

Submission No. 16
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SL

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The Committee
Murray-Darling Basin etc., etc—

SUBMISSION

Dear Members,

My submission is not as such directly concerned with the basin as such. Suffice it to say that what gives me the "Howard Beales" are the pushers and urgers, (who shall remain unnamed), who maintain that the problems with respect to water in the Murray-Darling Basin can be solved by the importation of large amounts of water from various sources. To them, such a solution is self-evident, and those who question such, do not respect their mothers.

To me such a position is, in fact, an illustration of the complete triumph of duplicity, cunning and ego over intelligence and integrity. Pumping of water through pipelines is not "Rocket Science". It is actually the converse of rocket science!

- It is the balance of two opposing parameters;
- (a) Capital costs per unit which decrease with quantity, and
 - (b) Pumping costs per unit which increase with quantity.

And, as such, a combined optimum (minimum) for any pipeline can be determined.

Using as a datum a pipeline of 1.00 metre internal diameter, Cement Lined, the design of long pipelines can be reduced to two simple tabulations, as below

OPTIMUM PUMPING			
NUMBER of PIPELINE BARRELS REQUIRED (to deliver 1 Gigalitre per annum)			
EXPENDITURE on PIPELINE (\$ per Km)	LENGTH of PIPELINE (Kilometres)		
	100	500	1000
\$1.00 Million	28	25	23
\$1.50 Million	23	22	20
\$2.00 Million	21	20	18

Example:-

Water Source to destination 750 Km
Water requirement:- 5.0 Gigalitres per Annum
Estimated Expenditure:- \$1.50 million/Km

OPTIMUM No of BARRELS:-

Now, would that not be spectacular, 105 x 1m Steel pipes coming over the hill!!!! The mind boggles!!!!

Surely this must illustrate, to all and sundry, that such a diversion of water would be costly in the extreme, as to be absurd!!

OPTIMUM PUMPING			
MINIMUM COST per Kilolitre			
EXPENDI- TURE on PIPE- LINE (\$ per Km)	LENGTH of PIPELINE (Kilometres)		
	100	500	1000
\$1.00 Mil- lion	\$0.312	\$1.798	\$4.339
\$1.50 Mil- lion	\$0.408	\$2.354	\$5.678
\$2.00 Mil- lion	\$0.494	\$2.849	\$6.873

Note:- Price is per Kilolitre

Price to overcome static head to be added!

For the example above

Minimum Pumping cost per Kilo-
litre

$\$4.02 < \text{Cost} < \4.20

For the record, the anticipated costs per Kilolitre of water are as indicated above. Very expensive water for agriculture!!!!

For those who wish to mire themselves in the mathematics, engineering and economics; these are all appended on an attached DVD. **Feel Free!** As compared with the pushers and urgers previously mentioned who are always extremely shy about specifics, all the various parameters and variables are made available!!!

May I close by quoting (very loosely) the poet Alexander Pope

“ A little learning is a dangerous thing,
Drink deep,
Or take not of that Pyrean spring”.

Ian Chalmers B.E., B.Econ.,

Grumpy Old Man!!!!