances that the State Government has been consulted, and that its approval to your proposal has been obtained. We shall also require to know the names and status of the principals for whom you are acting.

We trust that this information will suffice at this stage.

Yours faithfully,
THE HYDRO-ELECTRIC COMMISSION

(Sgd.) A. W. KNIGHT
Commissioner

DEPARTMENT OF MINES,

Treasury Gardens,

MELBOURNE. C.2.

Ref.2565/JK/SK

9th December, 1959

A.G. Palmer, Esq.,
Mining Engineer,
Challis House,
10 Martin Place,
SYDNEY.

Dear Sir,

Iron ore deposits in Victoria are of limited extent.

Recent surveys in the Nowa Nowa area have revealed reserves of between 5 and 7 million tons of high grade magnetite hematite ore beneath an overburden of hard brecciated rhyodacite varying in thickness from 80 to several hundred feet.

An outcrop known as the six mile outcrop contains small reserves of the order of 80 feet thickness at a depth of 500 feet.

Another outcrop seven miles north of Nowa Nowa contains approximately 1,000,000 tons of hematite.

The total metallic iron varies from 45% to 68% the average being about 50%. Sulphur varies from 1% to 3% and phosphorus is about 0.01%.

Other small deposits of iron manganese oxide south of Buchan have been worked sporadically for some year past.

Yours faithfully,

(Sgd.) JOHN L. KNIGHT

for Chief Government Geologist.

* 5A. Annexed hereto and marked with the letter "B" is a photocopy of cheque butt number 202 dated 18th February, 1960 to pay A. G. Palmer Investigation W.A. and Tas. £487.18.7

5A. (b) Was this payment made to Mr. Palmer in

** consideration of the report marked "A"?

5B. (b) Yes.

5A. (c) Was this payment made to Mr. Palmer in consideration of the expenses of Mr. Palmer in relation

to his investigation and repcrt marked "A"?

5B. (c) Presumably the payment covered Mr. Palmer's fee for the report as well as his expenses.

5A. (d) Did the first defendant sign the cheque on behalf of the plaintiff?

5B. (d) Yes.

5A. (e) Who prepared the cheque butt?

5B. (e) My secretary.

* Exhibit "O" page 2029 of this Appeal.

** Exhibit "M" page 1929 of this Appeal.

Exhibit "N" - Interrogatories 5(b), (c), (d), and (e) and answers thereto

No 202

15 2. 1960

A. G. Palmer

Investigation W. A. Tax

£487-18-7

Exhibit "O" - Cheque butt annexed to Interrogatory 5

* 6A. Annexed hereto and marked with the letter "C" is a photocopy setting out the receipts and payments during November 1959.

(a) Is this document a record of the receipts and payments of the plaintiff of its Sydney Imprest Account?

6B. (a) Yes.

6A. (b) Item 111 in the account shows a payment of £118.2.0 to Ansett. Is this a payment of Mr. Palmer's travelling expenses referrable to his preparation of the

** report "A"?

6B. (b) I believe so. This account was paid by a cheque drawn on the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney.

* Exhibit "Q" page 2031 of this Appeal.

** Exhibit "M" page 1929 of this Appeal.

Exhibit "P" - Interrogatories 6(a) and (b) and answers thereto

'C' 143.18.1
253. 4.0

S 3

Q.M.L. SYDNEY IMPREST ACCOUNT.

NOVEMBER, 1959.

2	104	Reimbursement Petty Cash	8. 3. 3.	
	105	W.R.Bull-expenses N.T.tour	17. 1. 6	
3	106	Canana-magazine table	20. 7. 6	
	107	Main Roads Dept.regist. Land Rover	3.15. 0	
	108	Gold Coast Removals-cartage Univers.	24. 0. 0	
5	109	Jackson O'Sullivan-freight Mt.Isa	2. 0. 0	
	110	Syd.County Council-Elect.Room 303	15. 0	
	111	Ansett-A.G.Palmer visit W.A. Tas.	118. 2. 0	
	112	W.C.Penfold - stationery	2.10. 0	
	113	A.O. E. sundry equipment	397. 2. 1	
	114	T.A.A.-Bull &Lynch-Darwin/Mt.Isa/Brs.	172. 1. 0	
	115	A.N.A.-Mt. Isa/Bris. a/c J.Lynch	25.15. 0	
	116	Mindrill Ltd. safety knife & dogs	10.17. 0	
9	117	Mt. Isa Imprest A/c	765. 8.11	
10	118	Broken Hill Felspar Dev-pur.drills	1000. 0. 0	

	By	credit balance	479. 1. 1.
3	"	repayment Mindrill, Melb.	18. 0. 5
11	"	repayment expenses o/charged W.R.Bull	10. 8. 6
11	"	deposit Q.M.L.Melb.	3520.18.11
			£ 4028. 8. 11

2031.

Exhibit "Q" - Document being Annexure 'C' to Interrogatory 6

	119	Tully Wilson-stamp duty houses Mt. Isa	80. 0. 0
	120	S.Coffey-2 weeks salary to 27.11.59	31. 0. 0
	121	T.A.A.-freight drills Mt.Isa	1.15. 0
	122	A.O.E. proport.rental Syd.office	50. 0. 0
16	123	C.I.G.-gas purch.by AOE a/c Q.M.L.	6.14. 4
	124	E.S.C.A. goods " "	3.15.10
	125	Jaques Bros. " "	2. 4. 2
	126	Lincoln Elect. " "	5.14. 7
	127	Westeels(Q'ld) " "	7. 1. 0
17	128	Petty cash reimbursement	8.12. 0
	129	Cancelled	
	130	Mt.Isa Imprest A/c	455. 7. 7
			3220. 2. 9

	808. 6. 2
	3220. 2. 9
Balance	£808. 6. 2.

Exhibit "Q" - Document
being Annexure 'C'
to Interrogatory 6

8A. (m) Following upon the sending of such letter did the first defendant and Mr. Korman have a

15.

conference with the Premier and Minister for Mines for Tasmania?

8B. (m) Yes.

8A. (n) What took place at such conference?

8B. (n) See answers to interrogatories nos. 1.VII (f) (g) and (i). 10

Exhibit "R" - Interrogatories 8(m) and (n) and answers thereto

* 10A. Annexed hereto and marked with the letter "G" is a photocopy of a telegram addressed to the first defendant.

(a) Was the telegram from Mr. Symons received by the firstnamed defendant?

10B. (a) Yes.

10A. (b) Did the firstnamed defendant attend at the appointment with the Premier referred to therein?

10B. (b) Yes. 10

10A. (c))Who were present at such appointment?
)
10A. (d))What occured at such appointment?

17.

10B. (c))See answers to interrogatories nos.
)
10B. (d))1.VII (f) (g) and (i).

* Exhibit "T" page 2035 of this Appeal.

Exhibit "S" - Interrogatories 10(a) to (d) (incl) and answers thereto

'G'

39Y
R.15

+
SRD 060=SRC 026= HTA88 =
HOBART SUB TAS 21 9.55A

E R HUDSON
CARE QUEENSLAND MINES LTD
16 OCONNELL ST
SYDNEY NSW

APPOINTMENT WITH PREMIER ALTERED TO 10AM FRIDAY

... SYMONS DIRECTOR MINES
(16 10AM) 15

(103100D)

7.10 am (Init.)
9.15

Exhibit "T" - Telegram
being Annexure 'G'
to Interrogatory 10

* 13A. Annexed hereto and marked with the letter "J" is a copy of copy letter dated 31st January, 1961.

(a) Was such letter sent by the first defendant?

13B. (a) Yes.

19.

13A. (c) Were steps taken to establish means of access and to commence a geological survey?

13B. (c) Yes.

13A. (d) What steps were taken?

13B. (d) The access road to the deposit was improved and further access roads driven along the deposit.

13A. (e) Who was employed to carry out the work?

13B. (e) Mr. Fagan was employed on roadworks and Mr. Ridgway was employed to do a geological survey.

13A. (g) Did drilling of the ore body commence?

13B. (g) Yes.

13A. (h) By whom was it carried out?

13B. (h) Associated Diamond Drillers Pty. Ltd.

20.

13A. (k) Were the cores of such drills assayed?

13B. (k) Yes.

* Exhibit "A4" page 1358 of this Appeal.

Exhibit "U" - Interrogatories 13(a), (c), (d), (e), (g), (h), (k), (l), (m) and (n) and answers thereto

13A. (l) By whom were such assays carried out?

13B. (l) By the Tasmanian Government Laboratories at Launceston.

13A. (m) To whom were the Reports sent?

13B. (m) To me and Mr. Ridgway.

13A. (n) Identify the reports.

13B. (n) The reports will be made available by my solicitors.

Exhibit "U" - Interrogatories 13(a), (c), (d), (e), (g), (h), (k), (l), (m) and (n) and answers thereto

14A. (e) Was the first defendant the Managing Director

of the plaintiff when exploration licences 4/61 and 5/61 were issued?

14B. (e) Yes.

Exhibit "V" - Interrogatory 14(e) and answer thereto

* 15A. Annexed hereto and marked with the letters "K"

** and "L" are copies of such exploration licences.

15A. (c) Did the first defendant inform the then Directors of the plaintiff that the exploration licences were being applied for on behalf of the plaintiff?

15B. (c) No.

15A. (d) Did the first defendant inform the then Directors of the plaintiff that the exploration licences were being applied for on behalf of the plaintiff and Stanhill Consolidated Limited?

15B. (d) No.

15A. (e) Did the first defendant inform Directors of the plaintiff that he held the exploration licences upon trust for the plaintiff?

15B. (e) No.

15A. (f) Did the first defendant inform the then Directors of the plaintiff that he held the said

23.

exploration licences on trust for the plaintiff and Stanhill Consolidated Limited.

* Exhibit "F" page 1269 of this Appeal.

** Exhibit "G" page 1277 of this Appeal.

Exhibit "W" - Interrogatories 15(c), (d), (e), (f) and (g) and answers thereto

15B. (f) No.

15A. (g) Has the first defendant directly or indirectly received any gain from the issue of such licences?

15B. (g) Yes.

* 16A. Annexed hereto and marked with the letter "M" is a copy of a Deed dated 12th May, 1961 between the first defendant and Dubar Trading Pty. Limited.

(a) Did the first defendant execute such agreement?

16B. (a) Yes.

16A. (b) Did the first defendant disclose to the then Directors of the plaintiff that he had entered into such agreement?

16B. (b) No.

16A. (c) Did the first defendant make available to the Directors of the plaintiff a copy of such agreement?

16B. (c) No.

* Exhibit "Y" page 1416 of this Appeal.

Exhibit "X" - Interrogatories 16(a), (b) and (c) and answers thereto

* 18A. Annexed hereto and marked with the letters "P1", "P2", "P3", "P4" and "P5" are cheque butts numbered 468,479, 486, 487 and 495 being in respect of cheques drawn on the bank account of the plaintiff with Bank of New South Wales, O'Connell Street, Sydney, on 20th February, 6th March, 13th March, 13th March and 24th March, 1961. If the following questions cannot be answered in respect of the cheque butts collectively will the first defendant give separate answers in respect of each.

(a) Does the first defendant agree that these cheques were all drawn by the plaintiff in paying expenses of Mr. J. Ridgway in Tasmania.

18B. (a) These cheques were drawn upon the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney. The accounts paid by these cheques were in respect of expenditure incurred by Mr. Ridgway.

27.

18A. (d) Was the first defendant aware in February and March of 1961 that the plaintiff was paying expenses for Mr. Ridgway in Tasmania?

18B. (d) Yes.

* Exhibit "AA" page 2043 of this Appeal.

Exhibit "Z" - Interrogatories 18(a) and (d) and answers thereto

"P1"

No 468

20. 2. 1961

Westpoint Hotel

a/c J. Ridgway

Tas. Bon

£ 40-0-7

"P2"

No 479

6-3-1961

Kenai Hotel Launie

Expenses a/c. J Ridgeway

£ 9-0-0

Exhibit "AA" - Cheque butts - Annexures "P1" to "P5" (incl.) to Interrogatory 18

No. 486

13. 3. 1961

"P3"

Hotel Menai

Burnie a/c

J. Ridgway

£ 25-3-6

No. 487

13. 3. 1961

West Point Hotel

"P4"

a/c J. Ridgway

£ 29-14-7.

No. 495

24. 3. 1961

Wrightpoint Hotel

"P5"

a/c J. Ridgway

£ 24-13-6

Exhibit "AA" - Cheque butts, Annexures "P1" to "P5" (incl.) to Interrogatory 18

* 25A. Annexed hereto and marked with the letters "U1", "U2", "U3", "U4" and "U5" are lists of expenses indicated to be referrable to J.E. Ridgway.

If the following questions cannot be answered in respect of the accounts collectively will the first defendant give separate answers in respect of each.

(a) Were the expenses set out in the accounts reimbursed by the plaintiff?

(b) Were the expenses incurred by Mr. Ridgway in the course of duties on behalf of the plaintiff?

(c) What were such duties?

(d) Were such expenses incurred directly or indirectly in respect of the Savage River Iron Ore Deposits?

(e) At the date shown for the expenses was Mr. Ridgway in the full time employment of the plaintiff?

(f) At the dates shown on the expenses was Mr. Ridgway a consultant of the plaintiff?

25B. (a) (b) (c) (d) (e) (f) As to list of expenses marked "U2" these were expenses incurred by Mr. Ridgway in connection with work done by Mr. Ridgway in relation to the Savage River Iron Ore Deposits.

* Exhibit "AC" page 2047 of this Appeal.

Exhibit "AB" - Interrogatory 25 and answer relating to list of expenses marked "U2"

I believe that these expenses in "U2" were reimbursed to Mr. Ridgway by two cheques one for £51.8.7 and another for £130 both cheques being drawn upon the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney (see entries dated 9th May, 1961 and 27th May, 1961 respectively at page 55 of cash book of plaintiff relating to the said imprest account of the plaintiff). These cheques were payments made by Queensland

37.

Mines Limited.

Exhibit "AB" - Interrogatory 25 and answer relating to list of expenses marked "U2"

J. E. Ruzgney 'U2'

Brisbane to Tasmania Expenses 14-2-61 — 15-3-61
& return

Transport.	51-4-5
Hobbs Hotel (receipts)	43-7-6
Hotel & motel & meals en route (no receipts	46-12-6.
Incidental expenses	9-12-0
Phone Calls	1-4-0
Postage	1-0-2.
Option Burnie House	10-0-0
Belmont Inspection	
Hotel	17-14-0.
Incidental	14-0.
	181-8-7

£ 51. 8. 7 ' paid J.E.R.

£ 130 due sent.

528

Exhibit "AC" - List of expenses annexed to Interrogatory 25 marked "U2"

* 21A. Annexed hereto and marked with the letters "Q1", "Q2", "Q3", "Q4" and "Q5" are cheque butts numbered 469, 484, 485, 492 and 493 being in respect of cheques drawn by the plaintiff on its bank account with the Bank of New South Wales, 16 O'Connell Street, Sydney, dated 20th February, 13th March, 13th March, 22nd March and 24th March, 1961 respectively.
If the following questions cannot be answered in respect of the cheque butts collectively will the first defendant give separate answers in respect of each.

32.

(a) Does the first defendant agree that these cheques were drawn in respect of expenses incurred by the plaintiff?

21B. (a) No. The cheques (with the exception of cheque no. 469) were drawn upon the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney and were payments made by Queensland Mines Limited. So far as I am aware cheque no. 469 does not relate to the Savage River Iron Ore Deposits.

* Exhibit "AE" page 2049 of this Appeal.

Exhibit "AD" - Interrogatory 21(a) and answer thereto

"Q1"

No 469

20. 2. 1961

Perkins Steel & Engineering

Machinery repairs authorised by Mr. Ridgeway

£ 169-3-11

"Q2"

No 484

13. 3. 1961

Aero Rent-A-Car

Launceston - 19-10-0

Hobart - 13-3-4

£ 32-13-4

Exhibit "AE" - Annexures "Q1" to "Q5" (incl.) to Interrogatory 21

Nº 485

1 13. 3. 1961

"Q3"

C. Davis Ltd.

Galvanised pipe

a/c Buenic Iron &

Steel

£ 38-5-6

Nº 492

"Q4"

22. 3. 1961.

Westpoint Hotel,

E.K. Hudson

Feb. (previous cheque "stop payment".

£ 36-18-0

Nº 493

24. 3. 1960

ANA – E.R.H.

"Q5"

21. 2.61 TAA AR 82234 Syd/Hob

~~22.1. ANA BS 37301 Hob/Melb~~

1.3.61 TAA AP 61013 Melb/Syd

£ 44-8-0

2050.

Exhibit "AE" – Annexures "Q1" to "Q5" (incl.) to Interrogatory 21

"R1"

No 337

31st August 1960

Expenses J. C. Ridgway

to 19th August

c/f Amino

£ 138- 7- 9.

"R2"

No 394

10th May 1960

J. C. Ridgway

Expenses to Oct 30th

1960

£ 45 | 7 | 0.

Exhibit "AF" - Cheque butts being Annexures "R1" to "R4" (incl.) to Interrogatory 22

"R3"

No 447

19th Jan 1961

J. E. Ridgway

expenses to 23/12/60

£ 19/4/2

"R4"

No 473

21st February 1961

Mr. J. E. Ridgway

Tasmanian Expenses 44. 16. 9

Moggill Golf Anderson Fede 5-0-8

£ 49. 17. 5

Exhibit "AF" - Cheque butts being Annexures "R1" to "R4" (incl.) to Interrogatory 22

22A. Annexed hereto and marked with the letters
* "R1", "R2", "R3" and "R4" are cheque butts numbered 337, 394, 447, and 473 drawn by the plaintiff on its bank account with Bank of New South Wales, 16 O'Connell Street, Sydney, dated respectively 31st August, 1960; 10th November, 1960, 19th January 1961 and 21st February 1961. If the following questions cannot be answered in respect of the cheque butts collectively will the first defendant give separate answers in respect of each.

33.

(a) Were these expenses paid by these cheques incurred by the plaintiff?

(b) Was Mr. Ridgway an employee of the plaintiff at the time of the incurring of these expenses?

(c) Was Mr. Ridgway a consultant of the plaintiff at the time of the incurring of these expenses?

(d) Were these payments made with the knowledge and authority of the firstnamed defendant?

(e) Was the expenditure in respect of matters concerned directly or indirectly with the plaintiff's business?

* Exhibit "AF" page 2051 of this Appeal.

Exhibit "AG" - Interrogatory 22 and answer thereto

(f) If so, in respect of what part of the plaintiff's business?

22B. (a) (b) (c) (d) (e) (f) So far as I am aware none of the cheques numbered 337, 394, and 447 relate to the Savage River Iron Ore Deposits. The position is the same in relation to the 5.08 pounds part of the cheque no. 473. As to £44.16.9 ~~pounds~~ part of cheque no. 473 this cheque was drawn upon the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney and relate to expenses incurred by Mr. Ridgway in Tasmania. This amount was paid to Mr. Ridgway by Queensland Mines Limited with my knowledge and authority. Mr. Ridgway was appointed as a consultant to the plaintiff as at 1 January, 1961 at an annual salary of 1,000 pounds. (See Minutes of Meeting of Board of Directors of Plaintiff of 22 December, 1960). Mr. Ridgway's appointment as consultant was terminated on 31 July, 1961 (see Minutes of Meeting of Board of Directors of Plaintiff of 13th February, 1962). The plaintiff did not pay Mr. Ridgway any

Exhibit "AG" - Interrogatory 22 and answer thereto

fees as consultant to the plaintiff during this period. (See entry dated July, 1963 in journal of plaintiff - page 27).

23A. Annexed hereto and marked with the letters
* "S1", "S2", "S3", "S4", "S5", "S6" and "S7" are copies of cheque butts numbered 355, 371, 463, 464, 465, 481 and 494 drawn by the plaintiff on its bank account with Bank of New South Wales, 16 O'Connell Street, Sydney, dated respectively 26th September and 14th October, 1960, 10th February, 17th February, 17th February, 6th March, and 24th March, 1961. If the following questions cannot be answered in respect of the cheque butts collectively will the first defendant give separate answers in respect of each.

(a) Does the first defendant agree that these cheques were drawn in respect of expenses incurred by the plaintiff?

(b) Were these expenses all in respect of accommodation and travelling of the first defendant?

(c) Were these expenses related directly or indirectly into investigation of the Savage River Iron Ore Deposits and explorations or leases in respect thereof?

(d) Did the firstnamed defendant authorise the payment of these amounts?

* Exhibit "AJ" page 2058 of this Appeal.

Exhibit "AH" - Interrogatory 23 and answer thereto

(e) What was the nature of the business in connection with which this expenditure was made?

23B. (a) (b) (c) (d) (e) All these cheques were drawn with my authority upon the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney and were payments made by Queensland Mines Limited. The accounts paid by these cheques were in respect of expenditure incurred by either me or Mr. Ridgway in the course of doing work in connection with the Savage River Iron Ore Deposits.

Exhibit "AH" - Interrogatory 23 and answer thereto

No 355

26. 9. 1960

Westpoint Hotel

a/c E.C.H.

Hobart Dem – Steel

visit

£ 16-7-3

"S1"

"S2"

No 371

14. 10. 1960

West Point Hotel

Hobart

Accommodation

£ 6-3-0

No 463

10. 2. 1961

Tas. Govt. Tourist

Bureau

Reporit Ferry

fare to Hobart

£ ~~[illegible]~~ 45-8-0

"S3"

2058.

Exhibit "AJ" - Annexures "S1" to "S7" (incl.) to Interrogatory 23

"S4"

No 464

17. 2. 1961

Ernest ana.

ERH. – J&R. Syd/Laun/
Hobart/Melb/Syd.
1 – 3/2/61

£ 60 – 2 – 0

"S5"

No 465

17. 2. 1961

Ernest – a.n.a.

ERH – Syd/Melb/Hbt/Melb/Syd
23 – 27/1/61

B 516869/70/807518.

£ 44-8-0.

Exhibit "AJ" - Annexures
"S1" to "S7" (incl.) to
Interrogatory 23

"S6"

No 481

6 - 3 1961

Westpoint Hotel

Accom a/c E R Hudson

£ 60 - 17 - 11

"S7"

No 494

24. 3. 1961

Avis Rent - a - Car

E R H Hobart

£ 35 - 7 - 6

Exhibit "AJ" - Annexures
"S1" to "S7" (incl.) to
Interrogatory 23

"T1"

No 339

31st August 1960

E.R. Hudson

Expenses O.M.

£ 119-10-0

"T2"

No 359

29.9.1960

E.R. Hudson

Expenses Sept.

£ 95-0-0

"T3"

No 375

24.10.1960

E.R.H

ANA [illegible] Syd/Melb/Syd. ticket 746136. 23.0.0

T.A.A. Melb/Hob. AG 56210 " Hob/Melb. BN C5211 [illegible]) 19-1.0.

£ 42-7-0

Exhibit "AK" - Annexures "T1" to "T8" (incl.) to Interrogatory 24

Nº 383

25th October 1960.

Cash. E.R. Hudson

Directors Expenses

Oct 6th to 17th 1960

£ 43-12-0

"T4"

Nº 416

5.12. 1960

E.R. Hudson

Directors

Expenses

£ 44-5-0

"T5"

Nº 448

20. 1. 1961

Cash - E.R.H

expenses a/c

Iron ore trip

Nelt / Hobart

£ 70-0-0

"T6"

2062.

Exhibit "AK" - Annexures "T1" to "T8" (incl.) to Interrogatory 24

"T7"

No 458

7. 2. 1961.

E. R. Hudson

Expenses - Tas. Def.

Dec, Jan & Feb.

£ 44-2-0

"T8"

No 489

13. 3 1961

E. R. Hudson - refund of expenses Tas. visit one month

£ 14-10-4

Exhibit "AK" - Annexures "T1" to "T8" (incl.) to Interrogatory 24

2063.

24A. Annexed hereto and marked with the letters

* "T1", "T2", "T3", "T4", "T5", "T6", "T7" and "T8" are

35.

copies of cheque butts numbered 339, 359, 375, 383, 416, 448, 548 and 489 drawn by the plaintiff on its bank account with the Bank of New South Wale 16 O'Connell Street, Sydney, dated respectively 31st August, 29th September, 24th October, 28th October and 5th December, 1960 and 20th January, 7th February and 13th March, 1961.

If the following questions cannot be answered in respect of the cheque butts collectively will the first defendant give separate answers in respect of each.

(a) Does the first defendant agree that these cheques were drawn by the plaintiff in respect of expenses incurred on its behalf?

(b) Were such expenses incurred in respect of the business of the plaintiff?

(c) In respect of what business of the plaintiff were such expenses incurred?

(d) Is the E.R. Hudson referred to the same person as the first defendant?

* Exhibit "AK" page 2061 of this Appeal.

Exhibit "AL" - Interrogatory 24 and answer thereto

(e) Did the first defendant authorise the payment of these expenses?

(f) Did the first defendant know that these expenses were being paid by the plaintiff?

(g) Butt number 489 refers to "E. R. Hudson - refund of expenses Tas. Iron Ore vists". Does this refer to matters connected directly or indirectly with the Savage River Iron Ore Investigations by or on behalf of the plaintiff?

24B. (a) (b) (c) (d) (e) (f) As to cheques nos.339 , 383, 416 - I am unable to answer the interrogatories without seeing the relevant supporting vouchers. The position is the same as to 23.6.0 pounds part of cheque no. 375 and an unspecifiable part of cheques nos. 359 and 458. As to cheques nos. 448, 489, and an unspecifiable part of cheques nos. 359 and 458 and 19.1.0 pounds part of cheque no. 375 these cheques were drawn with my authority upon the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney and were payments made by Queensland Mines Limited.

Exhibit "AL" - Interrogatory 24 and answer thereto

36.

The accounts paid by these cheques were in respect of expenditure incurred by me in connection with work done by me in relation to the Savage River Iron Ore Deposits.

31A. Annexed hereto and marked with the letters
* "AA1" etc. is a bundle of copies of invoices, accounts, receipts and vouchers.
If the following questions cannot be answered in respect of such documents collectively will the first defendant give separate answers in respect of each.

(a) Were the expenses shown in the accounts and invoices expenses of the plaintiff?

(b) Were such expenses incurred in respect of the business of the plaintiff? 10

42.

(c) What was the business of the plaintiff in respect of which such expenses were incurred?

(d) Were the expenses incurred with the authorisation of the first defendant?

(e) Were the expenses incurred related directly or indirectly to the Savage River Iron Ore Load? 20

(f) Was Industrial & Mining Investigations Pty. Limited acting for and on behalf of the plaintiff?

(g) If so, in what capacity was it so acting?

(h) If not, on whose behalf was the company so acting?

* Exhibit "AN" page 2071 of this Appeal.

Exhibit "AM" - Interrogatory 31(1), (2) and (3) and answers thereto

31B. (a)(b)(c)(d)(e)(f)(g)(h)(1) The expenses referred to in the documents, copies of which are contained in a bundle and marked "ERH 1-26(c)" have been dealt with in answers to previous interrogatories as follows:-

DOCUMENT ERH	Answer to interrogatory/no.
1	23"S1"
2	24"T2"
3	23"S2"
4	21"Q4"
5	25"U2"
6	22"R4"
	25"U1"
7	22"R4"
	25"U1"
8	22"R4"
	25"U1"
9	22"R4"
	25"U1"
10	25"U2"
11	22"R4"
	25"U1"
12	25"U2"
13(a)(b)(c)	18"P1"
14	18"P2"
15	25"U2"
16	25"U2"
17(a)(b)	18"P5"
18	25"U2"
19	21"Q3"

Exhibit "AM" - Interrogatory 31(1), (2) and (3) and answers thereto

DOCUMENT ERH	20 - Answer to interrogatory	no./23"S6"
	21	18"P3"
	22	25"U2"
	23	25"U2"
	24	25"U2"
	25	18"P4"
	26(a)(b)(c)	21"Q2"

(2) The expenses referred to in the documents, copies of which are contained in a bundle and marked "ERH 27-29" (6.11.10 pounds; 3.5.4 pounds, 3.0.4. pounds) were to the best of my knowledge, information and belief, expenses incurred with my authority by Mr. Palmer, Mr. Ridgway and Mr. Hudson respectively in the course of doing work in relation to the Savage River Iron Ore Deposits. I am unaware whether such expenses were reimbursed.

(3) The expenses referred to in the documents, copies of which are contained in a bundle and marked "ERH 30-32" (4.0.6 pounds, 1.10.0 pounds and 5.9.9 pounds) were to the best of my knowledge information and belief, expenses incurred with my

authority in relation to the Savage River Iron Ore Deposits. These expenses were paid by cheques drawn by me on the imprest account of Queensland Mines Limited with the Bank of New South Wales, 16 O'Connell Street, Sydney and were payments made by Queensland Mines Limited.

Exhibit "AN" - Document marked "ERH1" annexed to Answer to Interrogatory 31

2071.

WREST POINT RIVIERA HOTEL, HOBART, TASMANIA

TELEPHONE 5-1021 • • CABLES "WREST POINT" HOBART

QUEENSLAND MINES LTD.
MR. E. R. HUDSON
16 O'Connell ST
SYDNEY.

ROOM No. 12[illegible]

DATE OF ARRIVAL 20.9.6[illegible]	20	21
APARTMENTS & RATE	4	
DINING ROOM BREAKFAST		
" LUNCH	2 . 1 . 6	
" DINNER	2 .	
" BEVERAGES	2 .	
ROOM SERVICE MORNING TEA BREAKFAST		3
"		
" BEVERAGES		
LOUNGE		
" BEVERAGES	1 . 3 .	
BANQUETS CATERING		
" BEVERAGES		
OTHER CHARGES CATERING		
" BEVERAGES		
TELEPHONE LOCAL CALLS		
" TRUNKS & T/GRAMS	1 . 12 . 9	
BOOKSTALL		
LAUNDRY		
DRY CLEANING		
RADIO & TV		
SUNDRIES		
PAID OUT	12 .	
DAILY TOTAL	16 . 7 . [illegible]	3
BROUGHT FORWARD		16 . 7 . 3
TOTAL	16 . 7 . [illegible]	16 . 10 . 3
CASH		
ALLOWANCES		
CARRIED FORWARD	7	

This is the bundle of documents marked "ERH 1 to ERH 2[illegible] (e)" referred to in the annexed verified statement in answer to interrogatories sworn the 28th day of June, 1974 at Sydney before me:

[signature]
A Justice of the Peace

Exhibit "AN" - Document marked "ERH1" annexed to Answer to Interrogatory 31

"ERH 2"

No. 29. 9. 1960

Received from Queensland Mines Ltd.

the sum of Ninety five pounds

— shillings — pence

being for Expenses — September

[illegible] / Melb / Tasmania / Melb

£95 : — : —

Per ....

Exhibit "AN" - Document marked "ERH2" annexed to Answer to Interrogatory 31

2074. Exhibit "AN" - Document marked "ERH3" annexed to Answer to Interrogatory 31

WREST POINT RIVIERA HOTEL, HOBART, TASMANIA

TELEPHONE 5-1021 • • CABLES "WREST POINT" HOBART

"ERH 3"

Mrs Hudson,
[illegible],
[illegible]...South Australia.
16. O'CONNELL ST
SYDNEY.

ROOM No. 136

DATE OF ARRIVAL 6/2/62	6	7						
APARTMENTS RATE	6 " "							
DINING ROOM BREAKFAST								
" LUNCH								
" DINNER								
" BEVERAGES								
ROOM SERVICE MORNING TEA BREAKFAST		2 "						
"								
" BEVERAGES								
LOUNGE								
" BEVERAGES								
BANQUETS CATERING								
" BEVERAGES								
OTHER CHARGES CATERING								
" BEVERAGES								
TELEPHONE LOCAL CALLS								
" TRUNKS & T/GRAMS								
BOOKSTALL								
LAUNDRY								
DRY CLEANING								
RADIO & TV								
SUNDRIES								
PAID OUT								
DAILY TOTAL	6 " "	3 "						
BROUGHT FORWARD		("						
TOTAL	6	("						
CASH								
ALLOWANCES								

2075. Exhibit "AN" - Document marked "ERH3" annexed to Answer to Interrogatory 31

2076. Exhibit "AN" - Document marked "ERH4" annexed to Answer to Interrogatory 31

"ERH 4"

Federal Hotels

ACROSS THE NATION

ROOM No.........

- IN MELBOURNE
  - HOTEL FEDERAL
  - MENZIES
  - SAVOY PLAZA
- IN SYDNEY USHERS AND HAMPTON COURT
- IN HOBART
  - WREST POINT

WREST POINT HOTEL

MR. HUDSON.
18 O'CONNELL ST
SYDNEY.
NSW

February 1961

DETAILS OF BALANCE BROUGHT FORWARD	90 DAYS O'DUE	60 DAYS O'DUE	30 DAYS O'DUE	LAST MONTH	BALA

	DATE	REF.	PARTICULARS	DEBIT	CREDIT	
Cheque £36-18-0 No. 4 [illegible]						
forwarded [illegible] for payment [illegible]						
R. Clark [illegible] Ltd						
Previous cheque no 4576 : Bank [illegible] [illegible]						
to State [illegible]						

2077. Exhibit "AN" - Document marked "ERH4" annexed to Answer to Interrogatory 31

"ERH 5"

Telephone
FJ 3657

Hotel Mayfair No. 4761

766 ELIZABETH STREET, MELBOURNE, C.1

....19

Received from Mr. [illegible]

the sum of ELEVEN pounds

FOUR Shillings and — Pence

Being for [illegible]

[illegible]

DU
ST

£ s d

WITH THANKS,

Hotel Mayfair

[illegible]

CP/5/60/114537

Exhibit "AN" - Document
marked "ERH5" annexed to
Answer to Interrogatory 31

"ERH 6"

Exhibit "AN" - Document marked "ERH6" annexed to Answer to Interrogatory 31

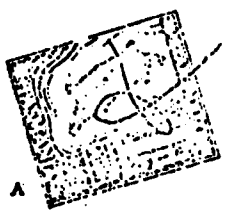
"ERH7"

THE ADVOCATE NEWSPAPER PTY. LTD.
A Subsidiary of Harris & Co. Ltd.

BURNIE

No 22929 £-2-1961

RECEIVED from M J.E Ridgway
Manning Side Queensland the sum of
By Cash Three pounds Six Shillings
Six pence, with thanks —
THE ADVOCATE NEWSPAPER PTY. LTD.
Per JEJ



	Agency	Advertising - General	Total
Cash	£ : :	£ 3 : 6 : 6	£ 3 : 6 : 6
Agency Discount	£ : :	£ : :	£ : :
TOTAL	£ : :	£ 3 : 6 : 6	£ 3 : 6 : 6

2080. Exhibit "AN" - Document marked "ERH7" annexed to Answer to Interrogatory 31

R[illegible] Rate .....
Inc. Tariff .....
Bed & B'fast .....

Phone 1484

W. J. Campbell, Proprietor
MENAI STREET
BURNIE

Room No. 14

No 10745

"ERH8"

In account with Mr Rogers

GUESTS ACCOUNTS RENDERED WEEKLY

Date	Breakfast	Lunch	Dinner	Room	Trays	Guests	Papers	Teas and Suppers	Laundry and Iron	Telephone	Wine and Spirits	Sundries	Carried Forward			Total		
														10	6			
1			1	1					1	1								
2	1						6						3	2	6			
																3	12	6
																	10	6
																3	2	6

Visitors are requested to call early attention to any errors that may appear in their accounts

Exhibit "AN" - Document marked "ERH8" annexed to Answer to Interrogatory 31

2081.

"ERH9"

1008 Launceston, 8 - 2 - 61

RECEIVED from E. R. Hudson

16 O'Connell St Sydney

the sum of two pounds

eleven shillings pence

for Advertisement in Mercury

on 9/2/61 (Evening Adv)

Duty Stamp

With Compliments and thanks

W. R. ROLPH & SONS PTY. LTD.

Ex. 54366 (D) 2-11-9 Per

"ERH10"

№ 14791

196

RECEIVED from M

the sum of Pounds

Shillings and Pence

for

£5 : 8 : -

per

THIS IS OUR RECOGNISED FORM OF RECEIPT

Exhibit "AN" - Documents marked "ERH9" & "ERH10" annexed to Answer to Interrogatory 31

Office 2 5226
Private 58 1784

"ERH 11"

Room 4, 2nd Floor,
Brisbane Permanent Bank Building,
113-115 Queen Street,
Brisbane.

14th Feb. 198

Mr. J. E. Ridgway,
43 Paramount Terrace,
MORNINGSIDE. BNE.

Dr. To Miss Doris Collick

TYPING, DUPLICATING and MAILING SERVICE

To Typing 1 x 6 copies Geological Report
Sugars Blue Metal,
Posting receipts and letter
To Typing condensed report Andersons Lode
Dictation per phone
Typing and posting letters as dictated.

TOTAL £4.15. 2

Paid With Thanks
D Collick

Exhibit "AN" - Document marked "ERH11" annexed to Answer to Interrogatory 31

"ERH 12"

Phones:
J 4271
J 4272

948

HOTEL BELMONT

BELMONT, N.S.W.

18. 2. 19 61

Name Mrs Ada Lindgren Room No. 15 Tariff

Date	Apartments	Breakfast	Lunch	Dinner	Tea Tray	Telephone	Sundries	TOTAL
16/2/62	3 0 0		1 8 6	2 11 0	1 10		2 5	7 16
17/2/62	3 0 0		1 8 6	2 14 0	3 .		3 5	7 17
							1	1

YOUR KEY PLEASE !

Exhibit "AN" - Document marked "ERH12" annexed to Answer to Interrogatory 31

2085. Exhibit "AN" - Document marked "ERH13(a)" annexed to Answer to Interrogatory 31

WREST POINT RIVIERA HOTEL, HOBART, TASMANIA

TELEPHONE 5-1931 • • CABLES 'WREST POINT' HOBART

ERH13

Mr Ridgeway
a/c c/- Queensland Mines Ltd.,
16 O'Connell St., Sydney

ROOM No. 513

DATE OF ARRIVAL 8/2/61	8			9																		
APARTMENTS £ 4 RATE	4			4																		
DINING ROOM BREAKFAST					[illegible]																	
" LUNCH																						
" DINNER				[illegible]	[illegible]																	
" BEVERAGES																						
ROOM SERVICE MORNING TEA BREAKFAST																						
"																						
" BEVERAGES																						
LOUNGE																						
" BEVERAGES																						
BANQUETS CATERING																						
" BEVERAGES																						
OTHER CHARGES CATERING																						
" BEVERAGES																						
TELEPHONE LOCAL CALLS																						
" TRUNKS & T/GRAMS																						
BOOKSTALL																						
LAUNDRY	1	[illegible]	1																			
DRY CLEANING																						
RADIO & TV																						
SUNDRIES																						
PAID OUT																						
DAILY TOTAL	[illegible]	[illegible]	1	[illegible]	[illegible]																	
BROUGHT FORWARD	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]																
TOTAL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]																	
CASH																						
ALLOWANCES																						

2086. Exhibit "AN" - Document marked "ERH13(a)" annexed to Answer to Interrogatory 31

WRIEST POINT RIVIERA HOTEL, HOBART, TASMANIA

TELEPHONE B-1331 • • CABLES "WRIEST POINT" HOBART

Mrs Ringelman.

ROOM No. 304

DATE OF ARRIVAL	6			7																ERH 13(b)
APARTMENTS £ / RATE	4	.	.																	
DINING ROOM BREAKFAST		2	.		2															
" LUNCH	1	2	6																	
" DINNER	1	5	6																	
" BEVERAGES																				
ROOM SERVICE MORNING TEA BREAKFAST																				
"																				
" BEVERAGES																				
LOUNGE																				
" BEVERAGES																				
BANQUETS CATERING																				
" BEVERAGES																				
OTHER CHARGES CATERING																				
" BEVERAGES																				
TELEPHONE LOCAL CALLS																				
" TRUNKS & T/GRAMS																				
BOOKSTALL																				
LAUNDRY																				
DRY CLEANING																				
RADIO & TV																				
SUNDRIES																				
PAID OUT																				
DAILY TOTAL	6	10	.		2															
BROUGHT FORWARD	21	.	6	27	10	6														
TOTAL	27	10	6	27	12	6														
CASH																				
ALLOWANCES																				
CARRIED FORWARD	27	10	6	27	12	6														

ACCOUNTS ARE DUE THE DAY THEY ARE RENDERED

Exhibit "AN" - Document marked "ERH13(b)" annexed to Answer to Interrogatory 31

2087.

WREST POINT RIVIERA HOTEL

TELEPHONE 5 4021 CABLES "WREST POINT"

"ERH13(c)"

ROOM NO. 3044

M. Kalgovay

DATE OF ARRIVAL 3/2/64	3						5		
APARTMENTS & RATE	4	.	.	1			1		
DINING ROOM BREAKFAST					2	.		2	
" LUNCH				2	2	6	1	7	6
" DINNER	1	8	6	2	6	6	1	7	.
" BEVERAGES									
ROOM SERVICE MORNING TEA BREAKFAST									
"									
" BEVERAGES									
LOUNGE									
" BEVERAGES									
BANQUETS CATERING									
" BEVERAGES									
OTHER CHARGES CATERING									
" BEVERAGES									
TELEPHONE LOCAL CALLS									
" TRUNKS & T/GRAMS									
BOOKSTALL									
LAUNDRY									
DRY CLEANING									
RADIO & TV									
SUNDRIES									
PAID OUT									
DAILY TOTAL	5	8	6	4	1	.	6	4	
BROUGHT FORWARD				5	8	6	[illegible]	[illegible]	6
TOTAL	5	8	6	1[illegible]	9	6	[illegible]	.	6
CASH									
ALLOWANCES									
CARRIED FORWARD	5	8	6	[illegible]	9	6	[illegible]	.	6

Accounts are due the day they are rendered.

FORM 114A

2088. Exhibit "AN" - Document marked "ERH13(c)" annexed to Answer to Interrogatory 31

Room Rate ....

Inc. Tariff ....

Bed & B'fast ....

Phone 1384

HOTEL MENAI

W. J. Campbell, Proprietor

MENAI STREET

BURNIE

26 . 3 . 1961

Room No.

30

Nº 12048

"ERH14"

In account with Mr. & Mrs. Ridgeway

Queensland [illegible] Ltd, 60 [illegible]

GUESTS ACCOUNTS RENDERED WEEKLY

Date	Breakfast	Lunch	Dinner	Room	Trays	Guests	Papers	Teas and Suppers	Laundry and Iron	Telephone	Wine and Spirits	Sundries	Carried Forward			Total		
								1/-						10	6			
25		2	2	2					1	1		3/-						
26	2							3/-					8	15	0			
																9	8	6
																	10	0
																	2	–
																9	6	6

HOTEL MENAI

3287 BURNIE, Mar 8th 1961.

RECEIVED from Mr & Mrs Ridgeway

the sum of Nine Pounds

.... Shillings .... Pence

For ....

£9/-/-

With Thanks,
W. J. CAMPBELL
Proprietor
Per ....

Visitors are requested to call early attention to any errors that may appear in their accounts

2089. Exhibit "AN" - Document marked "ERH14" annexed to Answer to Interrogatory 31

"ERH 15"

.................O.................A/c.
1911 ....21 . 2 ....19 61
RECEIVED from ....

by cash / cheque ....Pounds
..............................Shillings
and ....Pence, for
which we thank you.

J. F. BRADY

Exchange

Per..............................

J. F. BRADY

LICENSED ESTATE AND BUSINESS AGENT
INSURANCE AND HOTEL BROKER
VALUATOR

71 Wilson Street, BURNIE. 'Phone 820

Instalment			Interest			Total		
						70		

Exchange Must Be Added to Country Cheques
Instalments Should Be Paid Through Office

2090. Exhibit "AN" - Document marked "ERH15" annexed to Answer to Interrogatory 31

ULVERSTONE

RECEIVED from

the sum of ..... Pounds

..... Shillings ..... Pence NO 684

for

By Cheque/Cash

With Thanks £

MOTEL LEVEN — Ulverstone

Per

"ERH16"

J.E. RIDGWAY

TASMANIA.

EXPENSES 14.2.61 - 15.3.61.

Transport	51. 4. 5
Motel & Hotel expenses and meals (receipts)	43. 7. 6
Hotel & Motel expenses and meals (no receipts)	46.12. 6
Incidental expenses	9.12. 0
Phone calls	1. 4. 0
Postage	1. 0. 2
Option Burnie House	10. 0. 0
	£163. 0. 7

BELMONT INSPECTION

Hotel	17.14. 0
Incidental	14. 0
	£18. 8. 0

Total - £181. 8. 7

Exhibit "AN" - Document marked "ERH16" annexed to Answer to Interrogatory 31

WREST POINT RIVIERA HOTEL, HOBART, TASMANIA

TELEPHONE [illegible] - - CABLES "WREST POINT" HOBART

[illegible] RIDGEWAY MR & MRS

ROOM No. 309

ERH 17(a)

DATE OF ARRIVAL 2.3.61.	2.			3.			4		
APARTMENTS RATE £ 6 : 15	6	15	·	6	15	·			
DINING ROOM BREAKFAST					4	·		4	
" LUNCH					19	·			
" DINNER	2	17			·		2	5	6
" BEVERAGES					13	·			
ROOM SERVICE MORNING TEA BREAKFAST									
"									
" BEVERAGES									
LOUNGE		3	·						
" BEVERAGES									
BANQUETS CATERING									
" BEVERAGES									
OTHER CHARGES CATERING									
" BEVERAGES									
TELEPHONE LOCAL CALLS									
" TRUNKS & T/GRAMS				1	18	·			
BOOKSTALL									
LAUNDRY									
DRY CLEANING									
RADIO & TV									
SUNDRIES									
PAID OUT									
DAILY TOTAL	9	15	·	10	9	·	4	9	6
BROUGHT FORWARD				9	15	·	20	4	·
TOTAL	9	15	·	20	4	·	24	13	
CASH							24	13	6
ALLOWANCES									
CARRIED FORWARD	9	15	·	20	4	·			

ACCOUNTS ARE DUE THE DAY THEY ARE RENDERED

2092. Exhibit "AN" - Document marked "ERH17(a)" annexed to Answer to Interrogatory 31

"ERH 17(b)"

Room No. 16 29. 3. 61 19

Received from Mr Ridgway

the sum of Thirty Four pence,

Sixteen shillings, five pence,

by for

For WREST POINT

A Shaw

A Nº 25038

Federal Hotels

ACROSS THE NATION

- IN MELBOURNE: HOTEL FEDERAL, MENZIES, SAVOY PLAZA
- IN SYDNEY: USHERS, HAMPTON COURT LTD.
- IN HOBART: WREST POINT

Current A/c.			Ledger			Deposits			Sundries			Exch...
			34	16	6	..						

"ERH 18"

ULVERSTONE 6 - 3 - 1961

RECEIVED from Mr. Ridgway

the sum of five Pounds

nine shillings —— pence

for Accom

Nº 728

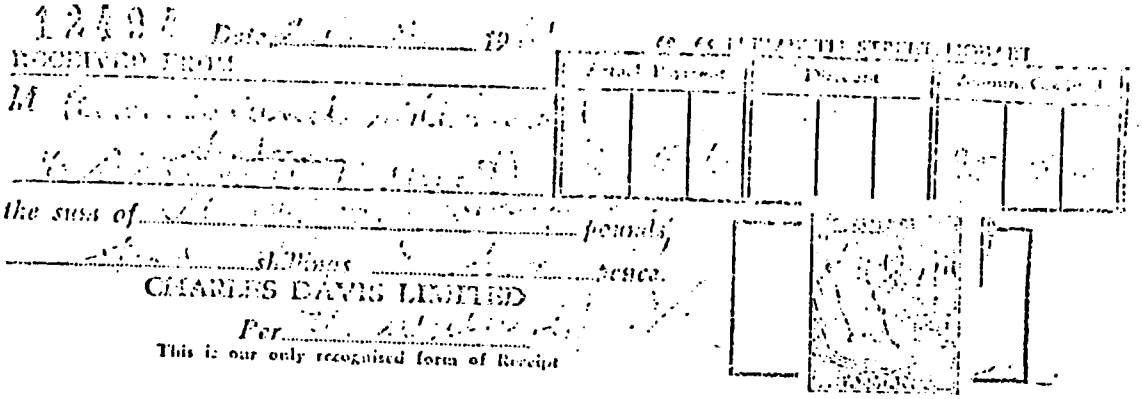
By Cheque/Cash

With Thanks £ 5 : 9 : -

EL LEVEN — Ulverstone

Carol Smith

Exhibit "AN" - Documents marked "ERH17(b)" and "ERH18" annexed to Answer to Interrogatory 31


12492 Date 19
RECEIVED FROM
the sum of pounds
shillings pence.
CHARLES DAVIS LIMITED
Per
This is our only recognised form of Receipt

"ERH 19"

Exhibit "AN" - Document marked "ERH19" annexed to Answer to Interrogatory 31

"ERH19"

4S

CHARLES DAVIS
LIMITED
ESTABLISHED 1847

HARDWARE MERCHANTS AND IMPORTERS
CABLES & TELEGRAMS "HARDWARE"
PHONE 207, 543
127 WILSON STREET, BURNIE, TAS.
P.O. BOX 141

"Queensland Mines Ltd."
Sydney
16 O'Connell St Sydney

DEPARTMENT	ASSIS. No.	CHECKED BY	DATE	TYPE SALE
B/X	JD	KN	7.3.61	

14 Lengths 1" Galvd Pipe = 302'2" @ 1/5¾ ft	22.7.0
1 only 400 gal. Galvd Tank.	15.18.6
	£38.5.6

Ex

Kindly return this a/c together with your Receipt.

Taken by N Kiggins 2-3-61

B 00305 - 43

LAMSON PARAGON LIMITED

5308

Exhibit "AN" - Document marked "ERH19" annexed to Answer to Interrogatory 31

No. [illegible] 19 [illegible]

[illegible] from [illegible]

[illegible] of [illegible] pounds,

[illegible] shillings, [illegible] pence.

by Cheque for N.S.W. Sydney

For WREST POINT HOTEL

[illegible]

No 2290

Federal Flag

ACROSS THE NATION

* IN MELBOURNE
HOTEL FEDERAL
MYERS
COLLINS PLAZA

* IN SYDNEY
QUAY
HAMPTON COURT LTD.

* IN PERTH
WEST PERTH

Current A/c.			Ledger			Deposits			Sundries			
			64	17	11							

ERH 20

2096.

Exhibit "AN" - Document marked "ERH20" annexed to Answer to Interrogatory 31

WREST POINT RIVIERA HOTEL, HOBART, TASMANIA

TELEPHONE 3-1021 • • CABLES "WREST POINT" HOBART

"ERH 20"

ROOM No. 306

DATE OF ARRIVAL	27							
APARTMENTS & RATE								
DINING ROOM BREAKFAST								
" LUNCH								
" DINNER								
" BEVERAGES								
ROOM SERVICE MORNING TEA BREAKFAST	3							
"								
" BEVERAGES								
LOUNGE								
" BEVERAGES								
BANQUETS CATERING								
" BEVERAGES								
OTHER CHARGES CATERING								
" BEVERAGES								
TELEPHONE LOCAL CALLS								
" TRUNKS & T/GRAMS								
BOOKSTALL								
LAUNDRY								
DRY CLEANING								
RADIO & TV								
SUNDRIES								
PAID OUT								
DAILY TOTAL		3						
BROUGHT FORWARD	60	11	11					
TOTAL	60	17	11					
CASH								
ALLOWANCES								
CARRIED FORWARD								

Exhibit "AN" - Document marked "ERH20" annexed to Answer to Interrogatory 31

2097.

HOTEL MENAI

3315 BURNIE, T. [illegible] 3 [illegible] 196[illegible]

RECEIVED from M [illegible]

the sum of Twenty Five [illegible] Pounds

Three Shillings Six Pence

For [illegible]

£25: 3: 6

With Thanks,
W. J. CAMPBELL,
Proprietor
Per [illegible]

Mar 9th 1961

Room Rate ....

Inc. Tariff ....

Bed & B'fast ....

HOTEL MENAI

W. J. Campbell, Proprietor

MENAI STREET
BURNIE

Phone 1484

Room No. 30

Nº 12305

In account with Mr & Mrs. Ridgway

a/c

GUESTS ACCOUNTS RENDERED WEEKLY

Date (Mar)	Breakfast	Lunch	Dinner	Room	Trays	Guests	Papers	Teas and Suppers	Laundry and Iron	Telephone	Wine and Spirits	Sundries	Carried Forward	Total
6			2	2					Key dep.				10/-	
7	2						4	3/-					8 3 4	
7			2	2						8/-				0
8	2						4	3/-		7/-			8 7 4	
8			2	2						9/6				
9	2						4	3/-					8 10 10	
														25 13 6
														10 -
														25 3 6

[illegible]

Visitors are requested to call early attention to any errors that may appear in their accounts

2098. Exhibit "AN" - Document marked "ERH21" annexed to Answer to Interrogatory 31

ERH 22

GUNDAGAI MOTEL

No 18857

Sheridan St., Gundagai.
Telephone: 166.

11th March 19 61

RECEIVED from Mr. J. E. Ridgway

the sum of Two pounds

Two shillings — pence

Being for Room

£ 2 : 10 :-

13-Mar-61

Owned and Operated by
MOTELS OF AUSTRALIA LTD.

ERH 23

P.O. Box 28
Phone 2251

STARDUST MOTEL

KEMPSEY

13 March 61

Received from Mr. J. E. Ridgway

the sum of Three Pounds

Seven Shillings and — Pence

ACCOMMODATION	RESTAURANT	SUNDRIES	EXCHANGE	TOTAL
£ 3 : 5 : 0	£ : :	£ : :		£ 3 : 5 : 0

With thanks.

No 2971

Stardust Motels Pty. Ltd.

Per

Exhibit "AN" - Documents marked "ERH22" & "ERH23" annexed to Answer to Interrogatory 31

"ERH 24"

CUBANA MOTEL
371-375 Pacific Highway
BALLINA

'Phone 532

Date 15-3-61

Received from Cash the sum of

.... pounds .... shillings .... pence

For Room 4

ACCOMMODATION	£ 2 : 5 : 9
DINNER	£ : 19 : 0
BREAKFAST	£ : 13 : 0
SUNDRIES	£ : :
TOTAL	£ 3 : 17 : 9

With Thanks
CUBANA MOTEL

Per........

...... 19 ...

from ...... [illegible]

of Twenty Three ...... pounds,

...... shillings, ... pence,

by ...... for NSW ......

For WREST POINT HOTEL

[illegible signature]

No 2371

Federal Hotels

ACROSS THE NATION

- IN MELBOURNE
- IN SYDNEY
- IN HOBART

Current A/c.	Ledger	Deposits	Sundries	Exes.
	23/4/7			

"ERH 25"

Exhibit "AN" - Documents marked "ERH24" & "ERH25" annexed to Answer to Interrogatory 31

WREST POINT RIVIERA HOTEL, HOBART, TASMANIA

TELEPHONE 5-1021 · · CABLES "WREST POINT" HOBART

Ridgway Mills
Q'LAND MINES.
c/o O'Connell

ROOM No. 405

DATE OF ARRIVAL 23/2/61	23	24	25	26	27/28	1
APARTMENTS £ RATE	6 15 ·	6 15 ·	6 15	6 15		
DINING ROOM BREAKFAST		4 ·				
" LUNCH		1 18 ·				
" DINNER						
" BEVERAGES						
ROOM SERVICE MORNING TEA BREAKFAST			6 ·			
"						
" BEVERAGES						
LOUNGE						
" BEVERAGES						
BANQUETS CATERING						
" BEVERAGES						
OTHER CHARGES CATERING						
" BEVERAGES						
TELEPHONE LOCAL CALLS						
" TRUNKS & T/GRAMS		6 7				
BOOKSTALL						
LAUNDRY						
DRY CLEANING						
RADIO & TV						
SUNDRIES						
PAID OUT						
DAILY TOTAL	6 15 ·	9 3 7	7 1 ·	6 15 ·		
BROUGHT FORWARD		6 15	15 18 7	22 19 7	29 14 7	29 14 7
TOTAL	6 15 ·	15 18 7	22 19 7	29 14 7	29 14 7	29 14 7
CASH						
ALLOWANCES						
CARRIED FORWARD	6 15 ·	15 18 7	22 19 7	29 14 7	29 14 7	29 14 7

1/3/61

ACCOUNTS ARE DUE THE DAY THEY ARE RENDERED

Exhibit "AN" - Document marked "ERH25" annexed to Answer to Interrogatory 31

(3)

AVIS RENT-A-CAR SYSTEM PTY. LTD.

No. 16797

194 WILLIAM STREET, SYDNEY

Telephone: FA 7121

DATE	REC. No.	NAME	BANK	PLACE	CHEQUES	CASH	Private Ledger	Debtor's Ledger
11/10/61	16797	QLD. MINES LIMITED	NSW	SYDNEY	32 13 4			32 13 4

OFFICIAL RECEIPT

Received with thanks

For AVIS RENT-A-CAR SYSTEM PTY. LTD.

Exhibit "AN" - Document marked "ERH26" annexed to Answer to Interrogatory 31

2102.

AUSTRALIAN HEADQUARTERS: 60 RILEY STREET, SYDNEY, AUSTRALIA. FA7121

CONFIRMATION INVOICE

BOX 34
WILLIAM STREET P.O.
SYDNEY

[illegible]
16 O'CONNELL STREET
SYDNEY

ERH 26(b)

Contract No.: 215362

To Hire From: Launceston Motor Vehicle No.: [illegible] Ford Falcon

Dates: 1.2.61 To: 2.2.61 Driver: [illegible] Pulson

360	MILES @	10d	PER MILE	£. 15 : 0 : 0
4	HOURS @	10/-	PER HOUR	2 : 0 : 0
1	DAYS @	55/-	PER DAY	2 : 15 : 0
	WEEKS @		PER WEEK	: :
	DAMAGE COVER FEE	1	Days @ 15/- Per Day Weeks @ Per Week	15 : 0
	SUNDRY CHARGE DETAILS			: :
	GROSS CHARGE			22 : 10 : 0
	LESS Petrol and Oil Purchased by Renter			1 : 0 : 0

NETT CHARGE £ 19 : 10 : 0

PLEASE PAY ON THIS INVOICE—NETT CASH 7 DAYS

Exhibit "AN" - Document marked "ERH26(b)" annexed to Answer to Interrogatory 31

2103.

AUSTRALIAN HEADQUARTERS: 40 RILEY STREET, SYDNEY, AUSTRALIA. FA7171

CONFIRMATION INVOICE

BOX 24
WILLIAM STREET P.O.
SYDNEY

[illegible] LTD,
16 [illegible] STREET
SYDNEY

ERH26(c)

Contract No.: [illegible]

To Hire From: [illegible] Motor Vehicle No.: [illegible]

Dates: [illegible] To: [illegible] Driver: [illegible]

256 MILES @	10d	PER MILE		£ 10 : 13 : 4
HOURS @		PER HOUR		: :
1 DAYS @	[illegible]	PER DAY		3 : 0 : 0
WEEKS @		PER WEEK		: :
DAMAGE COVER FEE	1	Days @ Weeks @	10/- Per Day Per Week	: 10 : 0
SUNDRY CHARGE DETAILS				: :
GROSS CHARGE				£ 14 : 3 : 4
LESS Petrol and Oil Purchased by Renter				1 : 0 : 0

Please return these [illegible] together with Receipt

NETT CHARGE £ 13 : 3 : 4

PLEASE PAY ON THIS INVOICE—NETT CASH 7 DAYS [illegible]

2104. Exhibit "AN" - Document marked "ERH26(c)" annexed to Answer to Interrogatory 31

This is the bundle of documents marked "ERH 27 to ERH 29" referred to in the annexed verified statement in answer t. interrogatories sworn the 28th day of June 1974 at Sydney before me:

A Justice of the Peace

Exhibit "AN" - Document marked "ERH27" annexed to Answer to Interrogatory 31

ERH 27

Room Rate .....
Inc. Tariff .....
Bed & B'fast.....

21. 10. 1959

Room No. 42

Hadley's Hotel

No 5897

34 MURRAY STREET, HOBART

In Account with Mr. PALMER.

Guests' Accounts Rendered Weekly

Breakfast	Lunch	Dinner	Room	Guests	Trays	Laundry and Iron	Cash Paid Out	Cigarettes	Papers	Teas and Suppers	Sundry and Parcels	Wireless	Telephone and Telegrams	Fires and Radiators	Refreshments Bar	Carried Forward			Total	
		16/6	2/6										5			3	-	6		
	9/-	16/6	2/6						1/4				7 5			3	11	-		
									4									4		
																			1	11

Visitors are requested to call early attention to any errors that may appear in their Accounts.

No Receipt Valid unless on our Printed Form

ALCO 607459

Exhibit "AN" - Document marked "ERH27" annexed to Answer to Interrogatory 31

Room Rate	
Tariff	
Bed & B'fast	

.. 2 . 19..

Room No. ..

Hadley's Hotel

№ 12036

34 MURRAY STREET, HOBART

"ERH 28"

In Account with Mrs Ridgeway

Guests' Accounts Rendered Weekly

Breakfast	Lunch	Dinner	Room	Guests	Trays	Laundry and Iron	Cash IOU	Cigarettes	Papers	Teas and Suppers	Sundry and Parcels	Wireless	Telephone and Telegrams	Fires and Radiators	Refreshments Bar	Carried Forward			Total	
			31/-													3	5	-		
									4											
																			3	5

2532

Visitors are requested to call early attention to any errors that may appear in their Account

No Receipt Valid unless on our Printed Form.

Exhibit "AN" - Document marked "ERH28" annexed to Answer to Interrogatory 31

oom Rate ....
nc. Tariff ....
ed & B'fast ....

.... 3 ... 8 ... 19..

Room No. ....
Special

Hadley's Hotel

Nº 12035

34 MURRAY STREET, HOBART

"ERH 29"

In Account with Mr. Hudson

....

Guests' Accounts Rendered Weekly

	Breakfast	Lunch	Dinner	Room	Guests	Trays	Laundry and Iron	Cash IOU	Cigarettes	Papers	Teas and Suppers	Sundry and Parcels	Wireless	Telephone and Telegrams	Fires and Radiators	Refreshments Bar	Carried Forward			Total	
				3/1/-						4							3	-	-		
																			4		
											2922										
																				3	-

Visitors are requested to call early attention to any errors that may appear in their Accounts.

No Receipt Valid unless on our Printed Form.

WALCH 899760

Exhibit "AN" - Document marked "ERH29" annexed to Answer to Interrogatory 31

BUNDLE "ERH 30-32"

Room Rate	
Inc. Tariff	
Bed & B'fast	

Phone 1484

HOTEL MENAI

W. J. Campbell, Proprietor

MENAI STREET

BURNIE

19

Room No. 27

Nº 12057

"ERH 30"

In account with [illegible]

[illegible] O'Connell St [illegible]

GUESTS ACCOUNTS RENDERED WEEKLY

Date	Breakfast	Lunch	Dinner	Room	Trays	Guests	Papers	Teas and Suppers	Laundry and Iron	Telephone	Wine and Spirits	Sundries	Carried Forward			Total		
25		1	1	1						1								
26	1							1/6				9/6	4	0	6			
																4	10	6
																4	0	6

HOTEL MENAI

3288 BURNIE, Mar 8th 1961

RECEIVED from Mr. [illegible]

the sum of Four Pounds

— Shillings Six Pence

For acc

£4/0/6

With Thanks,
W. J. CAMPBELL
Proprietor

Per [illegible]

...rors that may appear in their accounts

This is the bundle of documents marked "ERH 30 to ERH32" referred to in the annexed verified statement in answer to interrogatories sworn the 28th day of June 1974 at Sydney before me:

[signature]

A Justice of the Peace

Exhibit "AN" - Document marked "ERH30" annexed to Answer to Interrogatory 31

With the Compliments
of
Queensland Mines Ltd

March receipt. "ERH 31(a)"

ORIGINAL

Receipt Nº 2025

DEPARTMENT OF MINES,

HOBART ...., 19...

RECEIVED from ....

....

....

the sum of .... pounds

.... shillings and .... pence,

being fees as indicated.

£ 1 10 0

....
Accountant, Department of Mines.

32334-J64289

PARTICULARS	£	s.	d.
Annual Rent to			
Balance of Rent to			
Transfer Fee			
Renewal of Lease			
Sub-Collector's Receipts			
Plans and Publications			
Carried forward			

INVOICE

Exhibit "AN" - Document marked "ERH31(a)" annexed to Answer to Interrogatory 31

INVOICE

№ 387

Hobart, 27 3 '61

QUEENSLAND MINES LTD,
16 O'CONNELL ST,
SYDNEY N.S.W.

28029

Dr. to Department of Mines, Tasmania

Date 61		Particulars	Amount £	s.	d.	Total Amount Payable £	s.	d.
Mar.	27	1 copy Technical Report No 2	-	5	-			
		" " " " No 3	-	5	-			
		" " " " No 4	-	5	-			
		1 copy Mineral Resources No 7 with maps	-					

RECEIVED -5 [illegible] 1961

Exhibit "AN" - Document marked "ERH31(a)" annexed to Answer to Interrogatory 31

INVOICE

No 883

Hobart, 27 . 3 . 61

QUEENSLAND MINES LTD,
16 O'CONNELL ST,
SYDNEY N.S.W.

ERH 31(b)

35E20

Dr. to Department of Mines, Tasmania

DATE 61	PARTICULARS	AMOUNT £	S.	D.	TOTAL AMOUNT PAYABLE £	S.	P.
Mar 17	1 Scamander Mineral Chart.	-	2	6			
	1 Mt. Nicholas Mineral Chart.	-	2	6			
	1 Forest Mineral Chart	-	2	6			
	1 Coles Bay Mineral Chart.	-	2	6			
					-	10	-

DEPARTMENT OF MINES
PAID
RECEIPT No. 2285
31/3/61

DEPT. OF MINES
RECEIVED -5 APR 1961
ANSWERED
REF. NO.

Cheques, postal notes, or money-orders should be made payable to the Director of Mines. If bank notes are forwarded by post, the letter should be registered. Stamps will not be accepted in payment.

2112. Exhibit "AN" - Document marked "ERH31(b) annexed to Answer to Interrogatory 31

Room No. .... 19 ....

Received from ....

the sum of .... pounds,

.... shillings, ... pence,

by ....

Federal Hotels

ACROSS THE NATION

• IN MELBOURNE HOTEL FEDERAL MENZIES SAVOY PLAZA • IN SYDNEY USHERS HAMPTON COURT LTD. • IN HOBART WREST POINT

...POINT

A Nº 25096

Current A/c.			Ledger			Deposits			Sundries			Exchange	

2113. Exhibit "AN" - Document marked "ERH32" annexed to Answer to Interrogatory 31

Q m h

WREST POINT RIVIERA HOTEL SANDY BAY, HOBART, TASMANIA.

TELEPHONE 5-1021 CABLES 'WREST POINT'

"ERH 32"

Mrs. Hudson ROOM No. 308

DATE OF ARRIVAL 21·3·61	21		
APARTMENTS RATE	1		
DINING ROOM BREAKFAST			
" LUNCH		11	6
" DINNER		17	6
" BEVERAGES			
ROOM SERVICE MORNING TEA BREAKFAST			
"			
" BEVERAGES			
LOUNGE			
" BEVERAGES			
BANQUETS CATERING			
" BEVERAGES			
OTHER CHARGES CATERING			
" BEVERAGES			
TELEPHONE LOCAL CALLS			0
" TRUNKS & T/GRAMS			
BOOKSTALL			
LAUNDRY			
DRY CLEANING			
RADIO & TV			
SUNDRIES			
PAID OUT			
DAILY TOTAL	5	9	0
BROUGHT FORWARD			
TOTAL	5	9	0
CASH			
ALLOWANCES			
CARRIED FORWARD	5	9	0

2114. Exhibit "AN" - Document marked "ERH32" annexed to Answer to Interrogatory 31

Serving the Iron Ore, Iron and Steel Industries

JACK ROBERT MILLER
3087 LEEDS ROAD
COLUMBUS, OHIO 43221

PRELIMINARY MEMORANDUM REPORT

to

INDUSTRIAL AND MINING INVESTIGATIONS PTY. LTD.

on

COAL-BASED DIRECT-REDUCTION OPERATIONS

IN TASMANIA

WITH IRON ORES OF THE SAVAGE RIVER-NORTHERN SECTION DEPOSITS

by

Jack Robert Miller
Iron & Steel Industries Consultant
Columbus, Ohio

20 June, 1974

SERVING THE IRON ORE, IRON AND STEEL INDUSTRIES
JACK ROBERT MILLER
3087 LEEDS ROAD
COLUMBUS, OHIO 43221

20 June, 1974

Mr. E. Roy Hudson
Managing Director
Industrial & Mining Investigations Pty. Ltd.
Suite 3709, Level 37
Australia Square
Sydney, N.S.W. 2000
Australia

Subject: Coal-Based Operations in Tasmania for the Direct Reduction of the Iron Ores of Savage River-Northern Section

Dear Mr. Hudson:

On 16 October 1973, we were favored by your authorization, dated 6 days earlier, to proceed with an evaluation of certain aspects of direct-reduction operations in Tasmania. We were directed to undertake inquiries into:

(1) the technical and economic viability of the Krupp Direct-Reduction process and, in particular, the use of that process to produce sponge iron from iron ores of the Northern Section of the Savage River deposits; and

(2) the possible markets for approximately one million tons of sponge iron annually, with emphasis focused on the indicated demands of Europe and Japan.

By this letter we are pleased to transmit to you our findings concerning these two subjects.

The analysis is limited specifically to the Krupp Direct-Reduction process, as stipulated by you. We have, however, presented the subject in the more general context of the direct reduction of iron ore with solid carbon reductants. As explained during our meetings in Sydney from 11 to 21 February 1974, this will provide you with a record of the latest status of the two main coal-based direct-reduction practices, each of which is now being tested in small but fully commercial operations. In addition, details of the Armco gaseous reduction process are described, after a 2-day inspection tour of that facility in Houston, made in May at your request.

As a starting point, the studies examined the feasibility of a plant at Port Latta producing 2.5 million tons of oxide pellets a year for export. The estimated capital cost of the required installations, including mining, beneficiation and agglomerating units, pipeline, and shiploading facilities, equals A$128 million for a project initiated in mid-1975 and completed approximately 4 years later. For an FOB selling price of 25¢A per metric ton unit of pellets, the average rate of return on a 40% equity investment is calculated to be 18.2%.

Direct-reduction operations for 3 assumed conditions at Port Latta have been reviewed. In general, the conclusion reached is, that for the next 10 years at least, any direct-reduction facility that is technically reliable will be economically viable.

The report also notes that, as of June 1974, "there are no examples of either Krupp or SL/RN direct-reduction experiences on which to base an unequivocal positive evaluation of the technical reliability of the Krupp Direct-Reduction process". But, that statement is followed by the advice that " . . . this negative judgment be reviewed within the next 4 to 6 months, in the strong expectation that developments during that period will warrant a change to a more positive recommendation".

Savage River concentrates from Central Section ores have been tested and were found reducible in a rotary kiln when the reactivity of the coal used was good. Similar tests should be made on the Northern Section ore on a bench scale, at least, followed later by pilot plant trials.

One of the 3 assumed Port Latta projects, an "independent" one million ton per year sponge iron facility based on coal reductant, is found to be unrealistic. The second conception of a large combined operation, producing one million tons of sponge iron and 1.4 million tons of oxide pellets for export annually, is estimated to require a total capital outlay of A$172.5 million. The average rate of return on an equity investment of A$69 million is equal to 25.5%. The third case, a small plant with minimal facilities only, is intended to produce 150,000 tons of sponge iron from oxide pellets purchased from outside sources. The capital cost is estimated at approximately A$9 million and the rate of return nearly 23% on a 40% equity involvement.

The return-on-investment evaluations reflect substantial increases over past price schedules for nearly all iron-bearing metallics, in crude or finished form. Of particular interest to this study have

been the prices estimated for oxide pellets, steel scrap, and directly-reduced iron ore. Forecasts for these materials, for the near- and mid-term future, are: 25¢A (37.5¢US) per metric ton unit; A$52.33 (US$78.50) per metric ton, and A$48 (US$72) per ton of 92% metallized product. The price for scrap is foreseen as varying over a range of from A$48 (US$72) to A$56.67 (US$85).

The world market for directly-reduced iron during the next 10 years is expected to be limited only by the industry's inability to produce the tonnages desired throughout the world. Demand for sponge iron is certain to increase under pressures for steel which are expected to bring global raw steel production levels to 735 million tons in 1975, 915 million tons in 1980, and 1025 million tons in 1985. Corresponding to those levels, worldwide direct-reduction outputs of 11 million tons, 64 million and 124 million tons, respectively, are anticipated.

The study makes note of a growing role of several gas-rich countries of the Middle East in steel industry operations, including the production of directly-reduced materials. This is expected to establish an effective competitive barrier that could limit Tasmanian opportunities for sponge iron sales to Europe and eastern United States. The markets that are considered most easily accessible to a direct-reduction product plant in Tasmania are in Japan and western U. S. steelmaking areas. However, the problem of competition is believed to be academic until about 1983, at least.

On overall market considerations, the report concludes that only nominal amounts of directly-reduced iron are likely to be available for merchant sale for as much as 5 years or more beyond 1985 in the growing billion-ton global steel industry that is anticipated. There is an expectation throughout the industry, which this study fully confirms, that the demand for directly-reduced iron ore during that period will be substantial and steady.

We acknowledge with much appreciation the cooperation of yourself, Mr. Salier and Mr. Madden, as well as the advice of the many iron and steel industry associates whose ideas have been of immeasurable value during the course of this study. The names of some of these experts are listed in Annex I of this report.

Yours very sincerely,

Jack Robert Miller
Iron & Steel Industries Consultant

JRM:sm

Exhibit 69 - J.R. Miller's
2118. Report - 20th June, 1974

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30931
MALLSON AA30931

SENT 2.34PM 1/7/74

FHP AA21885

2 JULY 1

ATTENTION: MR. HARRIS

WE ARE INSTRUCTED STANHILL CONSOLIDATED LIMITED WAS WOUND UP IN THE MID-1960'S. PLEASE URGENTLY ARRANGE SEARCH OF RECORDS OF COMPANIES OFFICE AND SUPREME COURT TO ASCERTAIN

1. THE DATE OF THE WINDING UP ORDER AND THE NAMES OF THE LIQUIDATORS.

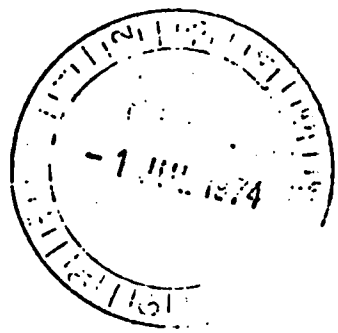
2. WHETHER DISSOLVED AND IF SO, THE DATE AND WHETHER THE COURT ORDERED DESTRUCTION OF THE COMPANY'S RECORDS.

PLEASE TELEX REPLY.

REGARDS,

BROADLEY
(FREEHILLS)
+
MALLSON AA30931

Exhibit 143 - Telex from Freehill, Hollingdale & Page, 1st July, 1974



FHP AA21885
MALLSON AA30931

TLX 877 1ST JULY 1974

FOR BROADLEY

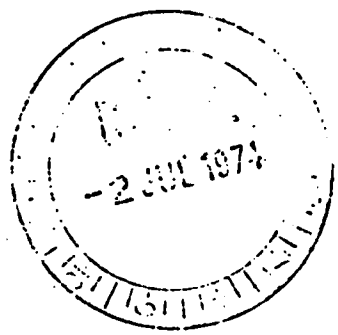
RE STANHILL CONSOLIDATED LTD.

HAVE INSTITUTED SEARCHES AS PER YOUR TELEX BUT RESULTS WILL NOT BE AVAILABLE BEFORE TOMORROW.

REGARDS,
HARRIS,
MALLESONS.

FIN
FHP AA21885

21.20. Exhibit 143 - Telex from Mallesons, 1st July, 1974



FHP AA21885
MALLSON AA30931

TLX 883 2ND JULY 1974

FOR BROADLEY

RE STANHILL CONSOLIDATED LTD.

ATTEMPTS TO LOCATE FILE AT SUPREME COURT UNSUCCESSFUL.
IF AVAILABLE, PETITION NUMBER WOULD ASSIST.

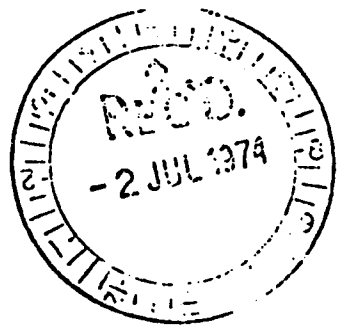
SEARCH AT CORPORATE AFFAIRS OFFICE STILL IN PROGRESS.

REGARDS,
HARRIS,
MALLESONS.

FIN
FHP AA21885

Exhibit 143 - Telex from Mallesons,

 2nd July, 1974



FHP AA21835
MALLSON AA30931

TLX 885 2ND JULY 1

FOR BROADLEY

RE STANHILL CONSOLIDATED LTD.

THE FOLLOWING INFORMATION HAS BEEN EXTRACTED FROM RECORDS HELD AT CORPORATE AFFAIRS OFFICE :

1. EDWIN SAMUEL PARKINSON APPOINTED LIQUIDATOR BY COURT ON APRIL 1, 1965 AND COMPANY ORDERED TO BE WOUND UP.

2. E.S. PARKINSON RELEASED AND ROBERT FOSTER HUGHES APPOINTED AS LIQUIDATOR ON NOVEMBER 16, 1965.

3. COMPANY STRUCK OUT ON DECEMBER 11, 1972 AND DISSOLVED ON DECEMBER 20, 1972.

THE RECORDS RELATING TO THE COMPANY HAVE NOT BEEN DESTROYED BUT ARE IN THE CORPORATE AFFAIRS OFFICE ARCHIVES WHICH (DUE TO PROPOSED REMOVAL OF OFFICE) ARE SAID TO BE INACCESSIBLE. PRESUMABLY, REPRESENTATIONS TO OBTAIN ACCESS COULD BE MADE IF NECESSARY.

REGARDS,
HARRIS,
MALLESONS.

FIN
FHP AA21885

cc Mr Hudson
Mr. Simos

Exhibit 143 - Telex from Mallesons,
2122. 2nd July, 1974

MALLESONS
SOLICITORS & NOTARIES

FRANK STEWART DETHRIDGE
ROSS MORTON MACDONALD
MAXWELL RUPERT HAM
PETER CAMPBELL TRUMBLE
COLIN CAMPBELL TRUMBLE
WILLIAM GERSON SMITH
ROY ERNEST RICKER
BERNARD JAMES WALTER
CHARLES KELLOW MCMILLAN
DAVID ANTHONY WALSH
GRAHAM JOHN FREDERICK DETHRIDGE
RICHARD EDWARD NELSON
IAN ANDREW MURRAY
MATTHEW JOHN WALSH
THOMAS EDWARD BOSTOCK
ANTHONY PETER JOHN KELLY

ASSOCIATES

ALFRED GENE PREECE
DONALD LATIMER BROOKER
JOHN DAVID RAYFORD WELLS
JAMES WILLIAM ANTONY HIGGINS
JOHN ROBERT EVANS
GRAEME JOHN HARRIS
RICHARD ANDREW LADBURY
FRANK MORTIN CALLAWAY
ROBIN DENIS VAGUE
ROBERT HENRY TOMLINSON

CONSULTANTS:

ROY JAMES MCARTHUR, C.B.E.
RICHARD FRANCIS MAPLESTONE CLARK

Jul 9 3 38 P74

ST. JAMES BUILDING,
121 WILLIAM STREET,
MELBOURNE, VICTORIA 3000
AUSTRALIA

TELEPHONE: 62 0761

AREA CODE . 03

TELEGRAPHIC & CABLE ADDRESS:
MALLESONS, MELBOURNE
TELEX 30931

YOUR REF.:
OUR REF.: GJH:TEB.

July 4, 1974.

Messrs. Freehill Hollingdale & Page,
Solicitors,
60 Martin Place,
SYDNEY, N.S.W. 2000.

Attention: Mr. Broadley

Dear Sirs,

Stanhill Consolidated Ltd.

We refer to our various telex communications regarding the above matter.

We think that the information that you require is, in general terms, set out in our telex number 885 of July 2, 1974. The information contained in that telex was extracted from the Company's card at the Corporate Affairs Office.

We are not certain whether an order to destroy the documents relating to the Company has ever been made, but in actual fact it appears that all the relevant documents still exist. Access is not readily available to the archives of the Corporate Affairs Office, although we think that if appropriate representations were made, it may be possible to inspect the file.

Although the court file relating to the winding up of the Company has not been located, we expect that a more thorough search based upon information that could probably be obtained from the archives of the Corporate Affairs Office would locate it. Other files (for example relating to the change of liquidator) are still in existence and it is for this reason that we think that the original file also exists.

At this point, we enquire whether you require any further information and whether it is worth conducting the more extensive searches that appear to be required. We should be pleased to receive any further instructions that you may have for us in this connection in due course.

Yours faithfully,

Mallesons.

Exhibit 143 - Letter
from Mallesons,
2123. 4th July, 1974

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MALLSON AA30931

FHP AA21885

SENT: 2.28PM 5/7/74

40 JULY 5

FOR: HARRIS

REF: TELEX 885 2/7 RE: STANHILL CONSOLIDATED LTD.

PLEASE MAKE REPRESENTATIONS TO CORPORATE AFFAIRS OFFICE ARCHIVES FOR ACCESS TO STANHILL CONSOLIDATED LIMITED'S RECORDS FROM 1958 TO 1965 FOR PERUSAL IN PREPARATION FOR SUPREME COURT ACTION FOR HEARING IN OCTOBER.
IF MADE AVAILABLE CLIENTS' REPRESENTATIVES AND OURSELVES WILL ATTEND TO PERUSE.

REGARDS,

BROADLEY
(FREEHILLS)
✠
MALLSON AA30931

Exhibit 143 - Telex from Freehill Hollingdale & Page, 5th July, 1974

MR-KB

July 10, 1974

Messrs. Mallesons,
Solicitors,
121 William Street,
MELBOURNE Vic. 3000

Attention Mr. Harris

Dear Sirs,

Stanhill Consolidated Limited

Thank you for your July 4, 1974 letter.

We would be obliged if appropriate representations were made to the Corporate Affairs Office for inspection of its files relating to Stanhill Consolidated Limited. When the files are available Mr. Salier representing our clients, will attend to inspect them following which we may request further searches to be made.

The background of the enquiry is that we act for Mr. E. R. Hudson, Savage Iron Investments Pty. Limited and Industrial & Mining Investigations Pty. Limited who are defendants in an action brought by Queensland Mines Limited relating to alleged breach of director's fiduciary duty during the period 1959-62. Stanhill Consolidated Limited was effectively the parent company of Queensland Mines Limited at that time and it may be that its records, correspondence, minutes, ledgers and accounts, contain information relevant to the issues to be tried by the Court. The case is for hearing by Wooten J. in the Equity Division of the Supreme Court of New South Wales and the case is fixed for the period October 8-31, 1974.

There is a possibility that the plaintiff could apply for an adjournment of the hearing if the records cannot be located and as our clients are most anxious for the hearing to take place in October, we would be most grateful if the records could be traced as soon as possible.

Yours faithfully,
FREEHILL, HOLLINGDALE & PAGE

Per:

Exhibit 143 - Letter
from Freehill Hollingdale
& Page, 10th July, 1974

MALLESONS
SOLICITORS & NOTARIES

FRANK STEWART BETHRIDGE
JOSS MORTON MACDONALD
AXWELL RUPERT HAM
PETER CAMPBELL TRUMBLE
COLIN CAMPBELL TRUMBLE
WILLIAM GIBSON SMITH
ROY ERNEST RICKER
BERNARD JAMES WALTER
CHARLES KELLOW MCMILLAN
DAVID ANTHONY WALSH
GRAHAM JOHN FREDERICK BETHRIDGE
RICHARD EDWARD NELSON
IAN ANDREW MURRAY
MATTHEW JOHN WALSH
THOMAS EDWARD BOSTOCK
ANTHONY PETER JOHN KELLY

ASSOCIATES:
ALFRED GENE PREECE
DONALD LATIMER BROOKER
JOHN DAVID BAYFORD WELLS
JAMES WILLIAM ANTONY HIGGINS
JOHN ROBERT EVANS
GRAEME JOHN HARRIS
RICHARD ANDREW LADBURY
FRANK HORTIN CALLAWAY
ROBIN DENIS VAGUE
ROBERT HENRY TOMLINSON

CONSULTANTS:
ROY JAMES MCARTHUR, C.B.E.
RICHARD FRANCIS MAPLESTONE CLARK

ST. JAMES BUILDING,
121 WILLIAM STREET,
MELBOURNE, VICTORIA 3000
AUSTRALIA

TELEPHONE: 62 0761

AREA CODE 03

TELEGRAPHIC & CABLE ADDRESS:
MALLESONS, MELBOURNE
TELEX 30931

JUL 24 11 19 074

YOUR REF.: MR-KB.
OUR REF.: GJH:TEB.

July 19, 1974.

Messrs. Freehill Hollingdale & Page,
Solicitors,
60 Martin Place,
SYDNEY, N.S.W. 2000.

Dear Sirs,

Stanhill Consolidated Limited

We refer to your letter of July 10, 1974 and to our various telephone conversations in this matter.

We spoke to Mr. Salier on several occasions whilst he was in Melbourne on July 17 and 18, 1974, and we understand that he he made various searches at the Corporate Affairs Office and at the Offices of Messrs. Edwin V. Nixon & Partners (Mr. D. George of that firm having been, we understand, the receiver of Stanhill Consolidated Limited). We understand that he also spoke to Mr. Russell of Messrs. Coopers & Lybrand (of which firm the Liquidator is a Partner).

No doubt Mr. Salier will report to you in relation to the foregoing searches and enquiries.

However, Mr. Salier informed us that he believed that certain of the Minute Books and books of account of the company were at one time in the hands of the Crown in relation to the prosecutions of Korman and Strange. Accordingly, we spoke to Mr. Yeaman of the Crown Law Department who, after making enquiries of the police concerned (Detective Inspectors E. Mudge and M. Bruce) informed us that neither the Crown Law Department nor the Police Department still retained any documents of the nature sought. He informed us that the Police believe that the relevant material had been handed back to the receiver.

.../2

Exhibit 143 - Letter
from Mallesons,
19th July, 1974

Clearly, this position is not entirely satisfactory but, of course, part of the problem is that there are a number of parties involved and some time has elapsed. The remaining avenue seems to be to make full representations to the Police Department, as this appears to be the avenue most likely to yield results at this stage. This we have done, and we enclose a copy of our letter for your information and reference.

Further to our telephone conversation of July 18, 1974, we should be obliged if you could obtain from Mr. Salier the petition number relating to the winding up of the company, whereupon we shall be in a position to renew our investigations at the Supreme Court.

Yours faithfully,

Mallesons

Exhibit 143 - Letter from Mallesons, 19th July, 1974

2127.

[M]ALLESONS

[S]OLICITORS & NOTARIES

ST. JAMES BUILDING,
121 WILLIAM STREET,
MELBOURNE, VICTORIA 3000
AUSTRALIA

TELEPHONE: 62 0701

AREA CODE . 03

TELEGRAPHIC & CABLE ADDRESS:
MALLESONS, MELBOURNE
TELEX 30931

YOUR REF.:
OUR REF.: GJH:TEB.

July 19, 1974.

The Officer in Charge,
Company Fraud Squad,
Police Department,
Russell Street,
MELBOURNE, VIC. 3000.

Attention: Detective Inspector E. Mudge.

Dear Sir,

Stanhill Consolidated Limited

We are acting as Melbourne Agents for Messrs. Freehill Hollingdale & Page, Solicitors, Sydney. Messrs. Freehill Hollingdale & Page are acting for Mr. E.R. Hudson, Savage Iron Investments Pty. Ltd. and Industrial and Mining Investigations Pty. Ltd., who are defendants in an action brought by Queensland Mines Limited relating to alleged breach of Director's fiduciary duty during the period 1959-62. Stanhill Consolidated Limited was effectively the parent company of Queensland Mines Limited at that time and it may be that its records, minutes and accounts contain information relevant to the issues to be tried by the Equity Division of the New South Wales Supreme Court.

Investigations and searches have already been conducted at the Offices of the former receiver, but his records are incomplete. It occurs to us that some of the relevant records may still be in the possession of the Police Authorities as a result of the prosecutions of Korman and Strange.

We are aware that a preliminary enquiry as to this matter has already been made to you and that the outcome was negative. However, as a result of the fact that the other searches that have been made have also proved negative, we should be grateful if the position could be checked.

Please do not hesitate to contact Mr. G.J. Harris of this Office if necessary.

Yours faithfully,
MALLESONS

Exhibit 143 - Letter
from Mallesons,
19th July, 1974

LLESONS
SOLICITORS & NOTARIES

RANK STEWART DETHRIDGE
ROSS MORTON MACDONALD
MAXWELL POPLINT HAM
PETER CAMPBELL THOMBLE
COLIN CAMPBELL THOMBLE
WILLIAM GORDON SMITH
ROY ERNEST RICKER
BERNARD JAMES WALTER
CHARLES KELLOW MCMILLAN
DAVID ANTHONY WALSH
GRAHAM JOHN FREDERICK DETHRIDGE
RICHARD EDWARD NELSON
IAN ANDREW MURRAY
MATTHEW JOHN WALSH
THOMAS EDWARD HOSTOCK
ANTHONY PETER JOHN KELLY
DONALD LATIMER UHOCKER
JOHN DAVID RAYFORD WELLS
JAMES WILLIAM ANTONY HIGGINS
RICHARD ANDREW LADBURY
ASSOCIATES:
ALFRED GENE PREECE
JOHN ROBERT EVANS
GRAEME JOHN HARRIS
FRANK HORTIN CALLAWAY
ROBIN DENIS VAGUE
ROBERT HENRY TOMLINSON
DAVID BRUCE BRETHERTON
CONSULTANTS:
ROY JAMES MCARTHUR, C.B.E.
RICHARD FRANCIS MAPLESTONE CLARK

JUL 30 3 52 P 74

ST. JAMES BUILDING,
121 WILLIAM STREET,
MELBOURNE, VICTORIA 3000
AUSTRALIA

TELEPHONE: 62 0761

AREA CODE 03

TELEGRAPHIC & CABLE ADDRESS:
MALLESONS, MELBOURNE
TELEX 30931

YOUR REF.: MR-KB.
OUR REF.: GJH:TEB.

July 26, 1974.

Messrs. Freehill Hollingdale & Page,
Solicitors,
60 Martin Place,
SYDNEY, N.S.W. 2000.

Dear Sirs,

Stanhill Consolidated Limited

We refer to our letter of July 19, 1974.

Inspector Mudge rang us on July 25, 1974 in reply to our letter of July 19, 1974, a copy of which is in your possession.

He informed us that the position has been checked, and that the Police are not holding any documents in this matter. He informed us that this was in accordance with the usual procedure, which is to return all documents after the expiration of the time limits for appeals. His impression was that in this case the documents would have been returned to the receiver.

We enquire whether you are in a position to let us know the Petition Number relating to the winding up of the Company, as this would greatly facilitate our renewed investigations at the Supreme Court.

Yours faithfully,

Exhibit 143 - Letter
from Mallesons,
2129. 26th July, 1974

MR-KB

July 31, 1974

Messrs. Mallesons,
Solicitors,
121 William Street,
MELBOURNE 3000.

Attention Mr. Harris
Your ref: CJH:TEB

Dear Sirs,

Stanhill Consolidated Limited

Thank you for your July 19 and 26, 1974 letters which we have referred to our client. We have checked with Mr. Salier but he did not obtain a Petition Number from any of the documents seen by him in his searches in Melbourne. We would be obliged if you could follow up any other possibilities which occur to you in an endeavour to obtain the Court records although we appreciate that without the petition number it is unlikely that there will be any further progress.

Yours faithfully,
FREEHILL, HOLLINGDALE & PAGE

Per:

Exhibit 143 - Letter from Freehill Hollingdale & Page, 31st July, 1974

MALLESONS
SOLICITORS & NOTARIES

FRANK STEWART DETHRIDGE
ROSS MORTON MACDONALD
MAXWELL ROBERT HAM
PETER CAMPBELL THUMBLE
COLIN CAMPBELL THUMBLE
WILLIAM GEORGE SMITH
ROY ERNEST RICKER
BERNARD JAMES WALTER
CHARLES KELLOW MCMILLAN
DAVID ANTHONY WALSH
GRAHAM JOHN FREDERICK DETHRIDGE
RICHARD EDWARD NELSON
IAN ANDREW MURRAY
MATTHEW JOHN WALSH
THOMAS EDWARD BOSTOCK
ANTHONY PETER JOHN KELLY
DONALD LATIMER BROOKER
JOHN DAVID BAYFORD WELLS
JAMES WILLIAM ANTONY HIGGINS
RICHARD ANDREW LADBURY
ASSOCIATES:
ALFRED GENE PREECE
JOHN ROBERT EVANS
GRAEME JOHN HARRIS
FRANK MORTIN CALLAWAY
ROBIN DENIS VAGUE
ROBERT HENRY TOMLINSON
DAVID BRUCE BRETHERTON
CONSULTANTS:
ROY JAMES MCARTHUR, C.B.E.
RICHARD FRANCIS MAPLESTONE CLARK

AUG 13 11 45 A74

ST. JAMES BUILDING,
121 WILLIAM STREET,
MELBOURNE, VICTORIA 3000
AUSTRALIA

TELEPHONE: 62 0761

AREA CODE . 03

TELEGRAPHIC & CABLE ADDRESS:
MALLESONS, MELBOURNE
TELEX 30931

YOUR REF.:
OUR REF.: GJH:TEB

7th August, 1974.

Messrs. Freehill Hollingdale & Page,
Solicitors,
60 Martin Place,
SYDNEY. N.S.W. 2000.

Dear Sirs,

Stanhill Consolidated Limited

We refer to your letter of July 31st, 1974 and to previous correspondence in this matter.

As the result of further investigations and enquiries, we have ascertained that there were two petitions presented to wind up Stanhill Consolidated Limited, and they were Supreme Court proceedings Co. 6935 and Coy. 6936 in 1964.

The relevant files are still available to be searched in the archives of the Supreme Court, and we have had an opportunity to examine both files very briefly. Although we were not in a position to read them thoroughly, both files appeared to us to be confined to matters directly concerned with the liquidation of the Company.

In case it is of any assistance, we enclose a photocopy of the original petition in matter Coy. 6935, which was presented by T & G Nominees Pty. Ltd. The petition in matter Coy. 6936 was presented by Stanhill Consolidated Finance Ltd.

Please let us know if you require any further information or assistance in this matter.

Yours faithfully,

Mallesons

Exhibit 143 - Letter from Mallesons, 7th August, 1974

MALLESONS
SOLICITORS & NOTARIES

FRANK STEWART DETHRIDGE
IAN MORTON MACDONALD
ROWELL RUPERT NAM
PETER CAMPBELL TRUMBLE
COLIN CAMPBELL TRUMBLE
WILLIAM GORDON SMITH
ROY ERNEST RICKER
BERNARD JAMES WALTER
CHARLES KELLOW MCMILLAN
DAVID ANTHONY WALSH
GRAHAM JOHN FREDERICK DETHRIDGE
RICHARD EDWARD NELSON
IAN ANDREW MURRAY
MATTHEW JOHN WALSH
THOMAS EDWARD BOSTOCK
ANTHONY PETER JOHN KELLY
DONALD LATIMER BROOKER
JOHN DAVID BAYFORD WELLS
JAMES WILLIAM ANTONY HIGGINS
RICHARD ANDREW LACBURY
ASSOCIATES:
ALFRED GENE PREECE
JOHN ROBERT EVANS
GRAEME JOHN HARRIS
FRANK MORTIN CALLAWAY
ROBIN DENIS VAGUE
ROBERT HENRY TOMLINSON
DAVID BRUCE BRETHERTON
CONSULTANTS:
ROY JAMES MCARTHUR, C.B.E.
RICHARD FRANCIS MAPLESTONE CLARK

ST. JAMES BUILDING,
121 WILLIAM STREET,
MELBOURNE, VICTORIA 3000
AUSTRALIA

TELEPHONE: 62 0761

AREA CODE 03

TELEGRAPHIC & CABLE ADDRESS:
MALLESONS, MELBOURNE
TELEX 30931

YOUR REF.:
OUR REF.: GJH:TEB.

August 16, 1974.

Messrs. Freehill Hollingdale & Page,
Solicitors,
60 Martin Place,
SYDNEY, N.S.W. 2000.

Attention: Mr. Broadley

Dear Sirs,

Stanhill Consolidated Limited

We refer to previous correspondence in this matter. As this matter appears to be now complete in that we have exhausted all searches, we enclose a note of our costs and disbursements.

May we take this opportunity of thanking you for your instructions in this matter.

Yours faithfully,

Mallesons

Encl.

Exhibit 143 - Letter from Mallesons, 16th August, 1974

KRB/CdeN

13th September, 1974

Messrs Allen, Allen & Hemsley,
Solicitors,
55 Hunter Street,
SYDNEY. N.S.W. 2000

Dear Sirs,

Hudson & Ors ats. Queensland Mines Limited

Enquiries on behalf of our clients in this matter as to the whereabouts of Mr. Stanley Korman have resulted in the following information being obtained :-

1. An address for Mr. S. Korman was Regency House, 233 North Central, Phoenix, Arizona 85004, another address being Anzwool Incorporated, 2323 North Central, Phoenix, Arizona.

2. Another address for Mr. Korman was 42 Remez Street, Tel Aviv, Israel.

3. In the first half of 1974 Mr. Korman was travelling on the Continent but his address was unknown.

4. An American attorney who at one time acted for Mr. Korman was Mr. Robert J. Eliasberg, 400 Madison Avenue, New York 10017. Later information was to the effect that Mr. Eliasberg no longer acted as attorney for Mr. Korman.

5. A brother of Mr. S. Korman, namely Mr. H. Korman lives in Auckland, New Zealand and his address can be found in the Auckland, New Zealand telephone book.

6. A son of Mr. S. Korman, namely Mr. L. Korman lives in Melbourne and his address can be obtained from the Melbourne telephone book.

Exhibit 143 - Letter from Freehill Hollingdale & Page, 13th September, 1974

Messrs Allen, Allen & Hemsley

7. A son of Mr. S. Korman, namely Mr. D. Korman (address not known) has or had a telephone number being Phoenix, Arizona 2646375.

Yours faithfully,
FREEHILL, HOLLINGDALE & PAGE

Exhibit 143 - Letter from Freehill Hollingdale & Page, 13th September, 1974

Messrs Allen, Allen & Hemsley,
Solicitors,
55 Hunter Street,
SYDNEY. N.S.W. 2000

KRB/CdeN

13th September, 1974

Dear Sirs,

Hudson & Ors ats. Queensland Mines Limited

We set out hereunder details relating to the whereabouts of various records of the company Stanhill Consolidated Limited :-

1. Corporate Affairs Commission, Melbourne

The Corporate Affairs Commission, Melbourne has three files relating to Stanhill Consolidated being as follows :-

(i) File No. 33808 containing the usual statutory returns relating to companies etc.

(ii) File No. D.9715 containing various notices etc. relating to the receivership of Stanhill Consolidated Limited.

(iii) File No. D.6517 also containing various notices etc. relating to the receivership of Stanhill Consolidated Limited.

There seem also to be certain documents relating to the liquidation of Stanhill Consolidated Limited in the above files.

Our representative was informed by a Mr. Elliott of the Corporate Affairs Commission, Melbourne that the above three files were the whole of the records held by the Corporate Affairs Commission, Melbourne in relation to Stanhill Consolidated Limited.

2. Liquidation

On 1st April, 1965 a liquidator of Stanhill Consolidated Limited was appointed by the Supreme Court of Victoria, the liquidator being Edward Samuel Parkinson of 343 Little Collins Street, Melbourne. On 16th November, 1965 Edward Samuel Parkinson was replaced as liquidator by Robert Foster Hughes of Coopers & Lybrand, Chartered Accountants, 461 Bourke Street, Melbourne. The company Stanhill Consolidated Limited was dissolved on 20th December, 1972.

Our representative spoke with a Mr. Russell in the office of Coopers & Lybrand, Mr. Russell being the person said to have been concerned with the liquidation in relation to Stanhill Consolidated Limited. Mr. Russell informed our representative that the liquidator had no books or records of Stanhill Consolidated Limited.

Messrs Allen, Allen & Hemsley

3. Receivership

On 13th December, 1962 Messrs A.W. Ogilvy and P.D. George of Messrs Edwin V. Nixon & Partners, 440 Collins Street, Melbourne, were appointed by the Executors & Trustee Agency Co. Limited to be receivers of Stanhill Consolidated Limited.

On 6th August, 1969 Mr. P.D. George became the sole receiver of Stanhill Consolidated Limited on behalf of the State Superannuation Board of N.S.W.

Our representative spoke to Mr. George who in turn referred him to a member of his staff namely Mr. Paynter. Mr. Paynter informed our representative that there was held in his office certain boxes of records relating to Stanhill Consolidated Limited. There appeared to be 32 large boxes of such records, 24 being numbered and indexed and apparently containing, from a perusal of the index, share and debenture records. In addition there were certain other records some in smaller boxes.

As appears later in this letter Senior Detective Mudge has stated that he believed that certain books of account relating to Stanhill Consolidated which had been seized by the police had been returned to the receiver. Mr. Paynter stated however, that he was unaware of the whereabouts of any of the books of account of Stanhill Consolidated Limited. Mr. Paynter also stated that he had within the previous 12 months made a search for books of account at the request of the Taxation Department but had been unable to find any.

Another of our representatives was told by Mr. Yeaman of the Crown Law Office, Melbourne that Senior Detective Mudge believed that certain books and records of Stanhill Consolidated Limited which had been seized by the police had been returned to the receiver and were no longer in the possession of the police.

4. The Victorian Supreme Court File

Our representative has ascertained that there were two petitions presented to wind up Stanhill Consolidated Limited being Supreme Court proceedings Coy. 6935 and Coy. 6936 in 1964. We are informed that the relevant files are still available to be searched in the archives of the Supreme Court and that both files appear to be confined to matters directly concerned with the liquidation proceedings in respect of the company. The original petition in matter Coy. 6935 was presented by T. & G. Nominees Pty. Limited. The petition in matter Coy. 6936 was presented by Stanhill Consolidated Finance Limited.

Yours faithfully,
FREEHILL, HOLLINGDALE & PAGE

per:

2136.

Exhibit 143 - Letter from Freehill Hollingdale & Page, 13th September, 1974

E. R. HUDSON
INDUSTRIAL AND MINING INVESTIGATIONS PTY LIMITED
SAVAGE IRON INVESTMENTS PTY LIMITED

TASMANIAN IRON ORE EXPENDITURE

$	Period Ended 31.8.62	Period Ended 30.6.63	Year Ended 30.6.64	30.6.65	30.6.66	30.6.67	30.6.68	30.6.69	30.6.70	30.6.71	30.6.72	30.6.73	30.6.74	TOTAL
cence Fees	514	105	209	209	209	314	419	419	209	613	3001	3493	4687	14401
illing, Access	79150	8710	37446	20723	13113	41138	68234	73415	32217	22987	26151	10207	43066	476557
ndry Exploration	21464	1867	19990	10203	14689	16745	13498	13787	15912	25697	11421	10484	13643	139400
av.& Entertainmt	17130	6314	24014	9846	3012	12619	7724	2277	912	890	387	700	764	86589
terest	2042	5622	6241	4437	3041	3070	4242	14485	3344	688	142	82	798	48234
ndry Administra[n]	3220	3691	2799	2922	5621	6353	17214	19419	17551	24990	25632	23326	19584	172322
asibility Studies							46324	39150			45000		13413	143887
TOTAL	123520	26309	90699	48340	39685	80239	157655	162952	70145	75865	111734	48292	95955	1131390
ULATIVE		149829	240528	288868	328553	408792	566447	729399	799544	875409	987143	1035435	1131390	1131390

2137.

Exhibit 25 - Summary of Expenses re Savage River drilling & assays

E.J.S.
.8.1974

Note 1. Reimbursement of $168,850 of the above expenditure was made by Pickands Mather & Co. International under the terms of the Option Agreement dated 20th June 1963 and such expenditure was taken into account when Pickands Mather did not exercise the Option over the area on which the monies were spent.

2. Expenditure is continuing subsequent to 30th June 1974.

3. No allowance for value of services by Mr. E.R. Hudson.

SAVAGE RIVER IRON ORE DEPOSIT

ASSAY BY DEPARTMENT OF MINES LABORATORY, LAUNCESTON (SUBSEQUENT TO HOLE 10)

Hole No.	Lab. Reg. No.	Amount Paid	Date Paid	Chq. No.	From
11	809-872	Part of 36. 0. 0	20.9.61	000848	E. R. Hudson - Imprest Account
	2966-2988	" " 9.10. 0	5.11.62	060492	E. R. Hudson - Working Account
		" " 164. 0. 0	30.1.63	550943	Industrial and Mining Investigations Pty. Limited
12	940-965	Part of 36. 0. 0	20.9.61	000848	E. R. Hudson - Imprest Account
	2989-3004	" " 9.10. 0	5.11.62	060492	E. R. Hudson - Working Account
		" "164. 0. 0	30.1.63	550943	Industrial and Mining Investigations Pty. Limited
13	1165-1167	1. 4. 0	1.12.61	047873	E. R. Hudson - Working Account
	1649-1682	13.12. 0	1.12.61	047874	E. R. Hudson - Working Account
	3005-3025	Part of164. 0. 0	30.1.63	550943	Industrial and Mining Investigations Pty. Limited
14	373-406	13.12. 0	8.3.62	047988	E. R. Hudson - Working Account
	3026-3042	Part of 164. 0. 0	30.1.63	550943	Industrial and Mining Investigations Pty. Limited
15	1901-1985	34. 0. 0	21.6.62	055547	E. R. Hudson - Working Account
	3043-3062	Part of 164. 0. 0	30.1.63	550943	Industrial and Mining Investigations Pty. Limited
16	3730-3749	8. 0. 0	28.8.62	055624	E. R. Hudson - Working Account
	4250-4256	?			

NOTE:

The Laboratory Register Numbers of samples from the various holes have been obtained from Drill Core Logs. Corroborative documentation for samples 373-406 from Hole 14 is a copy of a letter from the Department of Mines Laboratory, Launceston dated 8th February 1962 and addressed to Mr. E. R. Hudson, Managing Director of Industrial and Mining Investigations Pty. Limited. Similarly, samples 4250-4256 from Hole 16 are corroborated by a copy of a letter from Dept. of Mines Laboratory Launceston dated 6th Dec. 1962 addressed to the Director of Mines Hobart. No other corroborative documentation can be located.

Payments are identified by the reference to the Laboratory Register Number in the relevant Cash Book. No payment for samples 4250-4256 can be identified.

D.E.J.S.

Exhibit 25 - Summary of Expenses re Savage River drilling & assays

2138.

SAVAGE RIVER IRON ORE DEPOSIT

DRILLING BY ASSOCIATED DIAMOND DRILLERS (SUBSEQUENT TO HOLE 10)

Invoiced in Name of	Invoice No.	Period	Hole No.	Footage From-To	Amount	Paid	Date	From (Paid on behalf of Industrial & Mining Inv—
Queensland Mines	4414,4441, 4464	14Mar-28Apl 1961	11	0-577	3559.5.0	2000. 0.0	16/5/61	E.R. Hudson - Imprest Account
						1857.12.10	4/7/61	" " "
	?	?	?		298.7.10			
					3857.12.10	3857.12.10		
Queensland Mines	4519,4529	22May-16July	12	0-244	1540.10. 0	1540.10. 0	18/8/61	" " "
Queensland Mines	4475,4556	19Jun-30Jun	12	244-365	780.2. 0	780.12. 0	7/9/61	" " "
Queensland Mines	4575	3Jul-14Jul	12	365-526	894.10.0			
	4596,4623							
	4646,4663	17Jul-8Sep.	12A	0-716	3824.15.0			
					4719. 5.0	4719.5. 0	7/9/61	" Working Account
Queensland Mines	4686,4702	11Sep-60ct.	12A	716-1011	1308.15.0			
	4723	90ct-20 "	14	0-260	1210.17.6			"
					2519.12.6	2519.12. 6	4/12/61	" "
Queensland Mines	4737	230ct-3Nov	14	260-676	2266. 5.0	2266. 5. 0	21/2/62	" " "
Queensland Mines	4755,4777	6Nov-1Dec	14	676-1082	2224.10.0	2224.10. 0	19/3/62	" " "
Queensland Mines	4796,4825,4839	4Dec-26Jan '62	14	1182-1541	1597.15.0			
" "	4854	29Jan-9Feb	15	0-114	504.10.0			
					2152. 5.0	2152. 5. 0	17/5/62	" " "
Queensland Mines	4870	12Feb-23Feb	15	114-398	1828. 5.0	3011.10. 0	2/7/62	
I.M.I.	4885,3899	26Feb-23Mar	15	398-660	1293. 5.0	110. 0. 0	5/7/62	
					3121.10.0	3121.10. 0		
I.M.I.	4926	26Mar-6Apr	15	660-781	610. 5.0			
	4961,4976,5015	23Apr-30Jun	16	0-703	3689.15.0			
					3726.12.6	3726. 12 6	18/9/62	

Exhibit 65 - Summary of Expenditure on Tasmanian Iron Ore

TELEPHONE 602 0181

CROWN SOLICITOR'S OFFICE
221 QUEEN STREET
MELBOURNE, VIC. 3000

11th October, 1974.

Priority paid mail.

The Registrar in Equity,
Supreme Court,
233 Macquarie Street,
SYDNEY, N.S.W. 2000.

Dear Sir,

re: Queensland Mines Limited v. Ernest Roy Hudson and others (Supreme Court of New South Wales Equity Division No. 292 of 1973).

1. A subpoena dated 9th October 1974 was served on me on the afternoon of 10th October 1974. This subpoena requires production before Mr. Justice Wootten on 14th October 1974 of "The Company Directors' Minute book of Stanhill Consolidated Limited".

2. As a result of inquiries which I have caused to be made I believe that the Minute book referred to in the subpoena is not in my possession or custody or under my control. I may say that Messrs. Mallesons, the Melbourne agents of Messrs. Allen Allen & Hemsley, solicitors, who procured the issue of the subpoena, were informed by one of my officers prior to the issue of the subpoena that the Minute book referred to was not in my Office.

3. I forward herewith a Certificate under the hand of the Clerk of the Executive Council, who has also been served with a subpoena to produce, that the "Company Directors' Minute book of Stanhill Consolidated Limited" is not retained in the Office of the Executive Council.

Yours faithfully,

Crown Solicitor.

Exhibit 139 - Letter to Registrar in Equity, 11th October, 1974

THE GOVERNOR'S OFFICE
SPRING STREET
MELBOURNE 3000

11th October, 1974

TO WHOM IT MAY CONCERN

This is to certify that the documents quoted in the Schedule of the Subpoena for Production i.e. "The Company Directors' Minute Book of Stanhill Consolidated Limited", are not retained in the Office of the Executive Council.

T. J. FORRISTAL
CLERK OF THE EXECUTIVE COUNCIL

Exhibit 139 - Annexure to
Letter to Registrar in Equity,
11th October, 1974

11th October, 74.

Priority paid mail.

Messrs. Allen Allen & Hemsley,
Solicitors,
2 Castlereagh Street,
SYDNEY, N.S.W. 2000.

Dear Sirs,

re: Queensland Mines Limited v. Ernest Roy Hudson and others (No. 292 of 1973).
(Your reference: J.W.D:BPJ).

1. I received yesterday afternoon a subpoena requiring production of "The Company Directors' Minute book of Stanhill Consolidated Limited" before Mr. Justice Wootten in the Supreme Court of New South Wales Equity Division on 14th October 1974.

2. As the result of inquiries which I have caused to be made I believe that the Minute book referred to in the subpoena is not in my possession or custody or under my control. I may say that your Melbourne agents were informed by one of my officers prior to the issue of the subpoena that the Minute book referred to was not in my Office.

3. The Clerk of the Executive Council has certified that "the documents quoted in the Schedule of the Subpoena for Production i.e. "The Company Directors' Minute book of Stanhill Consolidated Limited" are not retained in the Office of the Executive Council."

4. I am sending the Certificate of the Clerk of the Executive Council and a copy of this letter to the Registrar in Equity, Supreme Court, 233 Macquarie Street, Sydney, New South Wales.

5. I am returning to your Melbourne agents the sum of $10. -. which was delivered to me and the sum of $10.-. which was delivered to the Clerk of the Executive Council.

Yours faithfully,

Crown Solicitor.

Exhibit 139 - Annexure to letter to Registrar in Equity, 11.10.74

CORPORATE AFFAIRS OFFICE

YOUR REF.:
OUR REF.: EBM:RM
ENQUIRIES MR.: Mitcham

167 QUEEN STREET, MELBOURNE, VIC. 3000
P.O. BOX 4567, MELBOURNE, VIC. 3001
TELEPHONE: 60 0361

OFFICE HOURS: 9.30 A.M. - 12.45 P.M.
1.45 P.M. - 3.00 P.M.

11th October, 1974.

Registrar in Equity,
Supreme Court,
233 Macquarie Street,
SYDNEY. NSW 2000

Dear Sir,

QUEENSLAND MINES LTD. v. E. R. HUDSON AND OTHERS
NO. 292 OF 1973

I refer to an order made and entered on the 9th October, 1974, in relation to the above matter and enclose for your information a copy of a letter forwarded to Messrs. Allen Allen & Hemsley.

Yours faithfully,

DEPUTY COMMISSIONER FOR CORPORATE AFFAIRS

Enc.

Exhibit 140 - Letter from Victorian Deputy Commissioner for Corporate Affairs

JWD:BPJ
FBM:RH
Mitcham

11th October, 1974.

Messrs. Allen Allen & Hemsley,
Solicitors,
2 Castlereagh Street,
SYDNEY. NSW 2000

Dear Sirs,

QUEENSLAND MINES LTD. v. E. R. HUDSON AND OTHERS

On the 10th October, 1974, I was served with a Subpoena for the production before Mr. Justice Wootten at 10A Court, Mena House, 225 Macquarie Street, Sydney, the Company Directors' Minute Book of Stanhill Consolidated Limited.

The Minute Book is not in my possession nor under my power or control and I am unaware of its present whereabouts.

The fee of $10 tendered with the Subpoena will be returned to Messrs. Mallesons, your Melbourne Agents.

Yours faithfully,

DEPUTY COMMISSIONER FOR CORPORATE AFFAIRS

Exhibit 140 - Enclosure to Letter from Victorian Deputy Commissioner for Corporate Affairs

All communications should be addressed to—
Chief Commissioner of Police
Box 2763Y, G.P.O.
Melbourne, Vic. 3001

Telephone:
662 0911

VICTORIA POLICE

CHIEF COMMISSIONER'S OFFICE
POLICE HEADQUARTERS
MELBOURNE

Our Ref. ..... MMcD:PW ..... 14th October, 1974

Your Ref. .....

Rec'd 3.00 pm 14.10.74

Registrar in Equity,
Supreme Court,
233 Macquarie Street,
SYDNEY, N.S.W. 2000

Dear Sir,

Queensland Mines Limited -v- Ernest Roy Hudson and others - Subpoena for Production No.292 of 1973

I refer to the Subpoena for Production served on me and wish to advise that the document referred to in the Schedule - "The Company Director's Minute Book of Stanhill Consolidated Limited" is not in my possession nor do I have any knowledge of its whereabouts.

The Subpoena is, therefore, returned herewith.

Yours faithfully,

(R. Jackson)
CHIEF COMMISSIONER

Exhibit 141 - Letter from Victorian Commissioner for Police to Registrar in Equity

INDUSTRIAL & MINING INVESTIGATIONS PTY. LIMITED and
SAVAGE IRON INVESTMENTS PTY. LIMITED

of the one part and

DUBAR TRADING PTY. LIMITED

of the other part

DEED

FREEHILL, HOLLINGDALE & PAGE
Solicitors
60 Martin Place
Sydney 2000.

Tel: 20359
Ref: MR-KB

Exhibit 70 - Deed

 15th October, 1974

(Notes illegible)

QUEENSLAND MINES LIMITED

WDP/BW.

Registered Office
Northbornne Chambers
Northbourne Avenue, Canberra
All correspondence to
Melbourne Office
461 St. Kilda Rd., SC2
Telephone PM 3685

Telephone
Canberra J 2927

20th March, 1962

The Secretary,
Dubar Trading Pty.Ltd.,
66 Clarence Street,
SYDNEY N.S.W.

Dear Sir,

This is to acknowledge receipt of the sum of Two Thousand Five Hundred Pounds in full settlement of all interest of this Company and of Factors Limited and the Stanhill Group, in Iron Ore Deposits in Tasmania known as Savage River and Bligh River.

Yours faithfully,

QUEENSLAND MINES LIMITED

W.D. Phillips

W.D. PHILLIPS
SECRETARY.

(Stamp)

THIS DEED made the 1st day of October One thousand nine hundred and seventy-four BETWEEN INDUSTRIAL & MINING INVESTIGATIONS PTY. LIMITED ("IMI") and SAVAGE IRON INVESTMENTS PTY. LIMITED ("Savage") (hereinafter called "the Assignees") of the one part AND DUBAR TRADING PTY. LIMITED (hereinafter called "the Assignor") of the other part

WHEREBY IT IS AGREED AND DECLARED by and between the parties hereto AND THIS DEED WITNESSETH that in consideration of the payment of the sum of Five thousand dollars ($5,000.00) (the receipt whereof is hereby acknowledged) paid by the Assignees to the Assignor the Assignor hereby assigns to the Assignee all its right title and interest in and to Exploration Licences No. EL4/61 and EL5/61 and in particular but without limiting the generality of the foregoing all rights (if any) received by the Assignor under and pursuant to the transaction evidenced by the receipt a true copy of which is annexed hereto and marked Exhibit "A".

IN WITNESS whereof the parties have hereunto set their hands and affixed their seals on the day first abovementioned.

THE COMMON SEAL of INDUSTRIAL & MINING INVESTIGATIONS PTY. LIMITED was hereunto affixed by the authority of the board of directors in the presence of:

INDUSTRIAL & MINING INVESTIGATIONS PTY. LIMITED Common Seal

DIRECTOR

SECRETARY

THE COMMON SEAL of SAVAGE IRON INVESTMENTS PTY. LIMITED was hereunto affixed by the authority of the board of directors in the presence of:

SAVAGE IRON INVESTMENTS PTY. LIMITED Common Seal

DIRECTOR

SECRETARY

THE COMMON SEAL of DUBAR TRADING PTY. LIMITED was hereunto affixed by the authority of the board of directors in the presence of:

DUBAR TRADING PTY. LIMITED COMMON SEAL

Director

Exhibit 70 - Deed
15th October, 1974

SAVAGE RIVER IRON ORE DEPOSITS

PAYMENTS TO OR ON ACCOUNT J. E. RIDGWAY

Date	Chq. No.	Amount	From	
5.4.1961	033745	16. 5. 6	E. R. Hudson -	Working Account
14.4.1961	033752	4.12. 0	"	"
26.4.1961	033766	67. 8. 0(Part)	"	"
28.4.1961	033769	52. 8. 0	"	"
12.5.1961	033784	1. 2. 6	"	"
26.5.1961	043385	18. 5. 3	E. R. Hudson -	Imprest Account
29.5.1961	043392	5.12. 3	"	"
7.6.1961	043398	95. 1. 0	"	"
21.6.1961	043400	3. 9. 5	"	"
22.6.1961	043401	2.14. 9	"	"
23.6.1961	043403	53.19. 1	"	"
4.7.1961	043408	5. 0. 0	"	"
7.7.1961	043412	38.18. 0	"	"
13.7.1961	043414	2. 8. 0	"	"
	043418	200. 0. 0	"	"
	043419	36. 7. 4	"	"
19.7.1961	043420	30. 0. 0	"	"
2.8.1961	043430	45. 9. 7	"	"
16.8.1961	043431	114. 7. 4	"	"
5.9.1961	000842	47. 4. 1	"	"
5.10.1961	000852	4. 2. 6	"	"

Exhibit 71 - Summary of Payments to Mr. Ridgway

4.9.1961	047810	500. 0. 0	E. R. Hudson - Working Account	
28.9.1961	047834	1200. 0. 0	"	"
10.10.1961	047848	426.18. 8(Part)	"	"
23.11.1961	047857	376.10. 0	"	"
19.12.1961	047898	21.17. 0(Part)	"	"
22.1.1962	047932	5. 4. 1	"	"
	047933	89. 5. 6(Part)	"	"
26.1.1962	047937	12. 7. 0	"	"
	047939	5. 4. 1	"	"
	047940	5. 4. 1	"	"
6.2.1962	047953	16. 4. 9	"	"
	047954	6. 3. 6	"	"
21.2.1962	047979	113.19. 0(Part)	"	"
10.4.1962	055473	5.10. 2	"	"
18.4.1962	055483	6. 4. 7	"	"
21.5.1962	055511	22. 7. 4	"	"
24.5.1962	055520	19.15. 0(Part)	"	"
25.6.1962	055550	4.12 8	"	"
27.6.1962	423	14. 5. 0	"	"

..../

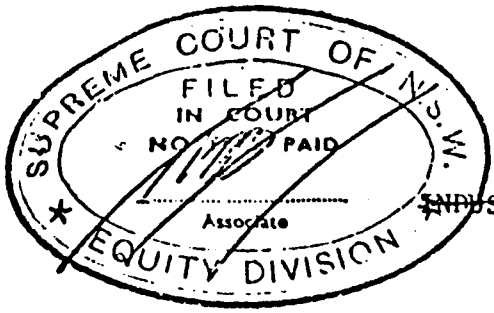
Exhibit 71 - Summary of Payments to Mr. Ridgway

PAYMENTS FROM ERNEST ROY HUDSON WORKING ACCOUNT
SUBSEQUENT TO 21ST MARCH 1961

DATE	CHQ. NO.	AMOUNT	DETAIL
5th April 1961	033744	£18. 4.10	Menai Hotel A/c Ridgway and Dr. Miles
5th April 1961	033745	£16. 5. 6	Wrest Point A/c Ridgway
10th April 1961	033748	£ 8. 1. 7	Menai Hotel A/c J.E.R.
14th April 1961	033752	£ 4.12. 0	J.E. Ridgway Tasmanian visit with Dr. Miles 26/3 to 31/3/61
19th April 1961	033757	£42.19. 0	Ansett ANA Melbourne - E.R.H.
20th April 1961	033758	£ 2.10. 6	Hughes Hire Hobart (2) A/c E.R.H.
20th April 1961	033759	£ 7.17. 0	Dept. Mines (Tas.) Purchase Reports, Plans etc.
20th April 1961	033761	£28. 7. 1	Avis Rent-a-Car Dr. Miles Tasmania
26th April 1961	033766	£67. 8. 0	Wrest Point Hotel - A/c Ridgway 6-14th April 1961, E.R.H. 11/4/61
28th April 1961	033769	£52. 8. 0	J.E. Ridgway Tas. Expenses 3-14th April 1961
3rd May 1961	033772	£35. 0. 0	F. Blake Services as instructed by J.E.R. at Savage River (Geological Fees)

D.E.J.S.
17.10.74

2150. Exhibit 145 - List of Payments from Hudson's working account



EX.

~~E. R. HUDSON~~
~~INDUSTRIAL AND MINING INVESTIGATIONS PTY LIMITED~~
SAVAGE IRON INVESTMENTS PTY LIMITED

TASMANIAN IRON ORE RECEIPTS *

Year Ended	Option Payments	Royalties
30.6.1964		
30.6.1965	50,000	
30.6.1966	25,000	
30.6.1967		50,000
30.6.1968		50,000
30.6.1969		163,518
30.6.1970		533,019
30.6.1971		499,783
30.6.1972		545,676
30.6.1973		597,613
30.6.1974		585,273
1.8.1974	———	129,146
TOTAL	75,000	3,154,028
		$3,229,028

* Prior to Income Tax

D.E.J.S.
25.10.1974

Exhibit 102 - Summary of Royalties received by Defendant

NORTH WEST IRON

			Aust $
12000	Preference	@ 80.00	960000
240020	Ordinary	@ 1.41	337348
Preference dividend accruing at June			66675
Legal Fees			420
Int on item loans to 31/12/71			19232
			1549475
Less provision			400000
			1149475

Richards, Mather & Co.
2000 Union Commerce Building
Cleveland, Ohio 44115

ROUTE TO	USE	INITIALS
CHAIRMAN OF BOARD		
PRESIDENT		
GENERAL MANAGER	1	RD
SECRETARY	2	
DATE REC'D.	11 OCT 1972	
ACCOUNTANT	3	
REGISTRY		
PHOTOCOPY FOR		

KS GPC

KI

October 6, 1972

Dear Sirs:

This letter is being written to the Australian shareholders of Northwest Iron Co.; identical letters are being addressed to those named in the attached list.

We have recently concluded a substantial modification of the pricing arrangements for the Savage pellets with the Japanese steel companies increasing the price from 19.5¢ to 22¢ (U.S.) per unit of iron effective October 1, 1972 and extending until March 31, 1976. As part of this transaction for this same period, PMI is reducing its management fee to 9.5¢ (U.S.) per ton shipped. Also, PMI and Cerro are deferring A$.20-5/6 per ton of the 25¢ royalty; the deferral to be until after April, 1979. Provision is also being made, effective October 1, 1972, to capitalize $1,333,333 junior subordinated advances heretofore made by Cerro and PMI to Northwest. This will result in an interest saving to the company.

Mr. William H. Kyle, our Tokyo representative and a Vice President of PMI, will be visiting Australia later in October and he will give you full details of the negotiation. In the meantime, I am enclosing an analyses to show the rather substantial improvement in cash flow and profit to Northwest during this period.

We are indebted to Messrs. R. C. H. Mason, A. W. Coates, M. H. Allen and Barry Laws who participated in this negotiation in June of this year. I must also tell you that we are extremely pleased with the cooperation and understanding which has been shown by the Japanese steel companies and trading companies. This price relief has been under discussion with them for a considerable period of time but the mills' help and cooperation was outstanding and should be recognized by us all.

We are not intending to make any public announcements of these modifications.

If you have any questions which are not satisfactorily answered by Mr. Kyle or anything further which you wish to inquire about, please let us know.

Yours very truly,

Robt McInnes

RMcInnes:rmb

Encls.(2)

Exhibit 146 - Savage River files

2153.

Mr. R. C. H. Mason
Chief General Manager
Ampol Petroleum Limited
Box 5342, G.P.O.
Sydney, N.S.W., Australia 2001

Mr. A. W. Coates
Manager General Investments
Australian Mutual Provident Society
Box 4134, G.P.O.
Sydney, N.S.W., Australia 2001

Mr. M. Smith
Investment Manager
The Colonial Mutual Life Assurance
Society Limited
P. O. Box 771H, 3001
Melbourne, Victoria, Australia

Mr. R. D. Hutchinson
General Manager
Kathleen Investments (Australia) Limited
Suite 3701, Australia Square
Sydney, N.S.W., Australia 2000

Mr. Milton H. Allen
Deputy General Manager
The Mutual Life and Citizens' Assurance
Company Limited
Victoria Cross
North Sydney, N.S.W., Australia 2060

Mr. Huntly G. Walker
General Manager
The National Mutual Life Association
of Australasia Limited
447 Collins Street
Melbourne, Victoria, Australia

Mr. J. O. Lewis
General Manager
The United Insurance Company, Limited
Cnr. George & Hunter Streets
Sydney, N.S.W., Australia 2000

NORTHWEST IRON CO. LTD.

ESTIMATED PROFIT AND LOSS AND CASH REQUIREMENTS
FROM APRIL 1, 1972 TO MARCH 31, 1976

Sales at $.195 per iron unit through 3/31/76; costs escalated through 1976; No give up included ($U.S. 000 omitted).

		Estimated to March 31			
		1973 Amt.	1974 Amt.	1975 Amt.	1976 Amt.
Tons:	Produced and shipped	1,133	1,125	1,125	1,125
Sales:	Gross	14,758	14,654	14,654	14,654
	Royalty	880	874	874	874
	Net	13,878	13,780	13,780	13,780
Costs:	SRM	9,159	9,626	9,815	10,258
	Administrative & general	182	120	120	120
	Interest	1,964	1,967	1,861	1,767
	Depreciation	2,224	2,369	2,369	2,369
	Total Costs	13,529	14,082	14,165	14,514
Net profit (loss) pre tax		349	(302)	(385)	(734)
Tax provision					
Net profit (loss)		349	(302)	(385)	(734)
Depreciation		2,224	2,369	2,369	2,369
Cash from operations		2,573	2,067	1,984	1,635
Long term debt - cash basis		(4,111)	(4,271)	(4,276)	(4,284)
Capital, etc. expenditures - net		(159)	(182)	(182)	(182)
Short term loan - A.N.Z.		1,718			
New Junior sub-debt		-0-	2,500	2,500	3,000
Increase (decrease) in cash		21	114	26	169

8/16/72

NORTHWEST IRON CO. LTD.

ESTIMATED PROFIT AND LOSS AND CASH REQUIREMENTS
FROM APRIL 1, 1972 TO MARCH 31, 1976

Sales at $.195 per iron unit through Sept. 30, 1972 and $.220 per iron unit thereafter; Costs escalated through 1976; with give up amounts shown below ($U.S. 000 omitted).

		Estimated to March 31			
		1973 Amt.	1974 Amt.	1975 Amt.	1976 Amt.
Tons:	Produced and shipped	1,133	1,125	1,125	1,125
Sales:	Gross	15,704	16,533	16,533	16,533
	Royalty	880	874	874	874
	Net	14,824	15,659	15,659	15,659
Costs:	SRM	9,159	9,626	9,815	10,258
	Administrative & general	182	120	120	120
	Interest	1,964	1,802	1,567	1,332
	Depreciation	2,224	2,369	2,369	2,369
	Total costs	13,529	13,917	13,871	14,079
Net profit pre tax and give up		1,295	1,742	1,788	1,580
Give up (permanent):	Interest on Jr. Sub Debt	39	80	87	93
	Management fee (50% - $U.S. 10)	56	112	112	112
	Total give up-permanent	95	192	199	205
Net income after give up adjustments		1,390	1,934	1,967	1,785
Tax provision (1)					442
Net profit		1,390	1,934	1,967	1,343
Depreciation		2,224	2,369	2,369	2,369
Give up - deferred royalty ($U.S. 25)		142	281	281	281
Cash from operations		3,756	4,584	4,637	3,993
Long term debt - cash basis		(4,111)	(4,271)	(4,276)	(4,284)
Capital, etc. expenditures - net		(159)	(182)	(182)	(182)
Short term loan - A.N.Z.		518			
Increase (Decrease) in cash		4	131	179	(473)

(1) Assumes deferred royalty is deductible in year accrued.

Exhibit 146 - Savage River files

Mr. R. C. H. Mason
Chief General Manager
Ampol Petroleum Limited
Box 5342, G.P.O.
Sydney, N.S.W., Australia 2001

Mr. A. W. Coates
Manager General Investments
Australian Mutual Provident Society
Box 4134, G.P.O. 20530 will call Thank!
Sydney, N.S.W., Australia 2001

Mr. M. Smith
Investment Manager
The Colonial Mutual Life Assurance Society Limited 600771
P. O. Box 771H, 3001
Melbourne, Victoria, Australia

Mr. R. D. Hutchinson
General Manager
Kathleen Investments (Australia) Limited
Suite 3701, Australia Square
Sydney, N.S.W., Australia 2000

Mr. Milton H. Allen
Deputy General Manager 120433 will call Thanks
The Mutual Life and Citizens' Assurance Company Limited
Victoria Cross
North Sydney, N.S.W., Australia 2060

Mr. Huntly G. Walker
General Manager
The National Mutual Life Association of Australasia Limited
447 Collins Street
Melbourne, Victoria, Australia

Mr. J. ~~O. Lewis~~ TED, BUXTON.
General Manager
The United Insurance Company, Limited
Cnr. George & Hunter Streets 20312
Sydney, N.S.W., Australia 2000

Exhibit 146 - Savage
2157. River files

TED

...ation	Reserves
...Bell (Tas.)	16.9 mill. tons av. 0.82% tin

lidated Gold Fields Australia
l Mining & Railway Co. Ltd.
,400 ordinary 50c shares.

1966	1967	1968
10.3	1.2	(28.0)
15.0	—	—

: improved during 1968
n the Federal Lode to the
ts as the ore from the

in the processing of the
own these to be even more
a number of metallurgical
ied out both in Australia
ssification and gravity
d and a pilot plant set
: flotation process for

ires has increased the
concentrate acceptable to
ncentrates which are unable
xt two years because of
production, have been
elter.
depend on its ability
d an economic recovery

probl... has been deferred
e the higher grade less
nd Dreadnought lodes
f 360,000 tons have reserves

SAVAGE RIVER CONSORTIUM

Mineral	Latest Available Production	Location	Reserves
Iron	Not available	Savage River (Tas.)	800 mill. tons of magnetite av. 38% iron.

OWNERSHIP:
Mitsubishi Shoji Kaisha Ltd.—75%
Sumitomo Shoji Kaisha Ltd.—25%
} Dahlia Mining Co.—50%

Pickands Mather & Co.—24%
Cerro Corp. —24%
Pocantico International —24%
Chemical International — 3%
Kathleen Investments
Ampol
Colonial Mutual Life
M.L.C.
National Mutual Life
} 25%
} North West Iron Co.—50%

ACTIVITIES: Iron—Low grade deposits are to be processed in a pelletising plant designed to produce 2 million tons of pellets per annum.
It has been arranged that half the production will be sold to Mitsui and Sumitomo at cost and the remainder to Japanese steel mills. A contract negotiated with the latter, is worth $500 million and consists of 45 million tons of iron pellets over 20 years. Production commenced in February 1968 and regular shipments are at present being made.

Exhibit 146 - Savage River files
2158.

MANAGER

GROUP ACCOUNTANT

c.c. SECRETARY ✓

EMS:LL

22nd August, 1972

NORTHWEST IRON CO. LIMITED

SAVAGE RIVER OPERATIONS - JUNE 1972

FINANCIAL FIGURES IN $U.S.

A further loss of $57,614 was made for the month, bringing the loss for three months to June to $199,239. Results are still disappointing particularly pellet production, and cash flow is restricted by the large interest requirements, $162,000 per month at present. Cash flow for the full year, at present levels of operation, would be around $1.9 million and this does not measure up too well with a present debt structure of $35 million. Dividends in arrears on Pref. Shares equals $1.23 million.

SUMMARISED PROFIT AND LOSS STATEMENT

($US 000's)

Details	Month of June	3 Months to June
Production - Pellets (000 tons)	94.7	290.8
Sales - Pellets (000 tons)	75.4	207.0
Revenue - Sales	950	2,608
- Royalties	(59)	(162)
	891	2,446
Costs - Production	783	2,381
- Administration	15	43
- Amortisation etc.	192	591
- Stock variation	(203)	(860)
	787	2,155
Gross Profit	104	291
Less: Interest	162	491
Net Profit	(58)	(200)

K. M. STRANGE

Exhibit 146 - Savage River files

KATHLEEN INVESTMENTS (AUSTRALIA) LIMITED

SUITE 3701, AUSTRALIA SQUARE, SYDNEY, N.S.W. 2000

MEMO

TO The Secretary, FROM The Group Accountant,

DATE April 24, 1972

RE: NORTHWEST IRON CO. LTD.

Final production figures and costs for the year have now been provided although revenue details and precise interest payable figures are not yet available. The approximate results for the year can be summarised as follows:-

Production pellets 2,100,452 tons (total Savage)

($U.S.000)		
Revenue	13,323	
Less Royalties	804	12,519
Costs:		
Production	9,180	
Admin. Fee	245	
Interest	2,093	
Exchange	152	
Depreciation	2,062	
Stock Variance	15	13,747
Loss for Year approximately		1,228

The Loss figure of $1,228,000 is much higher than the estimate of around $1,000,000 at the Honolulu meeting on March 15.

This then, would bring losses to date around $U.S. 4.7 million. The approximate cash flow from operations for the year was of the order of $U.S.800,000. Operating costs per ton for the year $U.S.7.48 versus target of $6.27, but for March had risen to $9.28.

K. M. STRANGE.

Exhibit 146 - Savage River files

KATHLEEN INVESTMENTS (AUSTRALIA) LIMITED
SUITE 3701, AUSTRALIA SQUARE, SYDNEY, N.S.W. 2000

MEMO

TO The Secretary, Sydney

FROM The Group Accountant, Sydney.

DATE April 18, 1972

RE: NORTHWEST IRON CO. LTD.

1. Accompanied by Mr. A. Mason of Newaim, arrangements were made for the visit to Savage River Mines on 10th and 11th of April, Monday afternoon being spent at the mine site and most of Tuesday at the pellet plant situated at Port Latta. I had seen the operation previously, and not a great deal of "policy" information was obtainable. Despite tactful questioning, senior staff, while being most helpful, confined their remarks to the operation only.
2. We all know that this is financially, a highly geared company - Capital U.S. 6.5 million to loans $U.S. 35.2 million, and interest charges, particularly in the early years, are crippling, when profit targets are so far behind original estimates. Unless a price rise is obtained, it seems certain that refinancing of the "B" series Debentures (at present $U.S. 11.1 million and due June 76)will be necessary.
3. An attempt has been made to briefly estimate the cash flow from the operation from now until 1988 but even with:-

   (a) Production rising to 2.5 million tons in 1975 (present level 2.1)

   (b) Pellets remaining at 19¢ U.S. per unit
   and

   (c) Cost per ton (before depreciation) being reduced to less than 1972 levels:-

   there appears little hope of preference dividend arrearage and preference share redemption being met before 1978 - if at all. The rough figures presented indicate a more or less break even situation over 21 years. If net cash flows were discounted over this period the possible result would be gloomy indeed. In arriving at the estimate, guesses had to be made re policy on returning loans and preference share matters.
4. To really justify our investment the operation would need to:-

   (a) Obtain at least 21¢ U.S. per unit Fe - a 1¢ increase increases profit by $U.S. 1.5 million on 2.3 million tons per year (Northwest Iron Share $U.S.775,000).

   (b) Reduce costs to around the $7.80 per ton level - (Y/ended 1972 is approximately $9.00 on 2.1 million tons -).

..2/..

(c) Increase annual production to around 2.5 million tons by 1975 - (present level 2.1 million).

Of course all this is hard to expect, and although the "mining end" says there is a good chance of reaching the 2.5 level this year, the "pellet end" is very doubtful. An astonishing side of the mining operation in 1972 figures to February, is the fact that of every 100 tons mined in the pit only 18.6 tons finishes up in the pipe line as concentrate, although the pit superintendent says everything possible is being carried out as regards grade control.

5. In future, quarterly profit statements will be examined in detail and a summary conveyed to Directors. A good case still exists to provide for representatives of the "interested" Australian Shareholders to meet each quarter and jointly constructively criticise managements efforts for the period.

6. The attached sheets summarise the more important criteria as regards the operation and may assist in obtaining a greater understanding of the situation. An estimated cash flow from now until the end of the operation is also presented.

K. M. STRANGE.

Att.

Exhibit 146 - Savage River files

2162.

NORTHWEST IRON CO. LIMITED

(50% Interest - Savage River Mines)

FINANCIAL SUMMARY AT DEC 1971

($U.S. 000)

Capital Structure:

Details	Total		K.I.A.		
	No.	Amt.	No.	Amt.	%
Preference - $6.00 p/a cum. at $90 redeemable $105.	40,000	3,600	12,000	1,080	30
Common - $1, issued at	2,900,000	2,900	240,000	240	8 1/3
Premium of 50¢			Prem.	120	
				1,444.0	

Other participants:-

American	Australian
Pocantino (Rockefeller)	A.M.P.
Cerro	C.M.L.
Picklands Mather	M.L.C.
Chemical International Finance	Nat. Mutual
	United Insurance
	Ampol Mining
Total 75.0%	Total 16.6%
	KIA 8.3%

Loans:

($U.S. 000)

Type	Due to	Int %	Due	Balance Dec. 31, 1972
Demand Debentures A	Savage River Co.	5 3/4	June 83	7669
B	" " "	5½	" 76	11112
C	" " "	?	" 78	7500
Subordinated P/Note	Instutional - Prudential	5 1/8	83	4930
Harbor Loan	Tasmanian Govt.	5 3/4	88	2006
Junior Sub Notes	Various	?	?	2000
				35217

Exhibit 146 - Savage River files

Source and Use of Funds:

	Summary at Dec. 31, 1971 ($U.S. 000)		
Obtained from	Capital etc.	- 8,046	
	Loans	- 35,217	
	Other	- 1,003	
	Cash flow from ops.	- 2,817	47,083
Used on	Plant etc.	- 44,121	
	Stocks, Drs.	- 540	
	Advances etc.	- 1,052	
	Investments (Motel)	- 229	45,942
	Leaving on Hand at Dec 31, 1971		1,141

Royalties:

65¢ Australian per ton pellets produced,
Payable as follows:- ($U.S. 000)

	To date	on 2.3 million tons p/a
Tas. Govt. 15¢	1,272	410
Hudson 25¢	2,121	684
Picklands etc. 25¢	2,122	685
65¢ (Aust)	5,515	1,779

Pricing Structure:

On weighted average of all pellets purchased by Japanese consumers, with following minimums.

April 70 to Mar 73 - 19¢ at 66.7 Fe = $U.S. 12.67
" 73 to " 76 -18.5¢ at 66.7 Fe = " 12.34

Mining:

Estimated total mined 72/73 - millions tons	13.0	100%
of this: to waste	8.2	61%
to tailings ex concentrator	2.6	20
to Pelletising Plant	2.4	19
	13.0	100%

(Based on Mining Statistics 71/72) 11 months.

Profitability:

A rough estimate only, not related to previous P.M.I. forecasts, but based on current cost trends, information obtained on site and the following assumptions.

*	Production (million tons)	- actual 69	1,092
		- 70	2,000
		- 71	1,937
		- 72	2,100
		- est 73	2,300
		- " 74	2,400
		- 75 on	2,500
	Price per unit (U.S. cents)	- 19	
	Rev. " ton ($U.S.)	- 12.73	(67% Fe)
	Royalties per ton (U.S. cents)	- 7.73	(65¢ Aust)
	Costs - no depreciation ($U.S. 000)	- 9,500	(1972 - 9100)
	Costs per ton ($U.S.)	- 8.2	(1972 - 9.05)

Cash Flow for Project from April 72 ($U.S. 000)

	Revenue	230,496	
Less	Royalties	14,580	215,916
	Costs Production	155,050	
	Administration	3,100	
	Interest	8,565	
	Taxation	601	167,316
	Cash flow from operation		48,600
	deduct		
	Loan Repayments	35,000	
	Additional Plant etc.		
	15 yrs x 165	2,475	
	Preference Share Redemption	4,200	
	Preference Share Dividend (to 1978)	2,400	
	Ordinary Capital Repayment	2,900	46,975
	POSSIBLE SURPLUS AFTER 21 YEARS		1,625

Note: Depreciation omitted from profitability and is around U.S. $2.5 million per year.

* Total Savage River Production Northwest Iron share 50% only.

Exhibit 146 - Savage River files

AMPOL PETROLEUM LIMITED

HEAD OFFICE: 81 PACIFIC HIGHWAY, NORTH SYDNEY.
BOX 5342 G.P.O., SYDNEY, 2001. TELEPHONE: 929.6222

CABLES & TELEGRAMS
AMPOLCO, SYDNEY.

23th March, 1972

Mr. J. S. Milner,
Chairman,
Kathleen Investments (Aust.)
Limited,
G.P.O. Box 479,
SYDNEY, N.S.W. 2001.

Dear Mr. Milner,

The attached Memorandum summarises the discussions held between the participants in Savage River Mines in Honolulu on March 15 and 16.

It will be noted that it is intended to follow up in Japan the proposals made by the Australian participants, when the Japanese representatives have had time to discuss the proposals with their Principals.

Pickands Mather have agreed to co-ordinate arrangements for this visit.

Yours sincerely,

J. D. Donoghue,
Assistant to the Chairman.

Att.

Exhibit 146 - Savage River files

NORTHWEST IRON CO. LTD.

1. The purpose of this brief memorandum is to outline for the Australian participants the outcome of discussions on March 15th and 16th between the parties involved in the venture.

2. Messrs. Mason (Ampol), Troy (M.L & C) and Coates (A.M.P.) attended as representatives of Australian shareholders and others attending were

Pickands Mather & Co.

R.S. Carey, President
Robert McInnes, Vice President
B.F. Borgell, Vice-President - Operations
W.H. Kyle, PMI - Tokyo
G.C. Reynolds, General Manager, Savage River Mines
W.E. Conway, Vice President, Diamond Shamrock Corporation

Cerro Corporation

Alan Wolfley, Vice President - Finance
H. Willis Higgs, Group Vice President - Mining Operations

Mitsubishi Corporation

E. Haseo, Director & General Manager F.R.M. Dept.
T. Iwamura, Manager of Ore Section D, F.R.M. Dept.

Sumitomo Shoji Kaisha, Ltd.

H. Kawabuchi, Director & General Manager F.R.M. Div.
T. Uchiyama, Manager Iron Ore Section

3. Prior to the formal meeting with the Japanese venturers, discussions were held between the Northwest Iron shareholders at which the following points emerged:

(a) Northwest Iron will incur a loss of close to $1,000,000 in fiscal 71-72

(b) if current prices for the Company's product are maintained and the plant achieves a 90% operating efficiency, fiscal 1972-73 will produce a loss of $73,000.

Plant efficiency of 90% has not been achieved to date and this profit estimate is based on wage escalation of 5% p.a.

(c) it is the view of Pickands Mathers technical staff that there are no further major modifications which could be incorporated in the plant in order to achieve a better operating performance.

4. In the light of this information and Pickands Mather's advice that negotiations had, to date, not led to any willingness on the part of the Japanese steel mills to agree to a price increase, the Australian representatives felt that their point of view should be heard.

5. The American shareholders were informed of the Australian disappointment with the performance of the venture to date and the complete failure of the project to even approach the level of profitability held out as feasible in the initial submission.
From the information furnished it appeared that unless major concessions

were obtained from the Japanese the venture was in a worsening long term loss situation.
In these circumstances it would be wrong to dismiss the possibility that the mine might be closed either to conserve the resource until prices improved or because of an inability to go on funding the cash flow deficiency.

6. Emphasis was laid on the political implications of closure particularly, in the context of the small Tasmanian economy and it was suggested that this aspect should be emphasised in the discussions with the Japanese.

7. The difficulties facing the Japanese in conceding a price increase in the light of assurances sought in this respect by the major ore producers at the time contract deferrals were imposed were acknowledged. However the Australian shareholders felt that not enough had been done to explore alternate means of relieving the position and the Americans were informed that at the partners meeting the Japanese would be requested to consider a re-financing of the Northwest Iron debt.

8. It was pointed out that if the interest cost of Northwest's debt could be substantially reduced and the principal repayments deferred the cash flow and profitability of the venture could be materially improved.
Pickands Mather's representatives were very interested in this proposal and indicated that they could not foresee any difficulty in securing the agreement of the U.S. lenders to the early repayment of their loans.

9. It was agreed that the Australian shareholders should advance this suggestion at the joint meeting with the full support of the U.S. shareholders.

10. The other area in which some saving might be achieved because of differing tax situations would be through the purchasing of Mr. Hudson's royalty rights for a heavily discounted present value. This possibility is to be explored with Hudson by Pickands Mather.

11. The venture meeting with the Japanese was held on 16th March and commenced with the formal matters which were quickly dealt with.

12. The Japanese via Mr. Haseo then requested permission to make a statement which predictably enough dealt with the "Nixon Shock" and the great difficulties the Japanese steel industry was facing.

Reference was made to the very heavy over commitments for ore and the deferrals requested from major producers. The fact that in accepting these deferrals the majors had sought assurances that no producer would receive a unilateral price increase while any default persisted under existing contracts was stressed and it was at least inferred that the Savage River project was fortunate not to have had a contract deferral imposed on it.

13. Mr. Haseo and Mr. Iwamura called for patience on the question of price and expressed the view that in due course all prices would have to rise.

14. The Australian representatives then put their views, as previously expressed to the U.S. shareholders, to the Japanese, stressing the political importance of the venture. It was pointed out that the project was facing a long term difficulty and immediate action was needed to rectify the position if the possibility of closure was to be avoided.

The proposal that the Japanese should examine the possibility of refinancing the debt was then put forward and was received as a serious proposal by the Japanese.

15. The fundamental difference between this project and the major W.A. mines was stressed in that Savage River has strictly limited ore reserves and cannot look forward to a very long operating life over which to recover losses in the early years. It was pointed out that if losses continued for a further 2 or 3 years at the current rate it might well be impossible to recover those losses over the remaining life of the mine.

16. The Japanese were told that in their own words they had sought and received the co-operation of the major Australian producers in solving the difficulties of the steel mills and what was now sought and expected by the Australian shareholders of Northwest was evidence of the same co-operation and sympathy on the part of the mills in resolving the very real difficulties facing this small Australian producer.

17. These statements appeared to impress the Japanese who undertook to carry them back to Japan for most serious consideration and it was suggested that a further meeting be held in Japan in due course to hear the outcome of the study of the position which will now be undertaken by the Japanese.

18. Incidental pieces of information which flowed from the discussion were

(a) the Japanese partners are guaranteed at least all costs in the price paid for their share of the pellets and are currently receiving approximately 22 cents per FE unit .

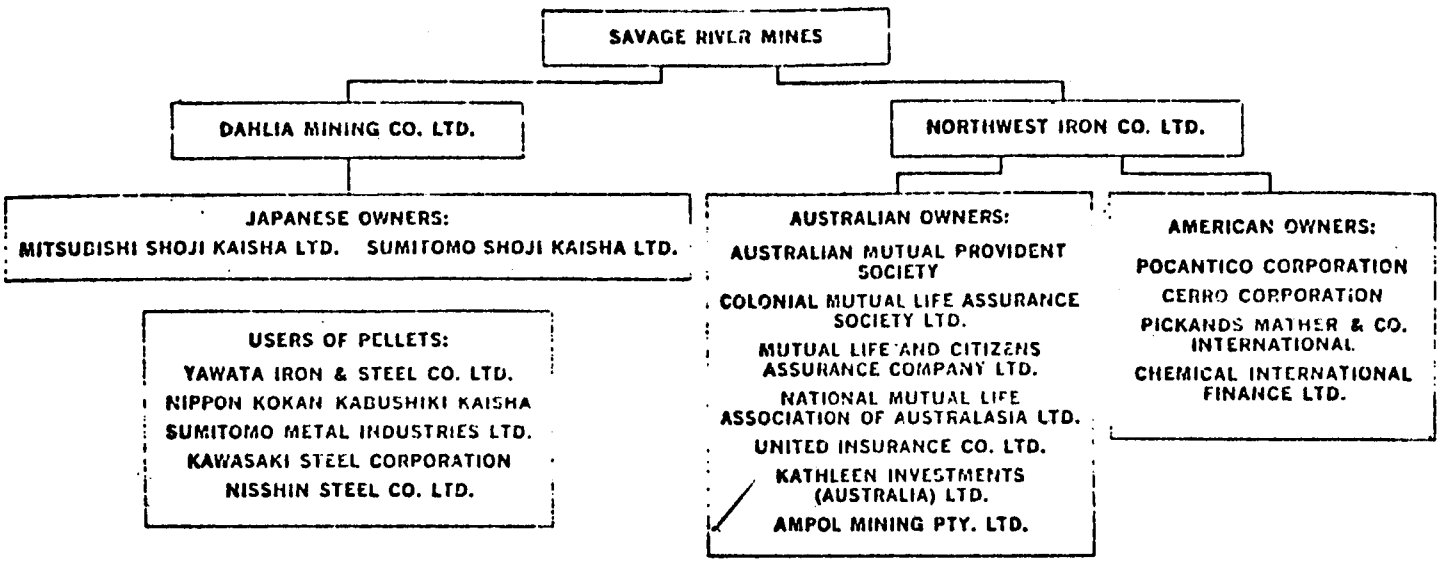
(b) in the view of the Japanese partners the Robe River pellets cannot be produced at the 18.5 cents per unit to be paid in the terms of the contract. A price rise for these pellets will affect the price of Savage River pellets under the averaging mechanism.

The Japanese agree that review of the Robe price may not occur for two or three years.

SYDNEY

22nd March, 1972.

Exhibit 146 - Savage River files



7

Exhibit 146 - Savage River files

2170.

ERH:BA 9th November 1970

Mr. R. R. Beebe,
Manager,
Mineral Resources Development Dept.,
Marcona Corporation,
One Maritime Plaza,
SAN FRANCISCO, Calif. 94111

Dear Mr. Beebe,

Further to your letter of 30th September, I regret the delay in replying due to my absence interstate.

I attach a location map showing the various areas of the Savage River deposits, namely, northern, central, southern, Long Plains and Rocky River. The central area was transferred to Savage River Mines and the balance of the area has been retained by this Company. Savage River Mines is producing an oxide pellet with the following chemical composition:

	$
Iron	67.5
Phos.	.020
Silica	1.50
Alumina	.25
Mang.	.20
V	.40
TiO_2	.20

The average grade of ore, other than the Rocky River ore, to a 600 foot open-cut level is 35% Fe. The ore is magnetically separated and a slurry containing 70% Fe sent by pipeline to the pellet plant on the coast, the pellets being loaded by belt to 60,000 ton bulk carriers.

Drilling of the northern, southern and Long Plains areas and some drilling at Rocky River gives the following reserves:-

Northern area to 600 feet open-cut	77 million tons
Southern area " " " " "	15 " "
Long Plains - drilling in progress	30 " " estimated
Rocky River - only 2 drill holes No further development undertaken other than access roads.	Tonnage substantial but only approx. 16% Fe.

.../

Exhibit 146 - Savage River files

Drilling to 1,000 feet below the Savage River on the northern section was undertaken, which indicated that the orebody at this depth had widened to approximately 500 feet with an average grade of approximately 50% Fe. On cave and block mining to this depth, reserves are estimated at 300 million tons of ore, although further drilling could be necessary. The orebody at this depth was strong and can be assumed to persist to a much greater depth.

The amount of drilling and geological data available is so voluminous that it would not be possible to duplicate same, and I feel the best thing to do would be for the representatives of Marcona Corporation - if they are interested - to go through the records held at the Company's office in Sydney and to personally inspect the deposit, which will substantiate grade and tonnage.

The ore contains 1% and up to 2% TiO_2 which is left behind in magnetic separation at a grind of -325. Other than for some 15 feet on the surface the ore is magnetite.

The property is serviced by bitumen roads. Arrangements have been made for the supply of electricity at 6 mills. There is ample water from the Savage River, which never dries up. Climatic conditions could be described as rainy at the minehead, but with excellent conditions at the pellet plant on the coast. Temperatures do not go to freezing point.

The plant at Savage River Mines is designed to produce 2.5 million tons of oxide pellets per annum for shipment to Japan over a 20 year contract. Due to a defect in design of the pellet plant, the company has not maintained its expected output, the pellet plant only having a 74% operational efficiency.

There are no mining or transportation problems with the pipeline. Mining and operational costs of the Savage River Mines unit are available if you desire to make further inquiries.

The ore in all deposits other than Rocky River is identical and of similar chemical composition, although the titanium content of the northern area is slightly higher than the central area. This is of no consequence, due to its removal on beneficiation.

As there is currently an operating unit on portion of the area, investigations, other than on reserves, can be limited to the present operation, which will give costings and all aspects of the proposal relative to a new operation.

While I feel the Government may be content to agree to the transportation of a slurry, I think they will need an assurance from the company that consideration would be given at a later stage to pelletising, either oxide or metallised. The location, circumstances etc., of the orebody would lead to production of cheap billets by metallisation in an electric furnace.

.../

Exhibit 146 - Savage
2172. River files

Royalties payable to the Government amount to 15 cents per tone of exported material - irrespective of the nature of the exportable commodity.

I would be prepared to negotiate a reasonable cash price to cover cost of exploration and development etc., in the nature of $2 million, and a royalty on production which could be discussed.

I look forward to hearing from you.

Yours faithfully,
INDUSTRIAL & MINING INVESTIGATIONS
PTY. LIMITED

E. R. Hudson
Managing Director

Exhibit 146 - Savage River files

ERH:BA

6th November 1970

Mr. R. Schetk,
c/- Eglo Engineering Pty. Ltd.,
P.O. Box 47,
LIDCOMBE 2141

Dear Mr. Schetk,

I refer to your inquiries relative to the Savage River deposits and attach a plan indicating thereon the various areas, namely, northern, central, southern, Long Plains and Rocky River.

The central area has been transferred to the company at present operating the pellet plant, known as Savage River Mines, with an anticipated capacity of 2.5 million tons of oxide pellets per annum. However, due to continual difficulties in the pellet plant, it has not reached design capacity.

All areas other than the central area are retained by this Company, which has, at considerable expense, drilled same. The main orebody is in the northern area. Two phases of drilling were undertaken, one to determine reserves as an open-cut mine down to 600 foot depth and, secondly, to determine the nature of the orebody at a depth of 1,000 feet below the Savage River to consider the desirability of mining by cave and block methods.

The reserves on the surface of the northern area are 77 million tons for open-cut mining to 600 feet, of an average grade of 35%. The deeper drilling indicates that the orebody is some 500 feet wide and of an approximate grade of 50% Fe, 1,000 feet below the Savage River, and is continuing at strength.

Calculations show that if the property were mined on a cave and block method to a depth of 1,000 feet, reserves would be approximately 300 million tons. It is also considered the use of higher grade material would justify the deeper mining and would not incur any great increase in mining costs. Further work, however, would be necessary on this aspect, including a detailed feasibility study.

In the southern area is approximately 15 million tons of material and in the Long Plains area some 30 million tons. The Rocky River area would contain a substantial tonnage, but insufficient drilling has been done to estimate same.

.../

Exhibit 146 - Savage River files

The grade of ore at Rocky River is an average 15% Fe and, at the present juncture, further drilling of this area was suspended, as it could only be regarded as a future possible source of supply.

Savage River Mines mines the ore, runs it over magnetic separators and produces concentrate of 70% Fe, which is then sent by pipeline to the coast and converted into oxide pellets with an average Fe content of 67.5%. The whole output is shipped to Japan by bulk loaders of approximately 60,000 tons.

The reason the property is retained by this Company is that the original leases were held on the understanding that a steel mill, probably of mini size, would be established in Tasmania to meet the specific Tasmanian markets. Over a period of 6-7 years, a considerable amount of work has been done in conjunction with Lurgi on the metallisation of pellets, continuous casting etc., but work on this aspect has been slowed down because of the failure of the Lurgi process in New Zealand, and some evidence is awaited of satisfactory working of the process.

A company known as Tower Research is undertaking a feasibility study for the establishment of a mini steel operation of a capacity of 200,000 tons and for the shipment of pellets. An undertaking has been given that the Company will supply the necessary raw material should it proceed.

This Company would be open to any discussions with your organisation if you are interested in dealing with me in regard to the balance of the area. I am prepared to hand over my interest subject to Government consent which I feel could be obtained, the Tasmanian Government having altered their view in insisting on a steel mill and being prepared to sanction another pellet unit with some kind of undertaking for further processing, such as metallisation, billets or a small steel plant to be considered subject to same abeing found to be economic.

In the event of my handing the property over, the question of consideration could be discussed. A large sum of money has been expended on development, which would require a payment of some $2 million on transfer, together with a royalty on future production. Government royalties are 15 cents per ton of finished product when exported, whatever the nature of the product, and the Tasmanian Government will assist in road construction and part-financing at port of shipment.

The undertaking I have received from the Government is the supply of electricity at 6 mills. But I have no doubt they would reduce this in respect of any further processing beyond the oxide stage, and particularly in regard to a mini steel plant.

The present Savage River Mines operation has had some difficulties, due to bad construction of the pellet operation leading to continual failure, overall efficiency last year being only 74%.

.../

Exhibit 146 - Savage
2175. River files

At the present time, I am having engineering, capital costing and operating figures prepared by Dravo, and feel sure that construction of a single grate travel furnace would give higher efficiency, lower operating cost and lower capital cost.

I refer to the report from Battelle which I lent you, and confirm that I do not agree with their conclusions or figures, and the profitability, original capitalisation etc. of a new plant could be materially reduced.

At the present time, the pellets are sold at approximately 18.5 cents per unit, giving an approximate sale price of $12 per ton of pellets of the quality mentioned above. I will obtain for you copy of the re-costing by Tower Research, but have no doubt that your organisation itself would be able to reassess the cost figures set out in the Battelle report.

I also enclose herewith copy of the actual costs of the present operation, which are materially higher than anticipated, due to the failure of the pellet plant and low operational efficiency. These actual production figures will give you a fairly good indication of labour costs, mining costs etc.

I do not consider that any great reduction in operating costs could be made in regard to the mining section, beneficiation plant or pipeline. However it is from where the material reaches the coast to its final loading on the ship that excessive costing and lack of continuous operation has had an effect on the economics of the present unit.

As you are inspecting the area in the near future, I will be able to answer any specific questions you might raise. The amount of geological work, drilling etc., which has been undertaken is so voluminous that it would be of no particular value to forward rough details thereof, but it is suggested if your organisation is interested in proceeding with an investigation, that arrangements be made for your senior geologists to peruse the large amount of material.

As two other organisations are interested, it would be appreciated if you could let me have a fairly early decision as to whether you desire to continue with your interest. In the event of your proceeding with the matter, I could assist in capital raising etc. in Australia.

Finally, the chemical analysis of the pellet produced at Savage River Mine is -

	$
Iron	67.5
Phos.	.020
Silica	1.50
Alumina	.25
Mang.	.20
V.	.40
TiO_2	.20

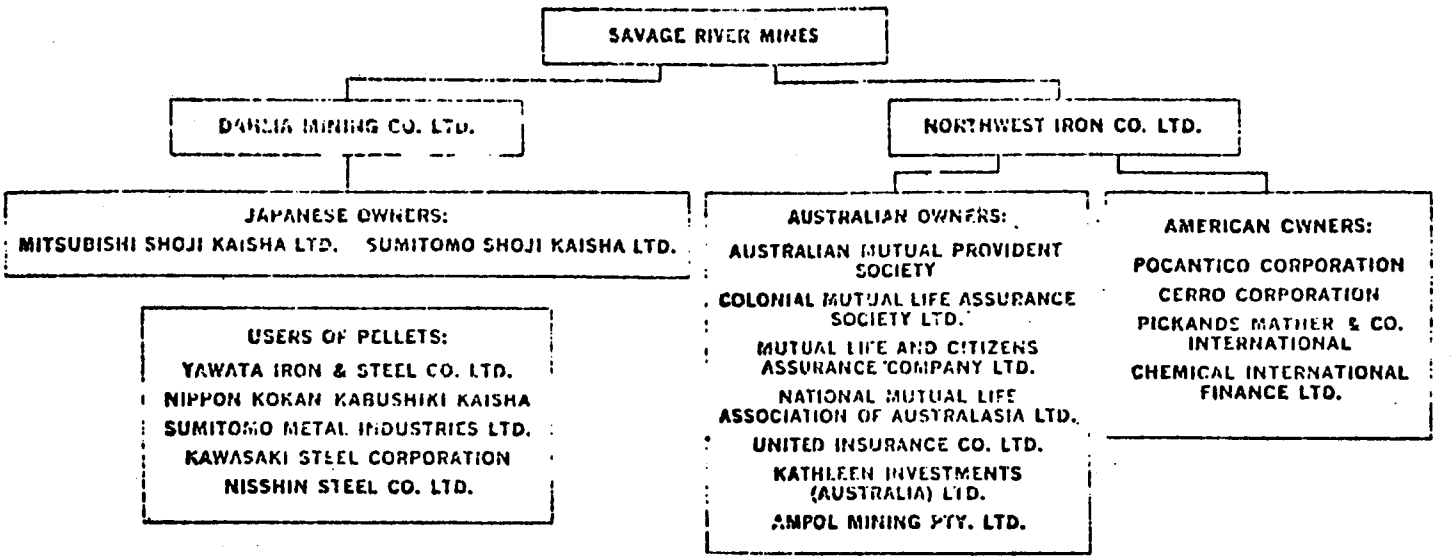
Exhibit 146 - Savage River files

I look forward to hearing from you after you have completed your inspection of the various areas with my geologist, Michael Edyvean.

Best regards,

R. R. Hudson
Managing Director

Exhibit 146 - Savage River files



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2178. Exhibit 146 - Savage River files

DARLING AND COMPANY LIMITED

DRAFT ONLY

NORTHWEST IRON CO. LTD.

STATEMENT RELATING TO SHARES AVAILABLE FOR PURCHASE IN THIS AMERICAN COMPANY BY AUSTRALIAN INSTITUTIONS AND COMPANIES

Prepared by
Darling and Company Limited
50 Young Street,
Sydney.

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THIS IS NOT AN OFFER TO THE PUBLIC

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I N D E X

Exhibit 146 - Savage River files

DARLING AND COMPANY LIMITED

NORTHWEST IRON CO. LTD.

S U M M A R Y

The attached document contains all the relevant facts, statements and opinions and this summary has been extracted only for the convenience of the recipients of that document.

GENERAL

Pickands Mather & Co. International has organised the Savage River Iron Ore Project in north-western Tasmania by bringing together two groups to operate the project as a joint venture. The first, Northwest Iron Co.Ltd., is a company incorporated in Delaware, U.S.A., the principal shareholders of which are Pickands Mather & Co. International, Cerro Corporation, a major international mining group, and Pocantico International Corporation, a private investment company owned by certain members of the Rockefeller family and others. The second joint venturer is Dahlia Mining Co.Ltd., another U.S. corporation, owned jointly by the Mitsubishi and Sumitomo trading companies of Japan.

Work is currently under way to develop the mine and construct facilities to provide an annual designed production capacity of 2,250,000 tons of high grade iron ore pellets over a 20-year period. Total capital investment in the project is estimated at US$84,000,000 to be provided in equal amounts by the joint venturers.

The substantial loan capital required for the project has been arranged by the principal shareholders of Northwest Iron.

Exhibit 146 - Savage River Files

Under recently completed long term sales contracts, the iron ore pellets will be shipped to Japan for consumption by the Japanese steel companies. Shipments are expected to commence in late 1967.

SHARES AVAILABLE

The principal shareholders of Northwest Iron are willing to sell parcels consisting of common and preferred shares in the company at the same prices they paid for them on subscription. Certain selected Australian companies and

institutions will have the opportunity of participating in the company by purchasing one or more parcels, each of which will consist of 40,000 common shares and 2,000 preferred shares.

The common shares have a par value of US$1.00 and the purchase price of each of which will be US$1.50.

The preferred shares have no par value, will be sold at US$90.00 each, plus accrued dividends from 15th February, 1966 and may be redeemed by the company at a price of US$105.00. Each preferred share is entitled to a cumulative preference dividend of US$6.00 each year the rights to which accrue from 15th February, 1966. The shares rank ahead of the common shares for any dividend payment and in the event of liquidation or winding-up the holders of the preferred shares are entitled to receive an amount of US$100.00 for each preferred share and accumulated dividends before distribution of assets to common shareholders.

Each parcel of 40,000 common shares and 2,000 preferred shares has a purchase price of US$240,000 (or approximately A$214,285) plus 1% thereof to cover all fees and charges connected with the sale.

Various Australian companies, which include Ampol Petroleum Ltd. and Kathleen Investments Ltd., have agreed in principle to purchase parcels of shares described above.

RETURNS TO SHAREHOLDERS

This is an estimate only based upon the projections and assumptions contained in the attached document. It may be read only as a statement of opinion.

Average return on investment:

(i) Common shares - 41.5 per cent.

(ii) Preferred shares - 8.6 per cent.

(iii) A parcel of common and preferred shares in the proportions stated earlier - 28.8 per cent.

Rate of return on a parcel of common and preferred shares in the proportions stated earlier, calculated on a present value basis of the cash flow available to shareholders of both income and capital. At the rate of return specified the flow of funds will equal the amount of the investment.

(i) If Northwest Iron pays out all available profits in dividends on common shares each year - 17.8 per cent.

(ii) If Northwest Iron pays a dividend of US$0.20 on common shares each year and the accumulated profits only at the end of the venture - 12.7 per cent.

DARLING AND COMPANY LIMITED

DRAFT ONLY

NORTHWEST IRON CO. LTD.

(A company incorporated in Delaware, U.S.A.)

STATEMENT RELATING TO SHARES AVAILABLE FOR PURCHASE IN THIS COMPANY BY AUSTRALIAN INSTITUTIONS AND COMPANIES

Any estimate statement of opinion or of expectation or information designated "Opinion only" which appears in this document, although arrived at after careful consideration of the available facts, is merely a statement of opinion and should not and cannot be taken or relied upon as a promise, representation or statement of fact by Northwest Iron Co.Ltd., Pickands Mather & Co., Pickands Mather & Co. International, Cerro Corporation, Pocantico International Corporation or Darling and Company Limited or any officer or employee of any of them.

I. GENERAL

Pickands Mather & Co. International, a subsidiary of Pickands Mather & Co. of Cleveland, Ohio, one of the largest tonnage producers of iron ore and iron ore pellets in the U.S.A., has organised the Savage River Iron Ore Project in north-western Tasmania.

It has brough together two groups to operate the project as a joint venture. The first, Northwest Iron Co. Ltd. is a company incorporated in Delaware, U.S.A., the principal shareholders of which are Pickands Mather & Co. International, Cerro Corporation, a major international mining group, and Pocantico International Corporation, a private investment company controlled by certain members of the Rockefeller family and others. The second joint

Exhibit 146 - Savage River files

venture is Dahlia Mining Co.Ltd., another U.S. corporation, owned jointly by the Mitsubishi Shoja Kaisha Ltd. and Sumitomo Shoji Kaisha Ltd. of Japan.

Work is currently under way to develop the mine and construct facilities to provide an annual designed production capacity of 2,250,000 tons of high grade iron ore pellets over a 20-year period. Total capital investment in the project is estimated at US$84,000,000 to be provided in equal amounts by the joint venturers.

Under recently completed sales contracts, the iron ore pellets will be

shipped to Japan for consumption by the Japanese steel companies. Shipments are expected to commence in late 1967.

The principal shareholders of Northwest Iron Co.Ltd. have agreed to advance funds to the company which may be required -

- to maintain its working capital at a minimum of US$500,000; and
- to provide the project with any funds, in excess of US$84 million and not otherwise made available, required to complete the project.

II. DEFINITIONS

The following abbreviations are used hereafter:

Northwest Iron Co.Ltd.	-	"Northwest"
Pickands Mather & Co.International	-	"P.M.I."
Pickands Mather & Co. (the parent company)	-	"P.M."
Cerro Corporation	-	"Cerro:
Pocantico International Corporation	-	"Pocantico"

P.M. Cerro and Pocantico - "The Northwest principal shareholders"

The Savage River Iron Ore Project (more fully described in Section IV hereof) - "the project"

III. PICKANDS MATHER & CO. AND THE NORTHWEST PRINCIPAL SHAREHOLDERS

P.M. and P.M.I.

The planning, construction and operation of the project is being managed by P.M. which has established offices in Sydney, Port Latta and Perth. Since 1883, the principal business of P.M. has been to provide raw materials for the United States and Canadian iron and steel industries in the capacity of managers, sales agents and distributors. In iron ore mining, P.M. is one of the largest tonnage producers in North America with the largest high grade pellet production capacity in the world. In the U.S. and Canada, P.M.'s production of iron ore in 1965 was 14.7 million tons, of

which 11.0 million was in the form of high grade pellets.

P.M. organised, developed and manages Erie Mining Company, one of the largest producers of iron ore pellets in North America, which represents an investment of US$500 million and has a production capacity of over 8 million tons a year presently being expanded to 10.3 million tons a year. The Wabush Mines project, in Labrador and Quebec, which began production early in 1965 with an initial annual production capacity of 5.2 million tons of pellets and concentrates from low grade iron ore, was also organised, constructed and managed by P.M. The

Exhibit 146 - Savage River files

capital investment in the property was about US$300 million. P.M. has a large exploration and research staff and owns research laboratories in Hibbing, Minnesota.

In Western Australia, P.M. is conducting an exploration programme for non-ferrous metals on behalf of Australian (including Ampol Petroleum Limited and North Broken Hill Ltd.), U.S. (including Cerro and Pocantico), and Canadian corporate investors.

Cerro

Cerro is a diversified mining and manufacturing company. It was originally formed to mine base metals in Peru, but over the years has moved into copper mining, smelting and refining. The company also owns oil property in the U.S. Assets of the company stand at about US$316 million.

Cerro is actively exploring for new mineral deposits in Western Australia and elsewhere in the world.

Pocantico

Pocantico is a private investment company owned by certain members of the Rockefeller family and others.

IV. THE PROJECT

land on which the project is to be conducted
The ~~project property~~ consists of the mine area, a pipeline right of way and a harbour area, all of which are included in a mining lease granted by the State of Tasmania. The arrangements with the State permit the production and removal of up to 60 million tons of iron ore pellets, about 30 years' operation at the present planned production rates. Approval has been obtained from the Australian

Exhibit 146 - Savage River files

Government for the export of up to 60 million tons of iron ore pellets.

The lease has been granted by the State of Tasmania, is for a period of 30 years and requires payment of a royalty of 15 cents (Aust.) for each gross ton of iron ore product shipped from the leased property. In addition to the royalty the State, overriding royalties totalling 50 cents (Aust.) per gross ton of processed iron ore products shipped are payable. These royalties are payable as to one half to Industrial & Mining Investigations Pty.Ltd., the former holder of the mining rights and as to the balance to P.M., Cerro and the shareholders of Pocantico. The royalties payable to P.M., Cerro and the shareholders of Pocantico are in consideration for the substantial funds expended in analysing and promoting the project.

At the mine area site a concentrating plant, work shops and tailings disposal system will be built. Production is expected to begin in late 1967, building up to 2,250,000 tons of pellets in 1969 of which Northwest share will be 1,125,000 tons.

The mineral deposits consist mainly of magnetic ore containing about 38 per cent iron which can be readily concentrated by proven methods. Exploration and drilling have outlined sufficient open pit crude ore to produce over 45 million tons of pellets containing 67.5 per cent iron. The crude ore will be mined by open pit methods and concentrated at the mine site by grinding to a fine size. This will be followed by magnetic separation of iron ore from the waste. The fine concentrate will be pumped through the pipeline to the pellet plant at the harbour location. In the pellet plant, the magnetite

concentrate will be pelletised and the pellets moved by conveyor to storage or directly to ore carriers for shipment to Japan.

A pipeline is to be built from the mine site to the coast, 52 miles to the north. Field crews are now locating the route to be used to provide this economical form of transportation. The terminal of the pipeline will be at Port Latta where loading facilities will be constructed. The State of Tasmania has agreed to lend the joint venture $A.4 million for the construction of these facilities. This loan is to be repaid over a 20-year period.

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V. CAPITALIZATION OF NORTHWEST

Authorised Capital

The authorised capital of Northwest consists of -

- Four million common shares of a par value of $US.1 each; and
- Forty thousand preferred shares which were issued at $US.90 each.

The rights attaching to the preferred shares are set our below:

Issued Capital

Northwest has issued -

- 2.9 million common shares at a price of $US.1.50
- 40,000 preferred shares at $US.90 each.

Northwest has granted an option to P.M. to take up 800,000 common shares at $US2.50 each.

Loan Capital

P.M., Cerro and Pocantico have negotiated and placed

Exhibit 146 - Savage River files

their credit behind significant borrowings from American institutions. An amount of $US.5,950,000.00 will be advanced against the security of 5-1/8% subordinated notes and a further sum of up to US$29,750,000.00 will be lent on 5½% to 5-3/4% notes.

In addition a loan of $US.4.5 million ($A.4 million) has been granted by the Tasmanian Government to the two joint venturers.

Total Capitalization

The total capitalization of Northwest is in accordance with the aforegoing, as follows:

18 pcls (Pref 36000
(c/s 720000=24.82%

	US$		
million			
2.9/common shares issued at US$1.50 each	4,350,000	)	
40,000 preferred shares issued at US$.90 each	3,600,000	)	
Cost of options granted to P.M.	50,000	)	8
5-1/8% subordinated notes	5,950,000		
5½% to 5-3/4% notes	29,750,000		
Tasmanian Government loan - one half of the total amount.	2,250,000		38
	45,950,000		
			46

DARLING AND COMPANY LIMITED

Undertaking to American Institutions

The principal shareholders in Northwest have undertaken to the U.S. institutions that they will maintain a minimum working capital of $500,000 until the debt is repaid. They have further undertaken to provide the project with any funds, in excess of US$84 million and not otherwise made available,

Exhibit 146 - Savage River files

required to complete the project. Neither of these undertakings extend to other shareholders of Northwest.

Rights attaching to Preferred Shares

The preferred shares have no par value, were issued at a price of US$.90 and may be redeemed at US$.105 each. These shares are entitled to a cumulative preference dividend of $US.6 each year which commenced to accrue from 15th February, 1966. Dividends are expected to be paid half yearly. The shares rank ahead of the common shares for any dividend payment and in the event of liquidation or winding-up the holders of the preferred shares are entitled to receive an amount of US$.100 for each preferred share and accumulated dividends before distribution of assets to common shareholders.

Options

The option granted to P.M. expires on 31st December, 1982. The option warrant is transferable and divisible.

Voting Trust

The principal shareholders of Northwest have entered into a voting trust and P.M.I. is thereby authorised to vote in respect of all shares held by the principal shareholders of Northwest.

VI. SHARES AVAILABLE FOR PURCHASE BY SELECTED AUSTRALIAN INSTITUTIONS AND COMPANIES

The principal shareholders of Northwest are willing to sell parcels consisting of common and preferred shares at the prices at which they acquired them, to selected Australian institutions and Companies. A fee of 1% will be payable to Darling & Co. Ltd. in addition to cover all fees and charges connected with the sale. All sales will be effected in the U.S.A. and do not appear to

attract Australian or American Stamp Duty.

Each parcel will consist of 40,000 common shares at a price of

US$.1.50 each and 2,000 preferred shares at a price of US$.90.00 each. The cost of each parcel will be:

	US$		
40,000 common shares at US$.1.50	60,000	$1.5	
2,000 preferred shares	180,000		
Fees and charges connected with the sale	2,400		
	$ 242,400	PLUS accrued dividends on the preferred shares from	
	1,454,400	the 15/2/66 to the date of purchase.	

The Australian equivalent of the total purchase price at current rates of exchange is $A.215,467.

The principal shareholders have a number of parcels of common and preferred shares available for purchase. Parcels have also been reserved for purchase by Ampol Petroleum Ltd. and Kathleen Investment Ltd. who have agreed in principle to buy them.

VII. SALES

Production for the project will be taken at cost by the two joint venturers. Northwest has made arrangements to sell its half share of the production to a consortium of Japanese Steel Producers under a twenty-year contract. That contract provides for the sale of 22,250,000 tons of iron ore pellets of which a minimum of one million tons are to be delivered each year.

The Sales Agreement between Northwest and the Japanese Consumers provides for a Base Price of 20c. (U.S.) per iron unit delivered during the period from 1967 through to March 31, 1970. With pellets containing 67.5% Fe this represents a sales value of $13.50 US per ton. After March 31, 1970, the Base Price will be computed to be equal to:

(a) the weighted average price per unit (C + F) of all pellets purchased by Japanese steel or iron companies for consumption in Japan, less

(b) actual freight costs per unit to the Consumers, from the Port to the respective discharge points in Japan, for all pellets sold under this Sales Agreement.

During the period April 1, 1970, through to March 31, 1973, the minimum Base Price shall be not less than 19c. and during the next three-year period the minimum shall be not less than 18½c. Although no minimum Base Price is indicated for periods subsequent to March 31, 1976, the 18½c. has been continued through 1987 in this estimate.

VIII. FINANCIAL ESTIMATES

OPINION ONLY

Projections of Operating Income, Profits & Cash Flow

Attached to this report are:

- A schedule setting forth projections of the anticipated operating results and profits of Northwest through 1982 - Annexure A.
- A schedule setting forth the estimated cash flow to Northwest - Annexure B.
- A schedule of the assumptions on which Annexures A and B are based - Annexure C.

the preparation of the financial

These figures have necessarily been calculated on various assumptions and are intended to show the basic economies of the project, so far as the holders of common shares of Northwest are concerned, as estimated by its management. For example, it is assumed that (a) Northwest's share of the capital costs of the project will be $US.42,000,000; (b) operating costs will neither increase nor decrease from those which it is calculated would now prevail if the project were fully operational; (c) the price to be received by Northwest under its contract (described above) with certain Japanese steel mills for the sale of pellets will be the fixed or minimum contract price for the first eight years of pellet deliveries and that the minimum price in effect on March 31, 1976, rather than higher or lower prices related to then current market values, will continue throughout the remaining' life of the contract (although the contract does not provide for a minimum beyond the first eight years); and (d) that present tax laws applicable to Northwest will remain unchanged and application of those laws to items of revenue and expense will be as anticipated. Variations in capital or operating costs, in market conditions and in tax laws to their application could affect these projections. In addition, because of the novelty of certain aspects of the project and related arrangements, assumptions as to various tax matters are necessarily based on judgment rather than actual experience.

Accordingly, it should be appreciated that while this schedule was prepared in good faith and on assumptions believed to be reasonable, the projections set forth are not guaranteed and no responsibility

can be assumed if Northwest's actual results of operations are different from those projected.

Earnings

P.M.I. has estimated that it will cost approximately US$.6 a ton to mine the iron ore over the twenty-year period. Compared with the average estimated revenue of US$12.64 a ton, this leaves a working margin of US$.6.64. Interest and other costs will reduce this margin to about US$.6 and depreciation and amortisation to US$4.16. Net profit per ton after Australian tax will be an average of about US$2.30.

The aggregate net profit after Australian company tax is expected to be US$.1.6 million in the first full year of operation, rising to US$.4 million in 1969 and to US$.5 million in 1982.

Annual Earnings per common share can therefore on this basis be expected to be an average of 67 cents (U.S.) over the life of the project. If these net profits are achieved the 67 cents (U.S.) per share represents a very attractive return on the purchase price of $US.1.50 per share.

Dividends

The representatives of Northwest have indicated that it is the present expectation of the directors to pay the first dividend on common stock in 1969 at a rate of not less than 20 cents (U.S.) a share, that is, 13½ per cent of the issue price of US$.1.50. Profits will be distributed in dividends except when in the directors' judgment it is prudent to retain such profits to provide adequate working capital to repay indebtedness and make such additional investments as will enhance the value, efficiency and productivity of the project.

Exhibit 146 - Savage River files

Returns to Shareholders

(a) Average return on investment:

Upon the basis of the aforementioned estimates, the average return on investment is:-

9.

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. Common shares	-	41.5 per cent.
. Preferred shares	-	8.6 per cent.
. A parcel of common and preferred shares in the proportions stated earlier	-	28.8 per cent.

This calculation is arrived at by:

1. Averaging the investors share of the annual profit after tax together with preferred dividends over the twenty-two-year period of the investment.

2. Averaging the investment remaining in the company at the end of the year after allowing for retirement of preferred shares.

3. Expressing the average return as a percentage of the average investment.

It has been assumed that the option over common shares ~~was~~ will be exercised at the end of 1968 and the proceeds of ~~the~~ that share issue was used to retire half of the outstanding preferred shares.
It has been assumed that
The balance of the preferred shares was assumed to be/will be retired in equal instalments in the years 1976, 1977, 1978 and 1979.

(b) Rate of return on a parcel of common and preferred shares, in the proportions stated earlier, calculated on a present value basis

Exhibit 146 - Savage River files

of the cash flow available to shareholders (of both income and capital). At the rate of return specified the flow of funds will equal the amount of the investment.

. If Northwest pays out all available profits in dividends on common shares each year - 17.8 per cent.

. Where the cash flow is less than the profit reflected in the annexures the dividend paid has been assumed to be the lower amount permitted by the cash flow. Accumulated profits are then assumed to be paid out in dividends when justified by the cash flow.

. If Northwest pays a dividend of 20 cents (U.S.) on common shares each year and the accumulated profits only at the end of the venture - 12.7 per cent.

IX. EXCHANGE CONTROL & TAXATION

Taxation

~~Despite the fact that Northwest is registered in Delaware, U.S.A.~~, Advice has been received that Australian shareholders will be at no disadvantage notwithstanding that Northwest is an American Coy compared to U.S. shareholders. Because of the double tax agreement between Australian and the U.S., Northwest is not

expected to be liable for any company tax above that paid in Australia. It is also anticipated that dividends can be paid to Australian shareholders free of U.S. withholding tax.

A copy of a letter containing this advice, addressed to P.M.I. by Price Waterhouse & Co., Cleveland, U.S.A., is attached hereto marked "Annexure D". It should be noted, however, that the difference between the redemption price and the purchase price of the preferred share may be subject to tax in Australia.

Exchange Control

~~(Note: To be rewritten after Exchange Control ruling)~~

Australian companies or individuals may not purchase are not allowed to hold shares in foreign registered companies unless Exchange Control permission is granted. This permission is expected to be granted to enable Australian institutions and companies to avail themselves of the opportunity to purchase shares in Northwest.

X. RECOMMENDATION

This opportunity for Australian investors to participate in a major resource development with partners of international standing and on such favourable terms, is confidently recommended.

Exhibit 146 - Savage River files

NORTHWEST IRON CO. LTD. ESTIMATED OPERATING INCOME AND CASH FLOW (U.S. DOLLARS - 000 OMITTED) ANNEXURE 'A'

OPINION ONLY TO BE RETYPED

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Total	Average Per Ton
Production schedule, etc:																					OF FINAL STATEMENT.		
Estimated tonnage	75	800	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	1,125	22,250	
Unit price f.o.b. Tasmania	.200	.200	.200	.193	.190	.186	.185	.185	.185	.185	.185	.185	.185	.185	.185	.185	.185	.185	.185	.185	.185		
Price per ton (67.5 Fe)	13.50	13.50	13.50	13.00	12.83	12.83	12.58	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49	12.49		
II Operating Income:																							
Ore sales income	1,012	10,800	15,188	14,622	14,434	14,434	14,147	14,051	14,052	14,051	14,052	14,051	14,052	14,051	14,052	14,051	14,052	14,051	14,052	14,051	14,052	281,358	12.64
Cost of sales (50% of Savage River Mines operating costs)	522	5,096	6,584	6,583	6,584	6,583	6,764	6,763	6,764	6,763	6,764	6,763	6,764	6,763	6,764	6,763	6,764	6,763	6,764	6,763	6,764	133,405	5.99
Interest cost:																							
Series A Demand Debentures		572	542	503	465	427	388	350	311	273	235	197	158	120	81	43	7					4,672	.21
Series B Demand Debentures		969	869	747	625	503	382	260	138	23												4,516	.20
Harbour Loan		129	125	121	117	113	108	103	99	93	87	81	75	68	61	54	45	37	28	18	8	1,570	.07
Subordinated notes		306	290	269	249	228	208	187	167	146	126	105	85	64	44	23	3					2,500	.11
Administrative and general expenses		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	500	.03
Cost (before capital extinguishment)	522	7,097	8,435	8,248	8,065	7,879	7,875	7,688	7,504	7,323	7,237	7,171	7,107	7,040	6,975	6,908	6,844	6,825	6,817	6,806	6,797	147,163	6.51
Gross profit before capital extinguishment and taxes	490	3,703	6,753	6,374	6,369	6,555	6,272	6,363	6,548	6,728	6,815	6,880	6,945	7,011	7,077	7,143	7,208	7,226	7,235	7,245	7,255	134,195	6.13
Capital extinguishment:																							
Depreciation of assets (20 years)		1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,917	1,912	38,335	1.72
Amortisation - deferred financing		163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	163	3,260	.15
	-0-	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,075	41,595	1.87
Profit before income tax for Australian 42½%	490	1,623	4,673	4,294	4,289	4,475	4,192	4,283	4,468	4,648	4,735	4,800	4,865	4,931	4,997	5,063	5,128	5,146	5,155	5,165	5,180	92,600	4.15
Current				17	1,574	1,772	1,788	1,827	1,905	1,982	2,019	2,046	2,249	2,963	2,991	3,019	3,046	3,054	3,058	3,062	3,073	41,445	1.86
Deferred	208	690	1,986	373	248	130	(6)	(6)	(6)	(7)	(7)	(6)	(182)	(867)	(867)	(867)	(867)	(447)				-0-	-0-
	208	690	1,986	390	1,822	1,902	1,782	1,821	1,899	1,975	2,012	2,040	2,067	2,096	2,124	2,152	2,179	2,607	3,058	3,062	3,073	41,445	1.86
Indicated Net Profit	282	933	2,687	3,404	2,467	2,573	2,410	2,462	2,569	2,673	2,723	2,760	2,798	2,835	2,873	2,911	2,949	2,539	2,097	2,103	2,107	51,155	2.30
Preference dividend	240	240	120	120	120	120	120	120	120	120	90	60	30									49,535	
N.P. after pref. div.	42	693	2,567	3,284	2,347	2,453	2,290	2,342	2,449	2,553	2,633	2,700	2,768	2,835	2,873	2,911	2,949	2,539	2,097	2,103	2,107		
Earnings per share after Preferred dividends 3,700,000 shares	.01	18	69	89	63	66	62	63	66	69	71	73	75	79	78	79	80	69	57	57	57	(Ave. 67)	

Exhibit 146 - Savage River files 2199.

ANNEXURE 'B'
OPINION ONLY

TO BE RETYPED ON FINAL STATEMENT

~ NORTHWEST IRON CO. LTD.

ESTIMATED OPERATING INCOME AND CASH FLOW

(U.S. DOLLARS - 000 OMITTED

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Total
III. Estimated Cash Flow:																						
Initial working capital	2,355																					2,355
Net profit as above	282	933	2,687	3,404	2,467	2,573	2,410	2,462	2,569	2,673	2,723	2,760	2,798	2,835	2,873	2,911	2,949	2,539	2,097	2,103	2,107	51,155
Share issue		2,000																				2,000
Add back:																						
Capital extinguishment		2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,080	2,075	41,595
Deferred tax provision	208	690	1,986	873	248	130	(6)	(6)	(6)	(7)	(7)	(6)	(182)	(867)	(867)	(867)	(867)	(447)				-0-
Available cash	2,845	5,703	6,763	6,357	4,795	4,783	4,484	4,536	4,643	4,746	4,796	4,834	4,696	4,048	4,086	4,124	4,162	4,172	4,177	4,183	4,182	97,105
Loan repayments:																						
5¼% Series A Demand Debentures		333	667	666	667	667	666	667	667	666	667	667	666	667	667	666	334					10,000
5¼% Series B Demand Debentures		1,109	2,218	2,219	2,218	2,219	2,218	2,219	2,218	1,112												17,750
5¼% Harbor Loan		62	66	70	74	78	83	87	93	98	103	110	116	123	130	138	146	154	163	173	183	2,250
5-1/5% Subordinated loan		200	400	400	400	400	400	400	400	400	400	400	400	400	400	400	200					6,000
Preferred Dividends at 6%	240	240	120	120	120	120	120	120	120	120	90	60	30									1,620
Preferred stock retirement at 10$		2,100								525	525	525	525									4,200
Total fixed liabilities	240	4,044	3,471	3,475	3,479	3,484	3,487	3,493	3,495	2,921	1,795	1,752	1,747	1,190	1,197	1,204	680	154	163	173	183	41,820
Balance available to Common Shareholders:																						
Annual amount	2,605	1,659	3,282	2,887	1,316	1,299	1,097	1,043	1,145	1,825	3,001	3,082	2,979	2,858	2,889	2,920	3,482	4,018	4,014	4,010	3,999	55,385

2200. Exhibit 146 - Savage River files

DARLING AND COMPANY LIMITED

ANNEXURE 'C'

(OPINION)

ASSUMPTIONS USED IN PREPARING ANNEXURES 'A' AND 'B'

1. The pending sales agreement between Northwest and the five Japanese consumers provides for a base price of 20 cents US per iron unit delivered during the period through March 31, 1970. With pellets containing 67.5% Fe this represents a sales value of $13.50 US per ton. After March 31, 1970, the base price will be computed to be equal to; (a) the weighted average price per unit (C+F) of all pellets purchased by Japanese steel or iron companies for consumption in Japan, less (b) actual freight costs per unit to the consumers, from the port to the respective discharge points in Japan, for all pellets sold under this sales agreement. During the period April 1, 1970, through March 31, 1973, the minimum base price shall be not less than 19 cents US and during the next three-year period the minimum shall be not less than 18½ cents US. Although no minimum base price is indicated for periods subsequent to March 31, 1976, the 18½ cents US has been continued through 1987 in the estimates.

2. The joint venture operating costs, based on an annual production of 2,250,000 tons have been estimated as follows:-

Exhibit 146 - Savage River files

	Initial Twelve Months	Next Four Years	Next Fifteen Years	Twenty Year Average
Cost, per ton, for:				
Mining	1.90	1.46	1.46	1.48
Equipment replacement	-	-	.16	.12
Concentrating	1.21	1.21	1.21	1.21
Concentrate pumping	.22	.22	.22	.22
Pelletizing	1.32	1.32	1.32	1.32
Stocking and loading	.09	.09	.09	.09
Royalties	.73	.73	.73	.73
Local services	.17	.17	.17	.17
General operating	.46	.46	.46	.46
Management fee	.19	.19	.19	.19
Total:	6.29	5.85	6.01	5.99

3. No provision has been made for the payment of interest and principal on US $2,000,000 of 5½% Series B demand debentures, as present indications are that this will not be required.

DARLING AND COMPANY LIMITED

2.

ANNEXURE 'C'

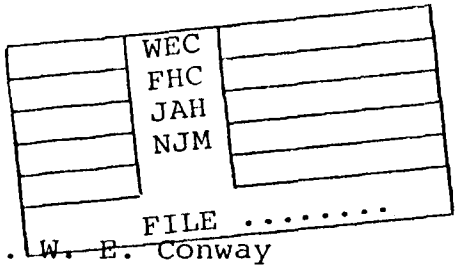
(OPINION)

4. It has been assumed that the option over common stock will be exercised at the end of 1968 and the proceeds of the ensuing share issue applied to the retirment of half the outstanding preferred shares.

ANNEXURE D

(To be ...illegible...
typed for attachment to
...illegible... statement)

PRICE WATERHOUSE & CO.



UNION COMMERCE BUILDING
CLEVELAND 44115

June 20, 1966

RECEIVED
4 JUL 1966
Ans'd .....

Mr. ~~W. E.~~ Conway
Pickands Mather & Co. International
68 Pitt Street
Sydney, New South Wales, Australia

Dear Mr. Conway:

With reference to your inquiry regarding the imposition of United States tax on the distribution of future dividends by Northwest Iron Co. Ltd. to individuals or corporations resident in Australia, we wish to advise you that no U.S. tax would be levied on such payments. It is understood that Northwest's income will be derived from participation in the Savage River Project, which is a joint venture mining ore in Australia. Consequently, Northwest's source of income will be Australia and not the United States.

The United States tax laws provide in Section 861 of the Internal Revenue Code that dividends received from a domestic corporation (Northwest was legally organized as a U.S. corporation) will be regarded as from U.S. sources if more than 80% of its gross income is shown to have been derived from sources within the United States or, to put it another way, dividends will not be regarded as from U.S. sources if they are paid by a domestic corporation which receives less than 20% of its gross income from sources within the United States. Accordingly, the dividends to be paid by Northwest will not be regarded as being from sources within the United States.

Sections 871 and 881 of the Internal Revenue Code provide for the imposition of tax at the rate of 30% upon dividends distributed to non-resident alien individuals and non-resident foreign corporations where the amounts received are from sources

Exhibit 146 - Savage River files

within the United States. Inasmuch as the dividends to be paid by Northwest will not be from sources within the United States, the taxes imposed under Sections 871 and 881 will not apply. In addition, the tax treaty in effect between the United States and Australia provides for the imposition of taxes on dividends derived from sources within each treaty country. The treaty provides that a tax of 15% will be imposed upon dividends derived from United States' sources when paid to a resident of Australia. Under the source of income doctrine described above, the dividends paid by Northwest would not be regarded as income from United States' sources for the purposes of the treaty and, therefore, the lower rate of tax provided therein would not apply.

You also inquired as to the potential effects under U.S. tax laws which may result from the redemption of the preferred stock of Northwest which may be issued to Australian shareholders at $90 and which is callable at $105. If the stock is called at some future date, the Australian shareholders will realize a gain of $15 on each share. Under U.S. tax concepts, the redemption of the preferred stock could be regarded in one of two ways. The first is that it is a sale of the stock and, under ordinary circumstances, the gain realized thereon would be taxable. The second possible view is that the redemption amounts to a distribution of dividends to the shareholders. The latter approach would be ordinarily applicable in situations where the preferred shareholders are also holders of common stock and the redemption is, in effect, a distribution of earnings and profits. It is assumed that the dividend concept is not applicable with respect to the Australian shareholders; however, if the amounts received were construed to be dividends, they would not be subject to U.S. tax under the rules enumerated above.

Treating the redemption as a sale of the stock would not ordinarily result in a U.S. tax upon the shareholders. To avoid the imposition of U.S. tax, it is necessary that the sale, or redemption, take place in Australia, and it seems fair to assume that this would occur in the natural course of events. The Australian shareholder would surrender his stock in Australia and should receive his payment therefor in that country. Inasmuch as stock is regarded as personal property under U.S. tax laws, the rules relating to taxation of such gains are contained in Sections 861 and 862 of the Internal Revenue Code.

Under these sections, gains from the sale of personal property without the United States are regarded as income from sources without the U.S. The purchase of stock in a U.S. corporation by an Australian resident individual or corporation and its subsequent sale, all of which occurs outside the U.S., is not subject to U.S. taxes.

In summary, the dividends which will be distributed by Northwest and the potential profits on the redemption of Northwest's stock are amounts which will be paid from income derived from sources within Australia and, consequently, will avoid the imposition of U.S. taxes when paid to non-resident alien individuals and foreign corporations not doing business in the United States. However, it is important that the redemption of the preferred stock actually take place in Australia so as to come within the source of income provisions described above.

Yours very truly,

Price Waterhouse & Co.

cc: R. Smith