

1968

VICTORIA

REPORT

OF THE

VICTORIAN PIPELINES COMMISSION

FOR YEAR ENDING 30TH JUNE, 1968

PRESENTED TO BOTH HOUSES OF PARLIAMENT PURSUANT TO ACT No. 7477, S. 12(4).

Ordered by the Legislative Assembly to be printed, 31st October, 1968.

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COMMISSIONERS

A. F. Ronalds, M.C.E., M.I.E.Aust.	..	Chairman
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Sir Charles McGrath, O.B.E.,	Commissioner
A. B. Mellor, C.B.E.,	Commissioner
W. J. Price, I.S.O.	Commissioner

SENIOR OFFICERS

J. B. Mulvany, B.C.E., M.I.E.Aust.	..	Chief Engineer
S. C. Archer, B.Com., F.A.S.A., A.C.I.S.	..	Secretary



Threading a section of pipe through the steel casing bored under the Princes Highway near Flynn. The nylon casing insulators incorporate spacers to prevent the pipe coating from being damaged by the casing, and afford electrical insulation.

VICTORIAN PIPELINES COMMISSION

SECOND ANNUAL REPORT FOR YEAR ENDING 30TH JUNE, 1968

100 Exhibition-street,
Melbourne, 3000.
9th October, 1968.

The Hon. J. C. M. Balfour, M.L.A.,
Minister for Fuel and Power,
MELBOURNE.

SIR,

In accordance with Section 12 (3) of the *Victorian Pipelines Commission Act 1966* (Act No. 7477) we have pleasure in submitting to you the Second Annual Report of the Commission, for the year ended 30th June, 1968, accompanied by an audited Balance-sheet as at 30th June, 1968.

1. INTRODUCTION.

The dominant activities of the Commission throughout the year have been its functions concerning the introduction of natural gas in Victoria by March, 1969.

Concurrently, Hematite Petroleum Pty. Ltd. (a wholly owned subsidiary of Broken Hill Proprietary Company Ltd. and formerly Haematite Explorations Pty. Ltd.) and Esso Exploration Australia, Inc.—acting as partners and referred to as Hematite-Esso—have—

continued exploration on the continental shelf off the Gippsland coast. This has resulted in some evidence of natural gas in exploratory wells known as Tuna and Snapper, and an upgrading of reserves in the Barracouta and Marlin fields from 4.5 to 5.6 trillion cubic feet.

set the production platforms on the Barracouta and Marlin fields and commenced the production wells at Barracouta.



Ditching machines working in tandem near Buln Buln excavating the 7-foot deep trench after pipe stringing.

proceeded with the laying of the submerged and onshore lines between the Barracouta and Marlin fields and the treatment plant at Dutson (near Sale).

proceeded with the construction of the treatment plant at Dutson where the natural gas will be purified before delivery to the Commission.

Meanwhile the Gas and Fuel Corporation of Victoria, The Colonial Gas Association Ltd. and the Geelong Gas Company have been preparing for the introduction of natural gas in their respective reticulation areas—including the construction of additional distribution mains and preliminary work for the formidable task of converting over a million appliances to burn natural gas.

The principal activities on which the Commission has been engaged during the period under review have been—

construction of the 110 mile 30" diameter pipeline to convey gas from Dutson to Dandenong.

detailed planning and purchase of equipment for the metering and testing station at Dutson and for city gate delivery stations at Dandenong, Ringwood and Footscray.

planning of operational requirements.

tariff studies.

forward planning of future works.

2. NATURAL GAS PIPELINE FROM DUTSON TO DANDENONG.

The tenders received on 28th June, 1967, for the manufacture, internal lining and protective outer coating of the 110 miles of 30" pipes for the Dutson–Dandenong pipeline included alternative tenders for X52, X56 and X60 grades of steel. Following analysis of the tenders the following were accepted :—

(a) Supply of pipes—Grade X60

(i.e. minimum yield stress of 60,000 pounds per sq. inch)

Contract 1A—*Nippon Kokan Kabushiki Kaisha*
jointly with

Sumitomo Metal Industries Ltd.

for manufacture (in Japan) and supply of five miles of 40 ft. long bare pipes of 0.500" wall thickness and twenty miles of 40 ft. long bare pipes of 0.406" wall thickness.

Contract 1B—*Tubemakers of Australia Ltd.*

for manufacture and supply of 75 miles of 60 ft. long bare pipes of 0.406" wall thickness.

Contract 1C—*Humes Ltd.*

for manufacture and supply of ten miles of 40 ft. long bare pipes of 0.406" wall thickness.

(b) Lining and coating the pipes

Contract 2A—*Humes Ltd.*

for lining and coating the ten miles of 0.406" pipe manufactured under Contract 1C and for lining and coating 12½ miles of Japanese pipe manufactured under Contract 1A (one mile of 0.500" wall thickness and 11½ miles of 0.406" wall thickness).

Contract 2B—*Tubemakers of Australia Ltd.*

for lining and coating the 75 miles of 0.406" pipe manufactured under Contract 1B and for lining and coating 12½ miles of Japanese pipe manufactured under Contract 1A (four miles of 0.500" wall thickness and 8½ miles of 0.406" wall thickness).

The thicker walled pipes are for sections of the pipeline within or adjacent to existing or potential urban development—consistent with accepted world standards for such pipelines—and for a distance of 400 ft. at the Dutson end.

The pipeline is lined internally to minimize the occurrence of dust in the gas and to increase the flow capacity of the line.

The external protective coating system comprises the following materials : a synthetic, quick-drying primer ; plasticized coal tar enamel ; fibre glass (for reinforcing the enamel) ; an external tar-impregnated outer protective wrap, and a synthetic heat reflecting white paint.

The total outer covering is about 3/32" thick.

The external coating is to protect the steel pipe from chemical and electrochemical corrosion.

Protection against chemical corrosion—of which the most common type is oxidation, or rusting—is adequately provided by the high quality external coating.

Protection against electrochemical corrosion, better known as electrolysis, is vital. It is particularly complex in this pipeline in view of its proximity to the D.C. electric railway line from Dandenong to Traralgon, which results in stray D.C. electric current passing through the ground, causing a potentially corrosive condition.

While the external coating will provide substantial protection against this electrochemical corrosion from stray currents, further protection is provided by drainage bonds back to the railway substations, buried sacrificial anodes and impressed current cathodic protection.

Pipeline Construction

Tenders for the construction of the pipeline closed on 7th August, 1967. Thirteen tenders were received—three from companies located outside Australia (in England, Canada and France), one from an Australian company and nine from Australian companies in association with overseas companies.

The accepted tender was submitted by Snam Progetti Australia Pty. Ltd., a subsidiary of Snam Progetti S.p.A. of San Donato, Milan, Italy.

The pipeline is being laid on the route shown in the Commission's First Annual Report, within an 80 ft. wide easement acquired by the Commission, and with a minimum depth of 4 ft. of cover which will allow normal farming operations to continue on the easement after the pipeline has been laid.

The pipeline route includes four railway crossings (at each of which the pipeline is laid inside a steel sleeve) and numerous road and stream crossings, at each of which the pipe is laid beneath the bed of the stream. The largest stream crossing is the Latrobe River near Traralgon.

In accordance with standard world practice for pipelines of this type, the pipes are welded together on the surface and subsequently lowered into the trench, using a series of side-boom pipe layers. Welding in the trench is thereby limited to tie-ins, mostly at rail, stream and important road crossings.

Most of the pipeline route is through cleared farm land, generally undulating and with a maximum elevation of 835 ft. above sea level.

The construction contract includes taking delivery of the coated and lined pipes from the coating factories in Melbourne, installing nine main valve assemblies at intervals along the pipeline, installing the cathodic protection system and test points, installing pig traps (for removal of liquids and other foreign material from the pipeline before operation and for future cleaning of the pipeline) and providing facilities for hydrostatically testing the completed pipeline.

The contractor commenced field construction at the Dandenong end of the pipeline in February, 1968, and, by 30th June, had taken delivery of 71 miles of pipe, excavated 42 miles of trench and completed the laying and backfilling of 40 miles of the pipeline. In the initial stages of construction, progress was delayed because of faults detected in some of the overseas pipes ; during May and June progress was seriously handicapped by bad weather.

The principal measures being taken towards ensuring high quality of the completed pipeline are—

- hydrostatic testing of each pipe at the pipe manufacturers' works ;
- X-ray examination of every field weld ;
- hydrostatic testing of the completed pipeline.

The maximum operating pressure of the pipeline is 1,000 lb. per square inch.

3. METERING AND TESTING NATURAL GAS.

The Commission has accepted the suggestion of the distributing companies and the production partners that the necessary metering and testing station at Dutson be constructed, owned and operated by the Commission. At this station the Commission will have full facilities for measuring the quantity of gas delivered to the Commission's pipeline and for regular testing for compliance with the specified physical and chemical qualities.

The Commission's costs in connection with this measuring and testing on behalf of the distributors and producers will be covered by a separate charge from that for transmission of gas.



Hydraulically operated bending machine forming pipes to suit change of grade. All pipe bending was carried out in the field to the required angle at each location.

The city gate meter stations at Dandenong, Ringwood and Footscray, to permit the volumes delivered to the distribution companies to be measured, are now in process of being designed.

At the Dandenong city gate station the gas will pass through filtering equipment, meters and pressure regulators before delivery into the distribution system of the Gas and Fuel Corporation of Victoria. This city gate station is on an area of approximately ten acres purchased by the Commission.

The Ringwood city gate station will enable the Commission to deliver metered gas to The Colonial Gas Association's eastern suburban franchise area, and the Footscray station to its western suburban area. By arrangement between the Commission and the Gas and Fuel Corporation of Victoria, both stations will be supplied, for some time at least, via the Corporation's metropolitan ring main.

4. OPERATIONS.

The Commission's Dutson-Dandenong pipeline is expected to be the first natural gas transmission pipeline in operation in Australia.

During the period under review the Commission's Operations Manager spent six weeks in the U.S.A. and Canada in discussions with various companies on their pipeline operations. The Commission also engaged the services of Mr. D. B. Sprow, recently Vice-President of Florida Gas Transmission Company, as operations consultant.

These discussions, and Mr. Sprow's advice, have enabled the Commission to formulate policies for the engagement and training of operations staff.

The Commission's main operational centre will be on the same property as the Dandenong city gate station.

5. TARIFF STUDIES.

In August, 1967, the Commission selected H. Zinder and Associates, Inc., of Washington, D.C., U.S.A., as consultants to advise on tariff policies, charges and related matters. After studying material sent to him by the Commission, Mr. F. P. Saponaro, Executive Vice-President of the Company, was in Melbourne from 13th October to 26 October, 1967, for consultation with the Commission. Zinder and Associates presented in December, 1967, their initial report.

Following the preparation of further information by the Commission, Mr. Saponaro again visited Melbourne from 16th February to 3rd March, 1968. The ensuing discussions and further studies resulted in a more detailed report from Zinder and Associates in May, 1968. This enabled the Commission to reach conclusions on all major aspects of its tariff policy.

A statement to customers, setting out the Commission's conclusions as to its charges for transmission of natural gas and other important provisions of its proposed transportation contracts, was in course of preparation at the end of the period under review. The statement was issued to the several distributors and Hematite-Esso shortly after the close of the financial year. At the date of this Annual Report the Commission is considering the customers' comments on the Commission's proposals.

6. FORWARD PLANNING.

The Geelong Gas Company has had a series of discussions with Hematite-Esso, concerning natural gas for large industries in Geelong, but the stage has not yet been reached at which the Commission can be advised of the total volumes of gas expected to be required in Geelong. Nevertheless, the Commission has completed a preliminary feasibility study on transmission of gas to Geelong, based on assumed total volumes for industrial, commercial and domestic use.

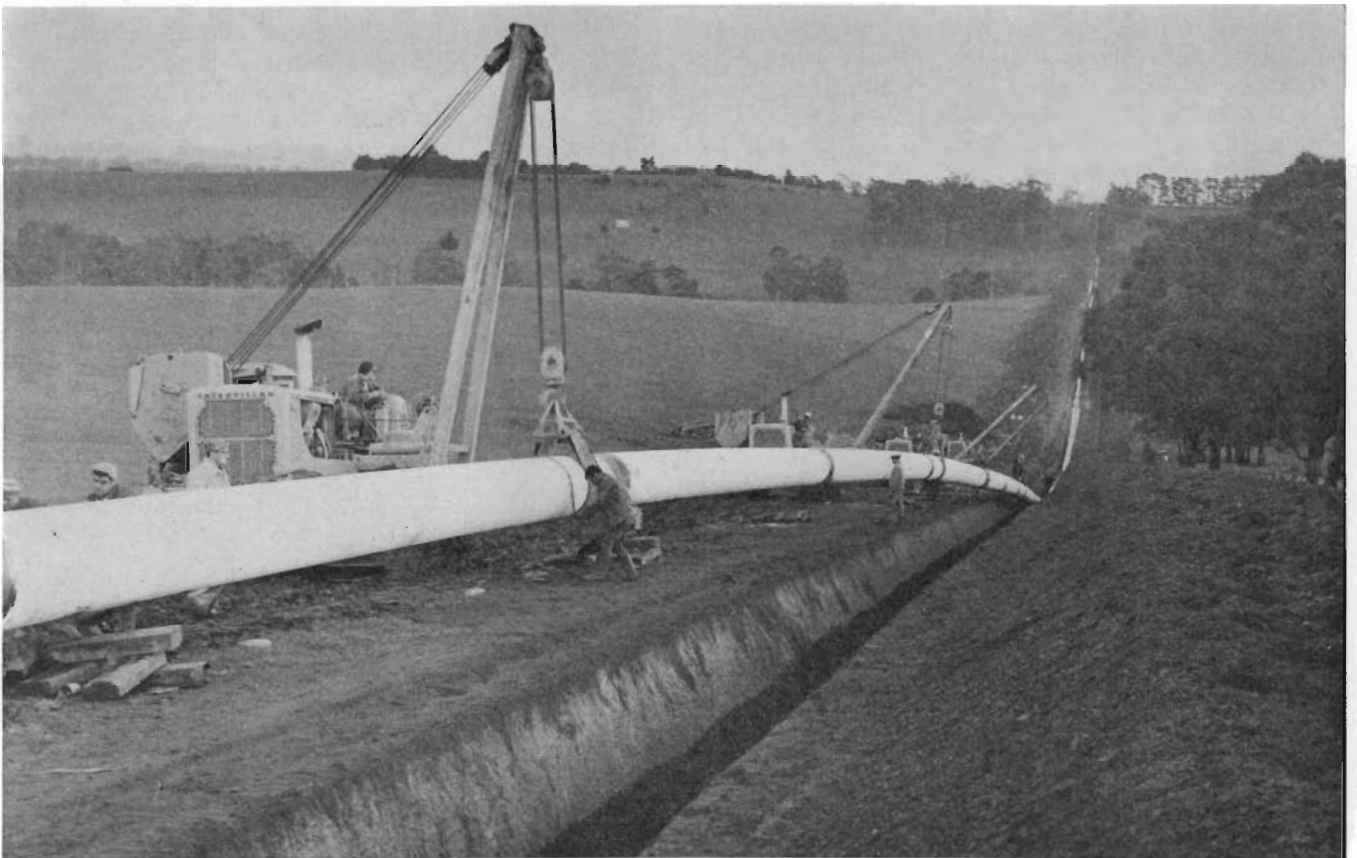
This study includes consideration of alternative means of transporting the gas from Dandenong to the western side of Melbourne which, in turn, involves consideration of the period of time in which it would be practicable and economical to supply the western metropolitan area of the The Colonial Gas Association Ltd. and Geelong via the metropolitan ring main of the Gas and Fuel Corporation of Victoria.

A possible pipeline system to serve the Commission's customers in the Port Phillip area is shown on the accompanying plan. If this system is adopted following further studies, the various components (apart from the Dutson-Dandenong pipeline already under construction) would be constructed as circumstances justified.

7. GENERAL ADMINISTRATION.

Staff, at 30th June, 1968, comprised the Secretary, Chief Engineer and eleven other officers.

A Market Survey initiated by the Ministry of Fuel and Power shortly after the formation of the Commission, and referred to in the Annual Report to June, 1967, was carried out by Kinnaird Hill deRohan and Young (in association with Battelle Memorial Institute of U.S.A. and Stephen A. Bergman of U.S.A.). This survey assessed Victoria's present energy usage and



Four sideboom pipe layers lowering the welded pipeline into the excavated trench near Drouin.

forecast total energy usage over the next twenty years, estimating the different forms of energy which will be used. The survey was carried out for the Commission in association with the Ministry of Fuel and Power, the State Electricity Commission of Victoria and the Gas and Fuel Corporation of Victoria, and at the cost of these three utilities. A preliminary report of considerable interest is now under study by all concerned.

The Commission's insurance brokers are studying the insurance of the pipeline system under operating conditions; Australian and overseas insurance companies have expressed interest in this matter.

Zanthus Films were commissioned to make a twenty minute color documentary film of the construction of the Dutson-Dandenong pipeline, and by 30th June had completed filming of some major features of the project.

8. FINANCE.

The Commission was authorized to borrow \$13,900,000 during 1967-68 and loans totalling that amount were arranged. All are at an interest rate of 5.875 per cent. At 30th June, 1968, the loan liability of the Commission was \$7,000,000.

The Commission's enabling Act requires the preparation of a Profit and Loss Account and a Balance-sheet at the end of each financial year. All Commission expenditure during the period of construction of the Dutson-Dandenong pipeline is capitalized, so there have been no transactions of a Profit and Loss Account nature.

The audited Balance-sheet is attached to this report.

9. VICE-REGAL.

On 6th June, 1968, His Excellency the Governor of Victoria, Sir Rohan Delacombe, K.C.M.G., K.B.E., C.B., D.S.O., K.St.J., and the Minister for Fuel and Power, accompanied by the Commissioners, carried out an inspection of pipeline construction works.

10. COMMISSIONERS.

His fellow Commissioners and Commission staff were gratified to learn from the 1968 New Year's Honors List, that Her Majesty the Queen had been graciously pleased to create as Knight Bachelor, Commissioner C. G. McGrath, O.B.E.

11. ACKNOWLEDGEMENTS.

The Commission records its appreciation of the assistance received from yourself, as Minister for Fuel and Power, and the staff of the Ministry. It also has been helped greatly throughout the year by the splendid work of its small staff. This has enabled several important tasks to be brought to an advanced stage and involved for the staff a heavy burden of work in the initial development of the Commission's activities. The Commission is also grateful for the work of its consultants—Gas and Fuel Corporation of Victoria (engineering services); H. Zinder and Associates, Inc., of Washington, D.C., U.S.A. (tariffs); Mr. D. B. Sprow of Florida, U.S.A. (operations); and valuable advice on metallurgical matters from Mr. I. J. Ferris, of Defence Standards Laboratories.

A. F. RONALDS, Chairman
 E. W. McCANN, Commissioner
 C. G. McGRATH, Commissioner
 A. B. MELLOR, Commissioner
 W. J. PRICE Commissioner

S. C. ARCHER,
 Secretary.

VICTORIAN PIPELINES COMMISSION.

		1968	1967
	\$	\$	\$
<i>Current Liabilities—</i>			
Bank Overdraft	45,148.69		14,910.25
Tender and Security Deposits	26,608.00		9,000.00
Sundry Creditors and Accruals	3,172,666.26		..
		3,244,422.95	
<i>Fixed Liabilities—</i>			
Loans		7,000,000.00	..
		10,244,422.95	23,910.25

Note—

Contingent liabilities represented by commitments for capital expenditure under contracts for the manufacture, testing, &c., of approximately 110 miles of 30 inch diameter welded steel pipe and the construction of the pipeline approximated \$5,760,768.

Certain of the pipes manufactured overseas were found, on delivery, to be not in accordance with specification requirements, resulting in additional cost in the construction of the pipeline. The amount involved cannot be determined until claims from the construction contractor have been assessed. The extent of the liability of the pipe manufacturer for the additional cost, in terms of the relevant contract conditions, is currently the subject of consideration.

Certified correct in accordance with the provisions of Section 12 (3) (a) of the *Victorian Pipelines Commission Act 1966*.

A. F. Ronalds, Chairman
W. J. Price, Commissioner
C. G. McGrath, Commissioner
E. W. McCann, Commissioner

16th October, 1968.

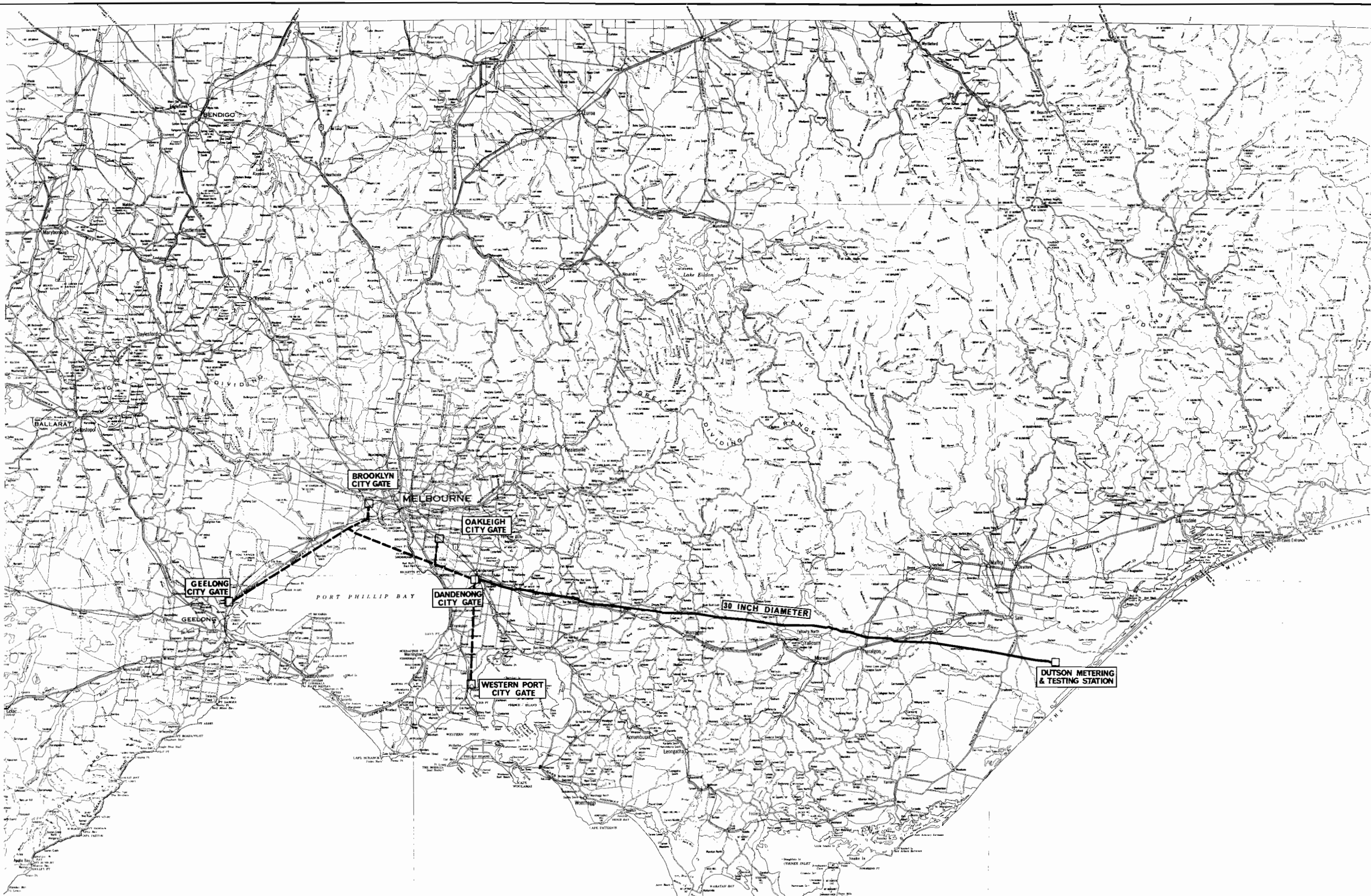
BALANCE-SHEET AS AT 30TH JUNE, 1968.

		1968	1967
	\$	\$	\$
<i>Current Assets—</i>			
Cash on hand	102.94		20.00
Bank Account—Deposits Held	26,608.00		..
Short Term Investments	230,000.00		..
Sundry Debtors and Accruals	50,932.37		..
Stocks	250,638.00		..
		558,326.31	
<i>Fixed Assets at Cost—</i>			
Freehold Land	72,687.85		..
Capital Works in progress	8,910,960.26		..
Furniture and Fittings, &c.	26,012.80		2,267.57
Office Machines	4,144.85		372.00
Plant	149.50		..
Motor Vehicles	7,208.45		3,741.70
Easements, Rights of Way	53,013.66		..
		9,074,177.37	
<i>Intangible Assets—</i>			
Preliminary Expenses		611,919.27	17,508.98
		10,244,422.95	23,910.25

The books and accounts of the Victorian Pipelines Commission for the year ended 30th June, 1968, have been audited by an officer acting under my direction. As all expenditure of the Commission during this period was capitalized, there were no transactions of a Profit and Loss Account nature.

In my opinion, the above Balance-sheet, read in conjunction with the Note thereto, is properly drawn up so as to show a true and fair view of the affairs of the Commission as at 30th June, 1968.

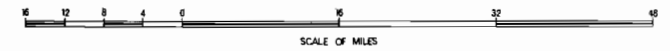
A. J. A. Gardner,
Auditor-General of Victoria
17th October, 1968



VICTORIAN PIPELINES COMMISSION

SYSTEM MAP
OF TRANSMISSION PIPELINES

1968



- PIPELINES UNDER CONSTRUCTION
- - - PIPELINES UNDER CONSIDERATION