SUBMISSION NO. 146

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Ian Dundas
Committee Secretary
House of Reps
Standing Committee on Agriculture, Fisheries and Forestry
Parliament House
Canberra ACT 2600

Dear Ian Re- **The Water Enquiry to Drought Proof Industry**

We have been looking at this subject for some time now and would like to offer the committee some of our findings for your consideration. In brief, we consider tapping a minor fraction of the huge volumes of northern waters flowing out to sea during the monsoon periods is a waste that can be captured and transferred down south by canal

While we are sure the concept is not new, we have set up liaisons with USA engineering groups who have beneficially constructed many similar concrete canals around the world. We have translated their expertise into a system to suit Australian conditions . Below are some facts and figures which we think support a case to partially drought proof Eastern Australia.

- Recent high average temperatures in Australia we believe are related to global warming. These higher temperatures tend to hold more water vapour in the atmosphere. This in conjunction with the El Nino has resulted in less rain.

- Climate modeling experts indicate global warming will increase precipitation in the northern regions of Australia, with compensating reductions in the south.

- Below are a couple of examples low salinity water flowing to sea from N/ Ql'd rivers. We have identified possible routes to transfer approx 25% of outgoing water down south to the Murray Darling (estimates from topographical maps.)

Source/ Annual avge flow to sea	Route/ Km straight line	Energy source
Route 1 (see sketch over page) Burdekin river /9000GL pa Main flow during wet	Clare Hughendon Barcaldine 1250 km Cunnamulla Bourke	Combination of new and existing gas lines, plus on line cogeneration & transmission cable
Route 2 (see sketch over page) Fitzroy R: 5500GL pa plus Burnett R: 1400Gl pa Total 7900GL pa Main flow in summer, but fairly even over the year	Rockhampton Bundaberg Gayndah Mundubbera 750km Chinchilla St George Bourke	Combination of existing and new gas lines plus on line cogeneration & Transmission cable

- With above N/Qld rivers in years of high flow, there are opportunities to temporarily store water in aquifers on route and pump out in years of low flow.

- Many inland cropping groups in this region indicate they should be able to pay a higher cost for water via these canals by installing low water usage irrigation systems. Current Government moves to partially acquire or buy out water rights, are creating uncertainty on future water allocations which in turn is holding back investment in these systems. (NB In many cases the introduction of eg large scale submerged dripper systems can cost more than their farm is worth.)

- USA canal schemes such as the Central Arizona Project (CAP), running through 550 km of arid desert country, loses 3% of water in transit during the summer and 0.5% in winter. This canal will be paid for over 50 year with higher than previous water charges. Over the last 20 years of operation with more certainty of water supply, Arizona agri-businesses and industry have grown and prospered.

- The cost of canal and pumping infrastructure for a 2000 Gl pa flow works out at about A$2million/km. Therefore the approx cost of constructing a canal from Rockhampton to Bourke (750 Km) would be about A$1.5 Billion. This roughly compares with the $700 Million the MDBC is estimating it would cost to buy out grower water rights to increase environmental river flows to 1500 GL pa.

- As can be seen from CAP attachments these concrete lined canals are designed to protect the environment and ecology. We thus see little problem from increased salinity, loss of species, or transfer of species from one region to another

The above is a preliminary outline of some of our plans to partially drought proof the South Eastern irrigated farmlands of Australia. (We have others involving vegetation to reduce water loss).We have assessed the potential to increase the annual flow either by diverting a greater percentage of flows to sea into canals or by tapping into other monsoonal flows. To progress to a greater stage of certainty would require a concerted spatial analysis of water catchment opportunities available, and they are many. Major Australian engineering groups such as Sinclair Knight Merz and SEMF Holdings have expressed interest in providing their services to independently evaluate further stages .

I look forward to comment and welcome the opportunity to answer the many questions on water rights, environment, and ability to finance that this proposal would question.

Yours truly,

T. Bowring

Terry Bowring
Director
10/4/03

The Physical System

The conveyance system incorporates the interconnected Hayden-Rhodes, Fannin-McFarland and Tucson aqueducts. These aqueducts consist of concrete-lined canals, inverted siphons, tunnels, pumping plants, and pipelines that extend the physical system through 336 miles of arid Sonoran desert.

There is little difference in these aqueducts except the number of features and their sizes. The aqueduct becomes smaller as water is delivered to users along the way. System capacity at the Colorado River is 3,000 cubic feet, or 22,500 gallons of water, per second. At its other end, the narrower Tucson Aqueduct has a capacity of only 200 cubic feet, or 1,500 gallons, per second.

Besides its major components, CAP has many other associated features. These include road bridges, wildlife crossings and overchutes and culverts that carry local storm runoff water over or under the canal.

Transmission lines and switchyards carry electric power to system features and earthen dikes paralleling the canal protect it and downstream areas from floods. The entire canal is fenced to protect the safety of people and wildlife.

Specific features such as fences, bridges, watering sites and road underpasses were built into the project to lessen its impact on wildlife. Revegetation around flood detention dikes also provide wildlife habitats.

Near Tucson, short sections of canal were placed below ground so animals could use existing washes as natural paths across the canal. In addition, a 4.25 square mile area surrounding the canal was purchased for a wildlife corridor and protected home for several rare or endangered plant and animal species.

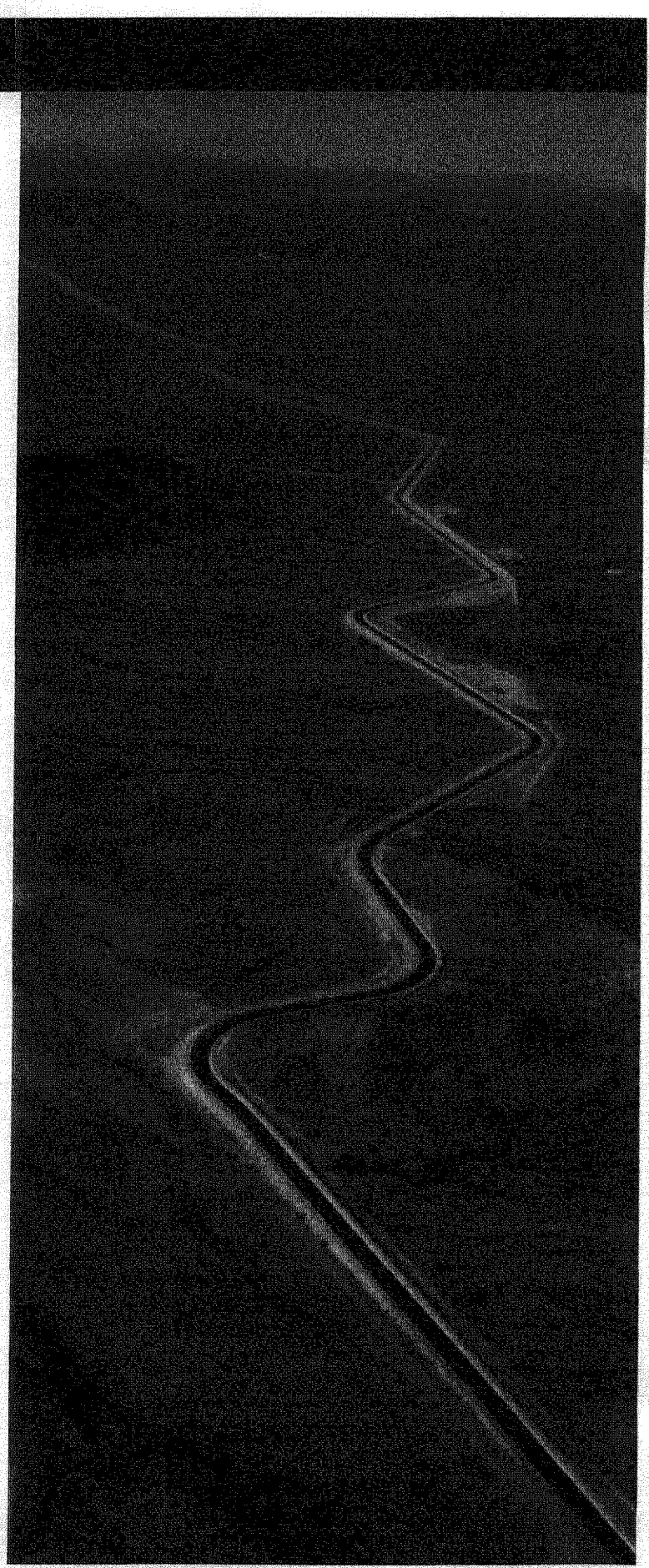

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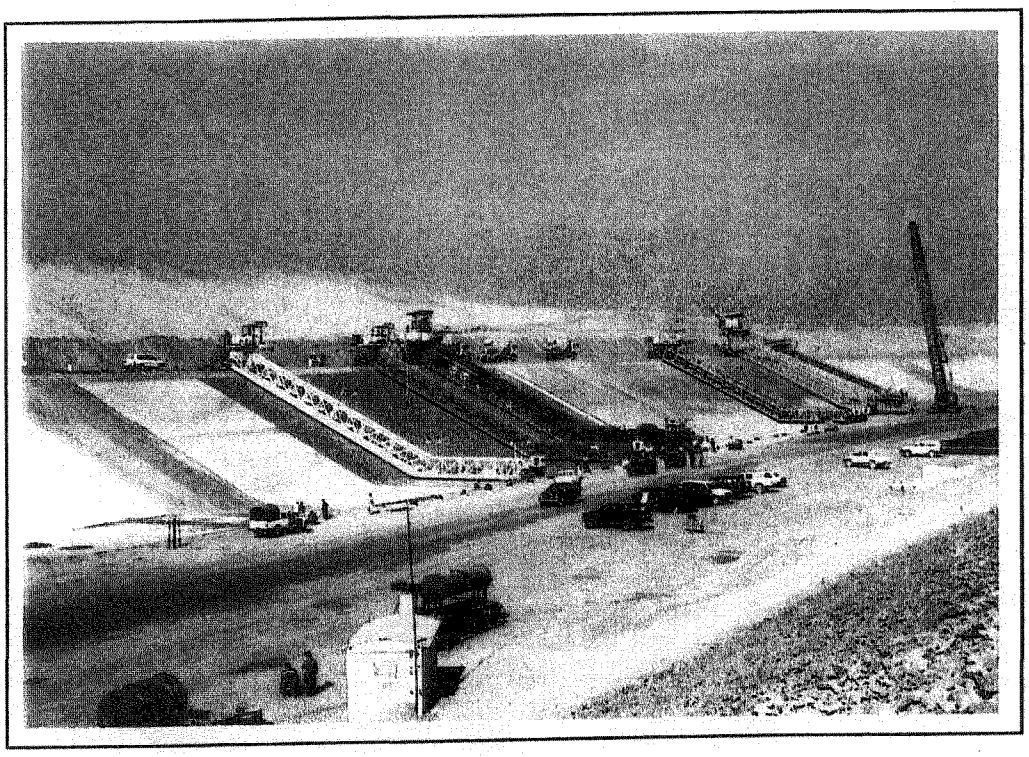
Photo Profile

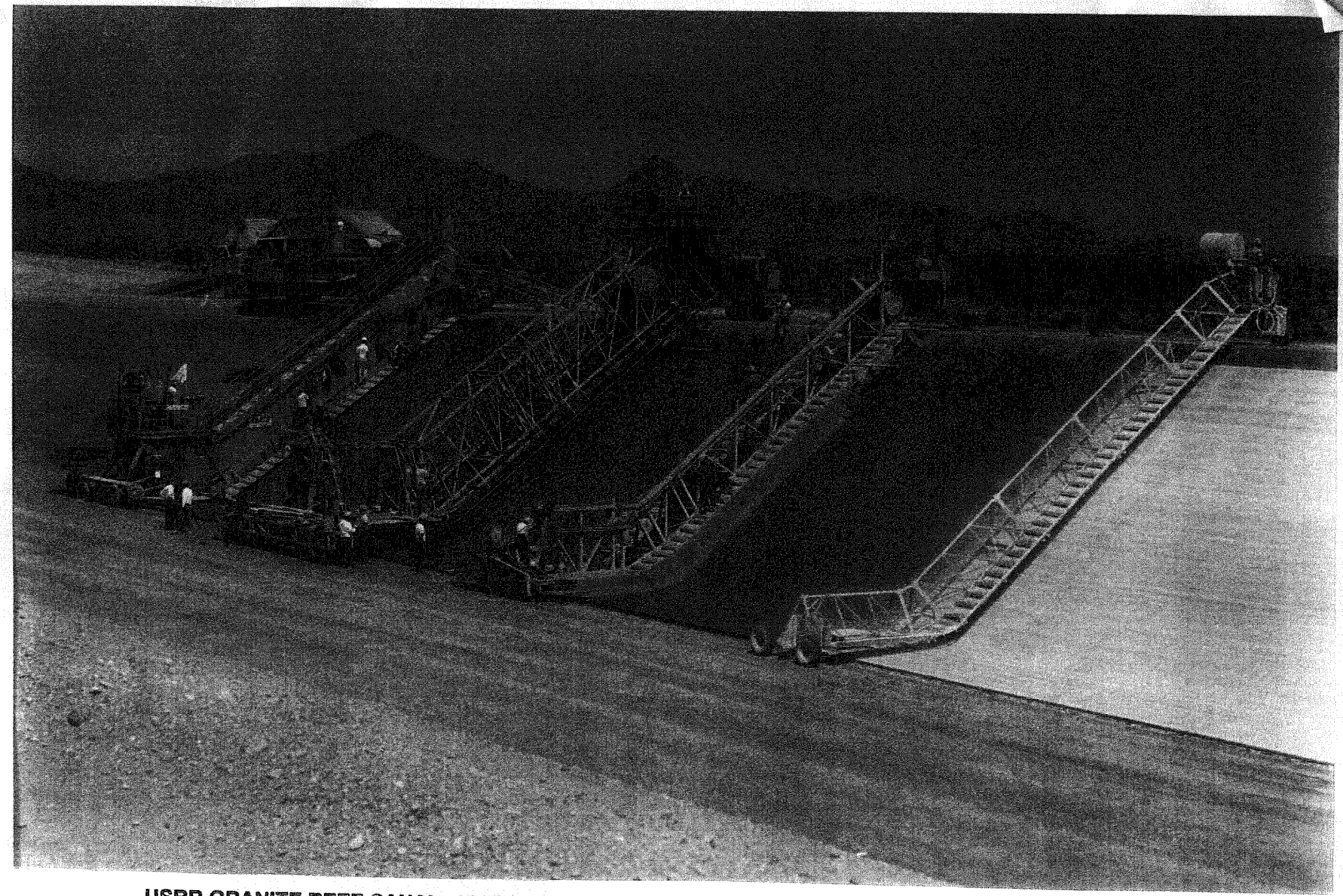
CONTRACTOR: GHAZI BAROTHA CONTRACTORS, J.V. / PAKISTAN
(IMPREGILO S.p.A., MILAN, ITALY - SPONSOR)

PROJECT: Ghazi Barotha Power Channel Project • 1998-99
Pakistan Water and Power Development Agency
52 Km (31 miles) long • 2:1 Slope • 104 M (341 feet) Across Top
• 58 M (190 feet) Bottom width • 11 M (36 feet) depth

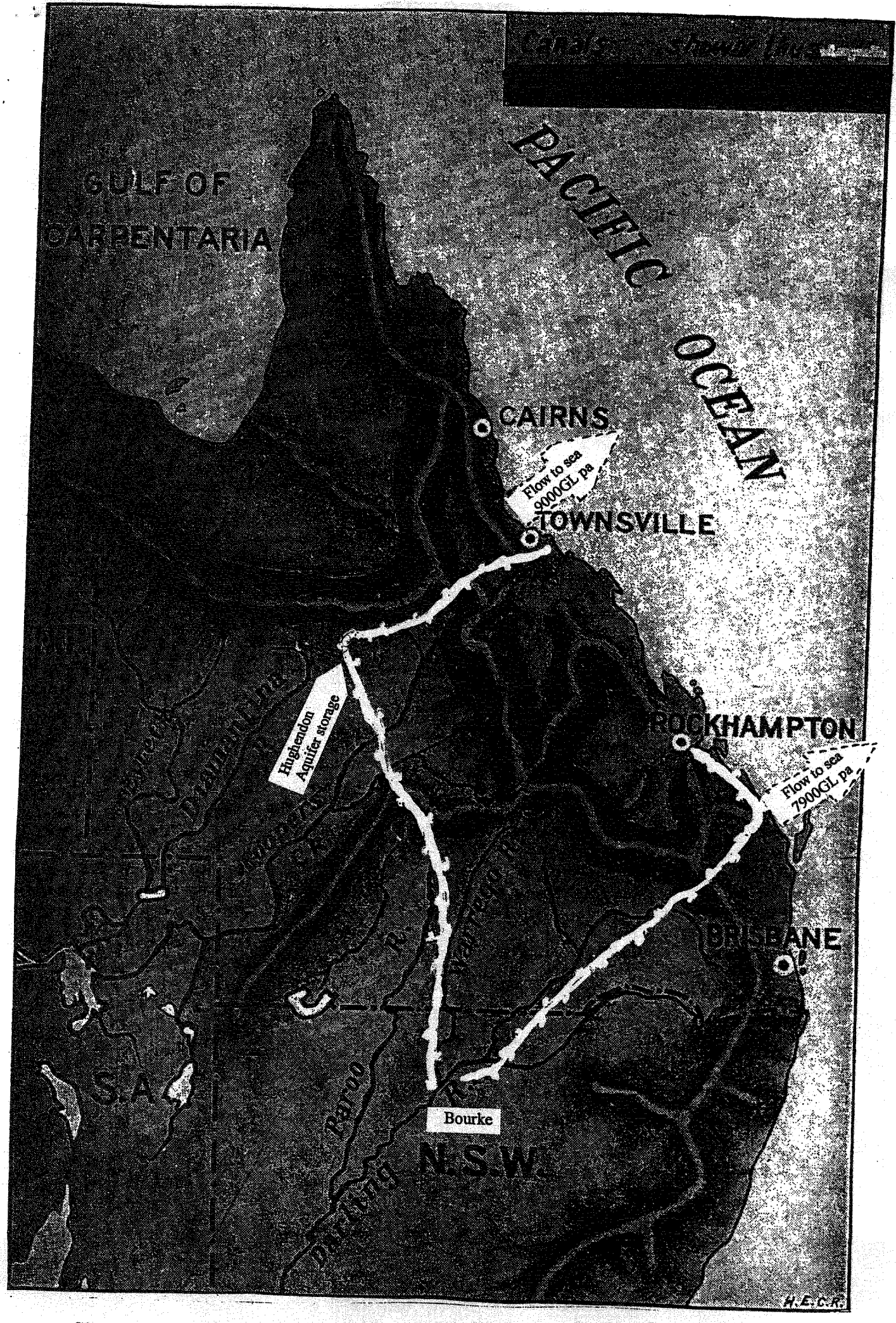
EQUIPMENT: Guntert & Zimmerman Flat and Half Span T3800, 4-Track Trimmer, Trimmer Discharge Conveyor, L3800 Filter Liner, L3800 Concrete Liner, FCJ3800 Cure Jumbo, Finish Jumbo and Mesh/Waterstop Jumbo. Downhill feed conveyor not shown.



- *Trimmer and Trimmer Discharge Conveyor (yellow)*
- *Mesh/Waterstop Jumbos (grey)*
- *Finish Jumbo (orange)*
- *Concrete Liner (red)*
- *Cure Jumbo (white)*



USBR GRANITE REEF CANAL- ARIZONA
KIEWIT CONSTRUCTION PAVING AT 400 YPH WITH RAHCO EQUIPMENT
NOTICE DRIVE OVER UNLOADER FEEDING AND PVC JOINTING



Showing an approximate direction of two canal options which would divert water from the mouths of two major rivers, inland, through gaps in the ranges.