

CATALOGUE OF THE
PETROLEUM DATA
PACKAGE
KINGDOM OF TONGA

SOPAC

South Pacific Applied
Geoscience Commission

Catalogue of the Petroleum Data Package Kingdom of Tonga

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SOPAC Miscellaneous Report 170

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Ministry of Lands,
Surveys and Natural Resources
Nukualofa, Kingdom of Tonga

South Pacific Applied
Geoscience Commission
(SOPAC), Suva, Fiji

Australian Geological Survey
Organisation, Canberra,
Australia

1. **The Kingdom of Tonga Petroleum Data Package**

The aim of the **Kingdom of Tonga Petroleum Data Package** is to provide all the data and information necessary to carry out a full evaluation of the petroleum potential of the Kingdom of Tonga and as such should be of interest to oil companies, consultants, geological agencies and research institutions.

The data is kept updated as new survey data and reports become available.

2. **About This Catalogue**

This catalogue provides a detailed listing of the contents of the **Kingdom of Tonga Petroleum Data Package**.

An order form is included by which the data package may be ordered in part or in its entirety. Costs of the data package are on reproduction plus shipping basis only and are therefore kept low.

All orders are to be pre-paid before shipping.

For further information and orders contact:

SOPAC Petroleum Data Bank
Australian Geological Survey Organisation
GPO Box 378
Canberra ACT 2601
Australia

Telephone: (02) 6249 9475

Fax: (02) 6249 9980

E-Mail: pbutler@agso.gov.au

For further information relating to petroleum exploration and production licensing, enquires should be directed to:

The Permanent Secretary
Ministry of Lands, Survey and Natural Resources
P.O. Box 5
Nuku'alofa
Kingdom of Tonga

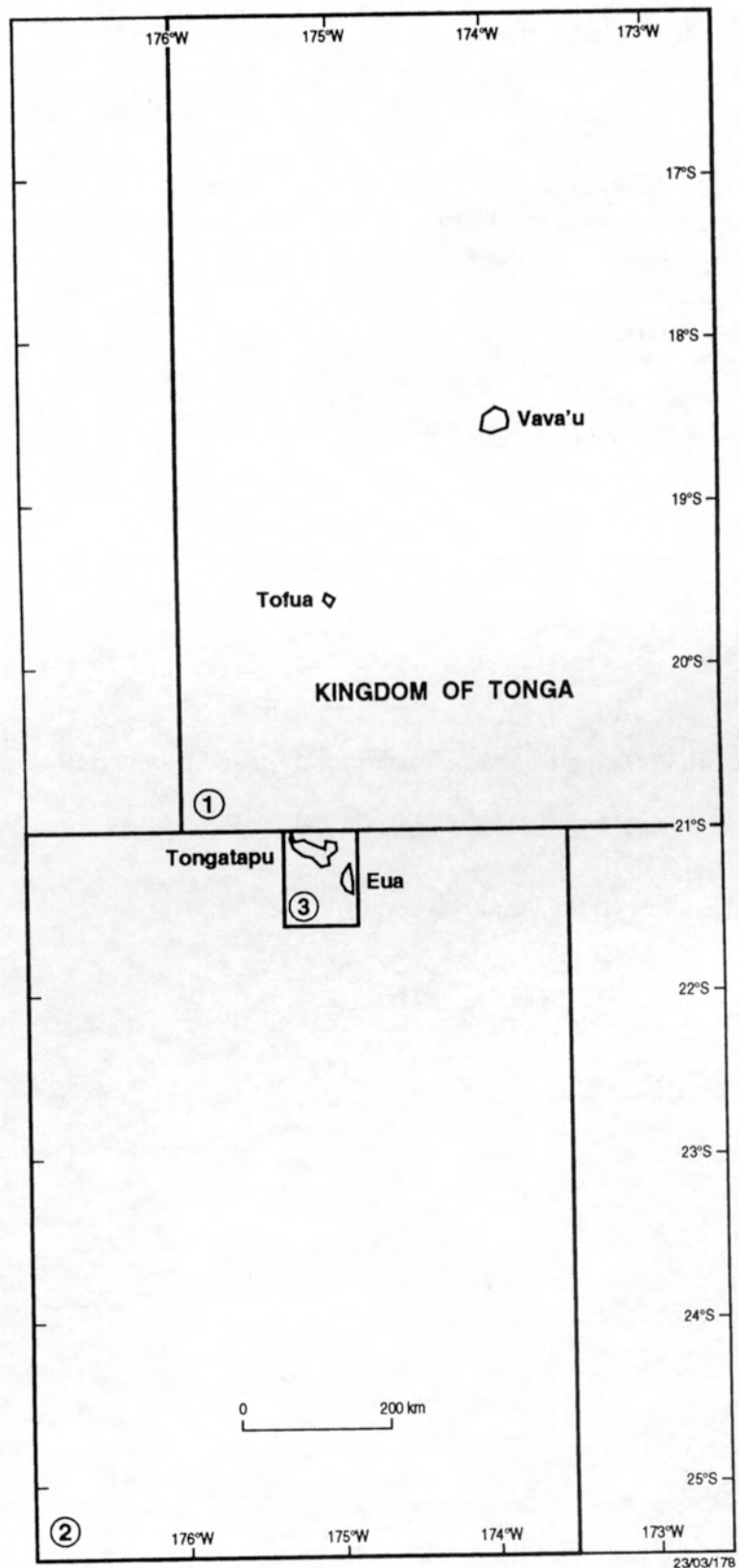
Telephone: (676) 23210

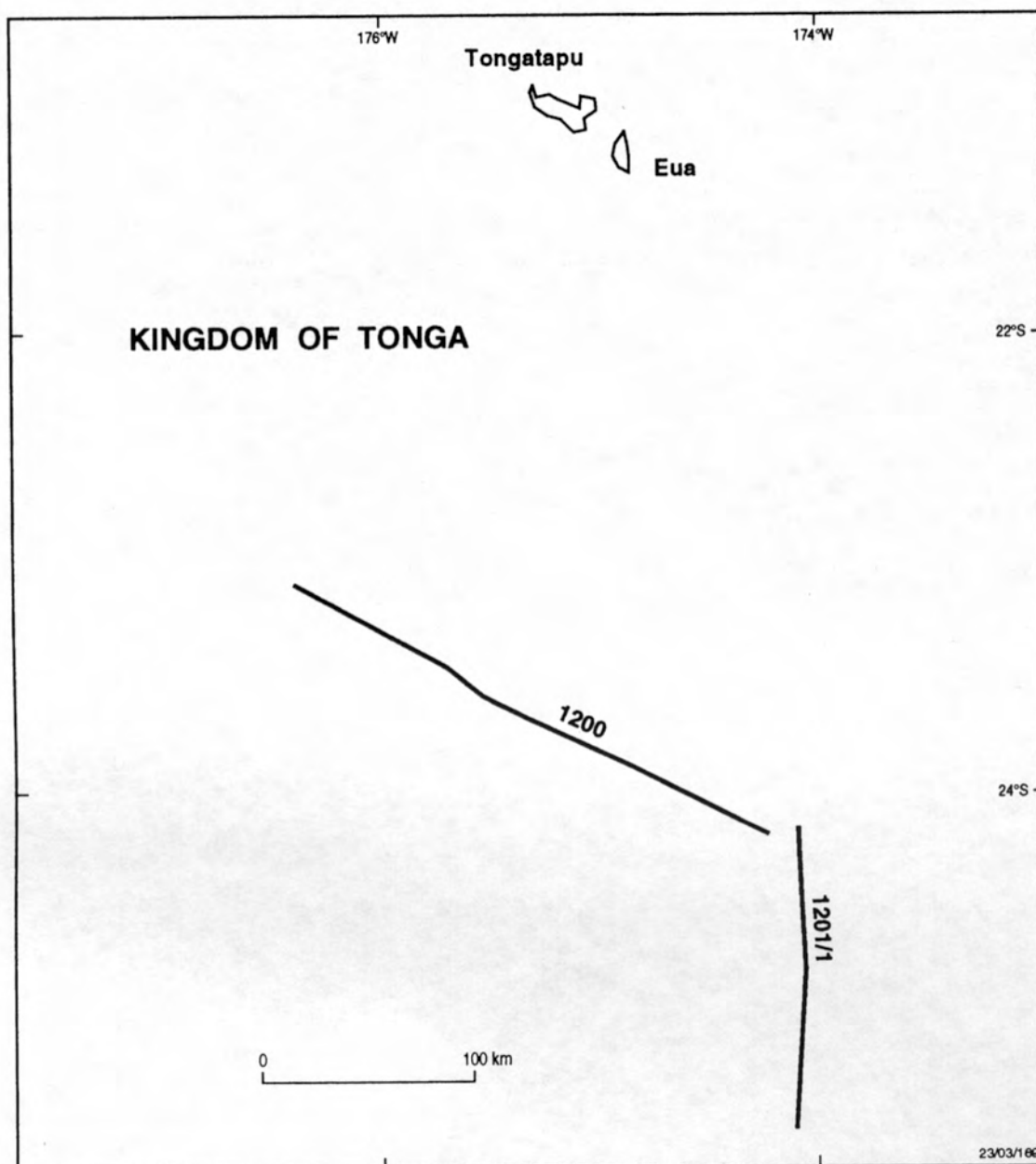
Fax: (676) 23216

3. Seismic Data and Maps

3.1 Seismic Line Location Maps

			Cost (paper)
Sheet 1	North Tonga Ridge	Scale 1:500,000	\$10.00
Sheet 2	South Tonga Ridge	Scale 1:500,000	\$10.00
Sheet 3	Tongatapu-Eua	Scale 1:100,000	\$20.00





Acquisition Parameters

Energy Source:	Tuned 1200 cubic inch air gun array
Receiver:	28 channel, Seismic engineering streamer
Shotpoint interval:	50 metres
Active cable length:	2800 metres
Sample rate:	4 msec
Record Length:	Generally 6 seconds
Bathymetry:	Simrad echo sounder systems
Gravity:	Bell Aerosystems gravimeter
Magnetics:	Varion proton magnetometer
Navigation:	TRANSIT Satellite navigation

Map

Trackline

Scale 1:2,500,000

Cost (paper)

\$15.00

Digital Data

Seismic Tapes

Line No

1200.1

Tapes/Line

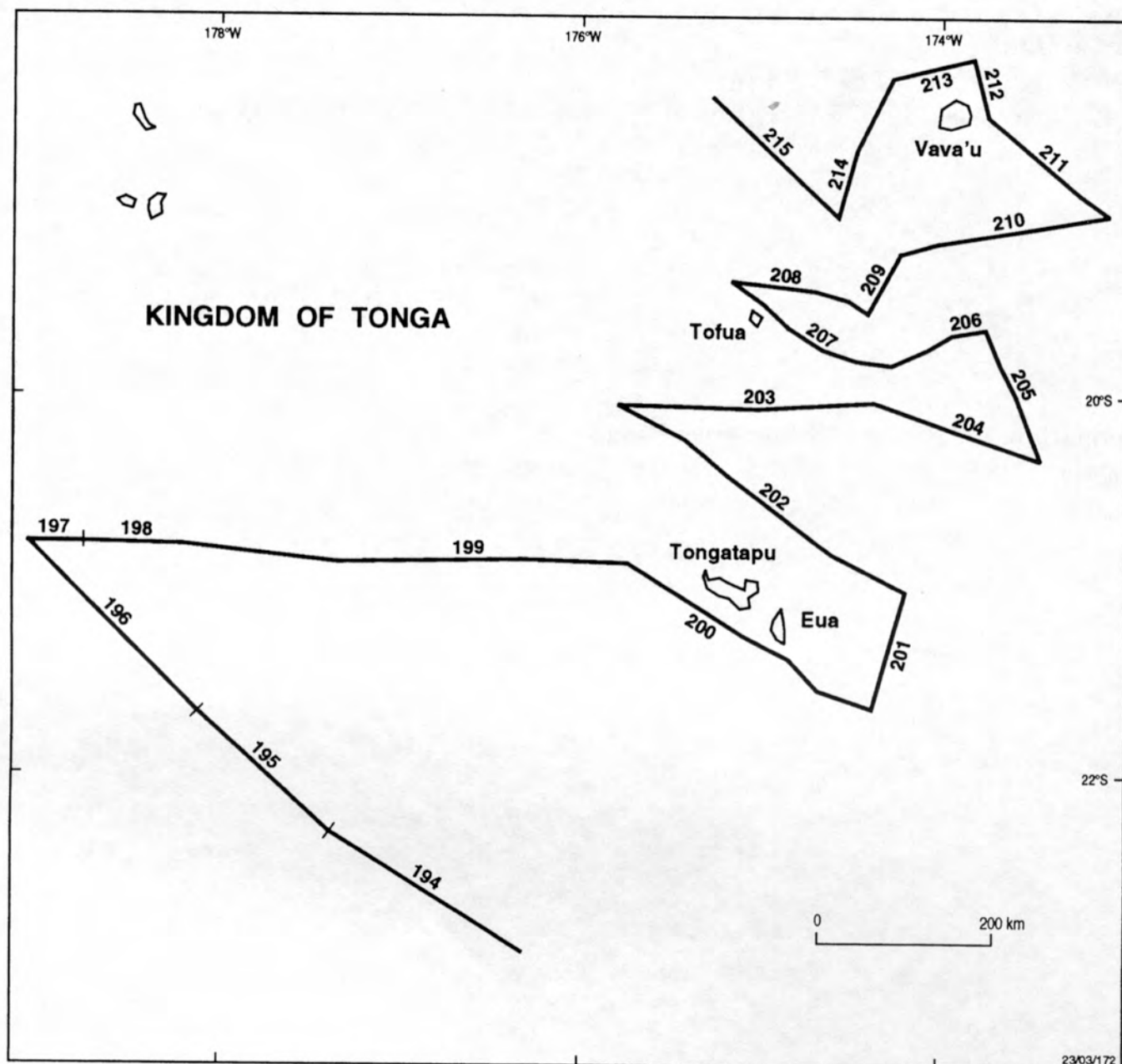
7

Navigation, Gravity and Magnetics Data

1600 bpi, EBCDIC coded, 80 characters by 20 records per block.

1 tape





Acquisition Parameters

Energy source:	4 air guns with debubblers at 500 psi
Field recording system:	DFS 4
Recording filter:	9 - 50 Hz
Spread length:	1320 - 2970 feet
Cable depth:	44 feet
Air gun depth:	35 feet
Trace spacing:	330 feet
Geophone array:	64 / trace
Shot interval:	12 sec
Vessel speed:	8 knots
Record length:	6 sec

Processing Parameters

Datum:	Sea level
Water velocity:	5000 feet/sec
Trace mix:	20 - 100 - 20
Gain:	6 DB
Filter:	9 - 45 Hz

Map

Trackline

Scale 1:2,500,000

Cost (paper)

\$30.00

Digital Data

Seismic Tapes - 1 " TIAC Format

Tapes/Line	Line No	Tapes/Line	Line No	Tapes/Line	Line No
3	72-194	4	72-202	4	72-210
3	72-195	3	72-203	2	72-211
3	72-196	2	72-204	1	72-212
1	72-197	2	72-205	1	72-213
3	72-198	2	72-206	2	72-214
3	72-199	2	72-207	2	72-215
3	72-200	2	72-208		
2	72-201	1	72-209		

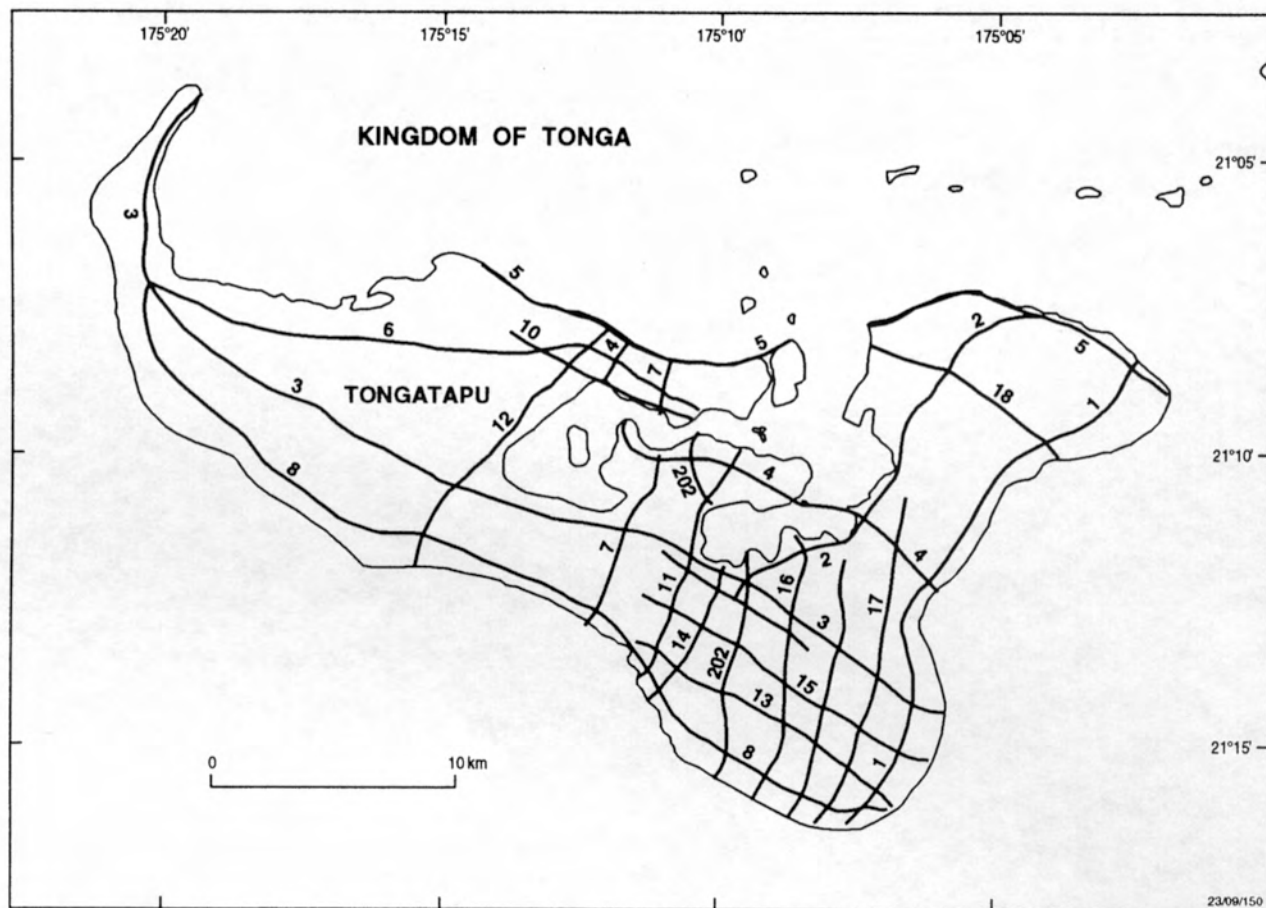
Navigation, Gravity and Magnetics Data

1600 bpi, 9 Track, EBCDIC Coded, 80 characters by 30 records per block, UKOOA Format

1 tape



3.4 Webb Resources 1977 Land Survey - Tongatapu



Map

Trackline

Scale 1:50,000

Cost (paper)

\$25.00

Digital Data

Seismic Tapes - SEG B 800 bpi

Tapes/Line	Line No	Tapes/Line	Line No	Tapes/Line	Line No
8	1	3*	6	9	16
4	2	3*	7	1	19
15	3	8*	8	7	202
6	4	4	9		
7	5	1*	10		

Note:

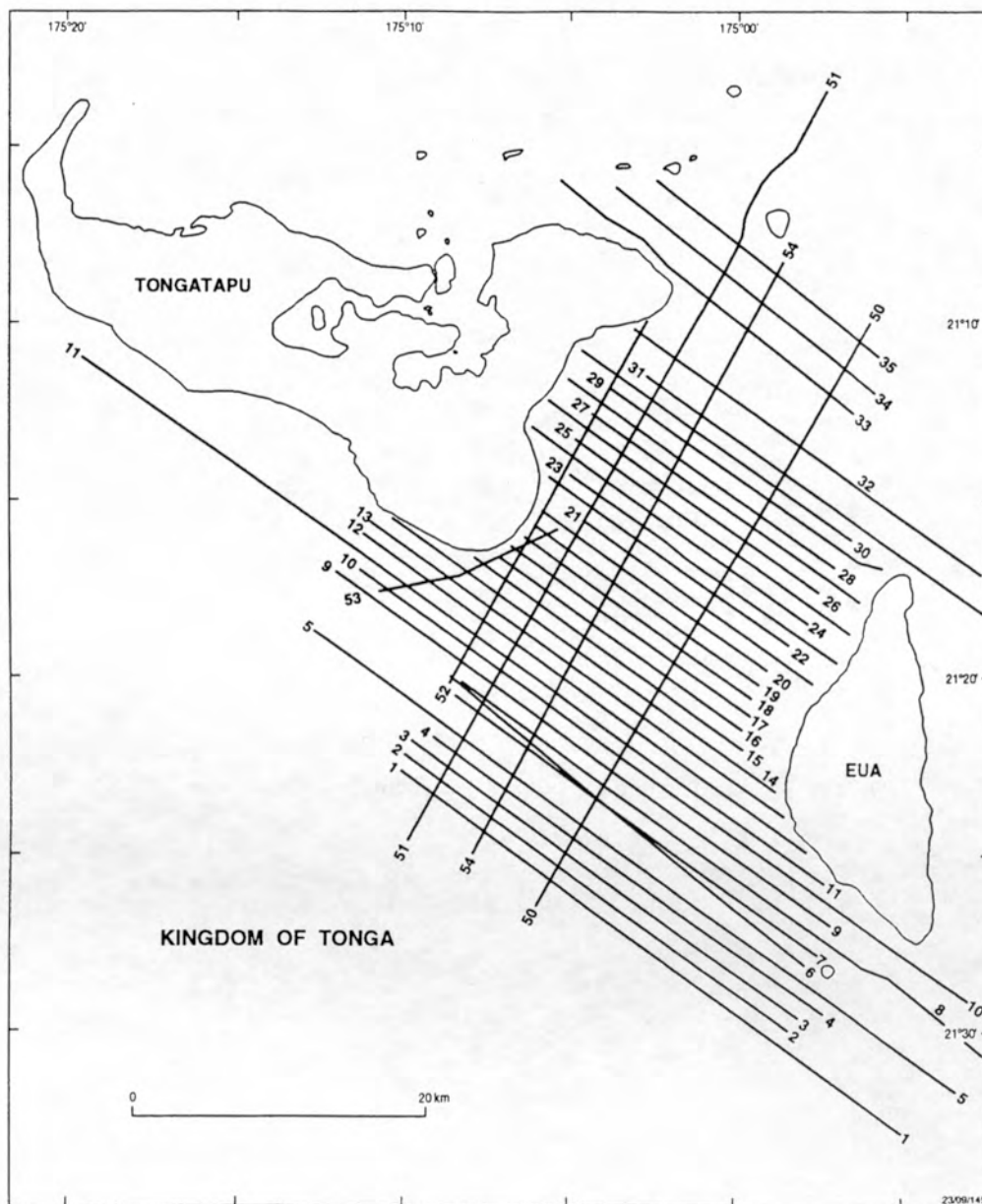
Lines marked * include correlated tapes

Note:

Refraction tapes are available for selected lines

Raw final stack and migration tapes available for selected lines.





Acquisition Parameters

Energy source:	Aquapulse
Field recording system:	LRS 888 SEG C
Recording filter:	out-124 Hz
Spread length:	2515 feet
Cable depth:	35 feet
Gun depth:	25 feet
Group interval:	110 feet
Shot point interval:	110 feet
Pop interval:	55 feet
Record length:	4 sec
Sample rate:	2ms

Map

Trackline (shotpoint)

Scale 1:50,000

Cost (paper)

\$25.00

Digital Data

Seismic Tapes - SEG C 1600 bpi

Tapes/Line	Line No	Tapes/Line	Line No	Tapes/Line	Line No
32	1	18	15* #	18	29
25	2#	16	16#	18	30#
25	3	16	17#	24	31
28	4	16	18#	26	32
42	5	16	19#	21	33
24	6	16	20#	16	34
24	7#	16	21#	16	35
37	8#	16	22#	1	36
32	9#	17	23#	36	50#
42	10#	18	24#	45	51#
50	11#	18	25#	25	52#
29	12#	20	26#	11	53#
29	13#	18	27#	35	54#
25	14#	18	28#		

Note:

* available at 6250 bpi

available as OUT-OUT Stack, SEG Y Format

2 tapes

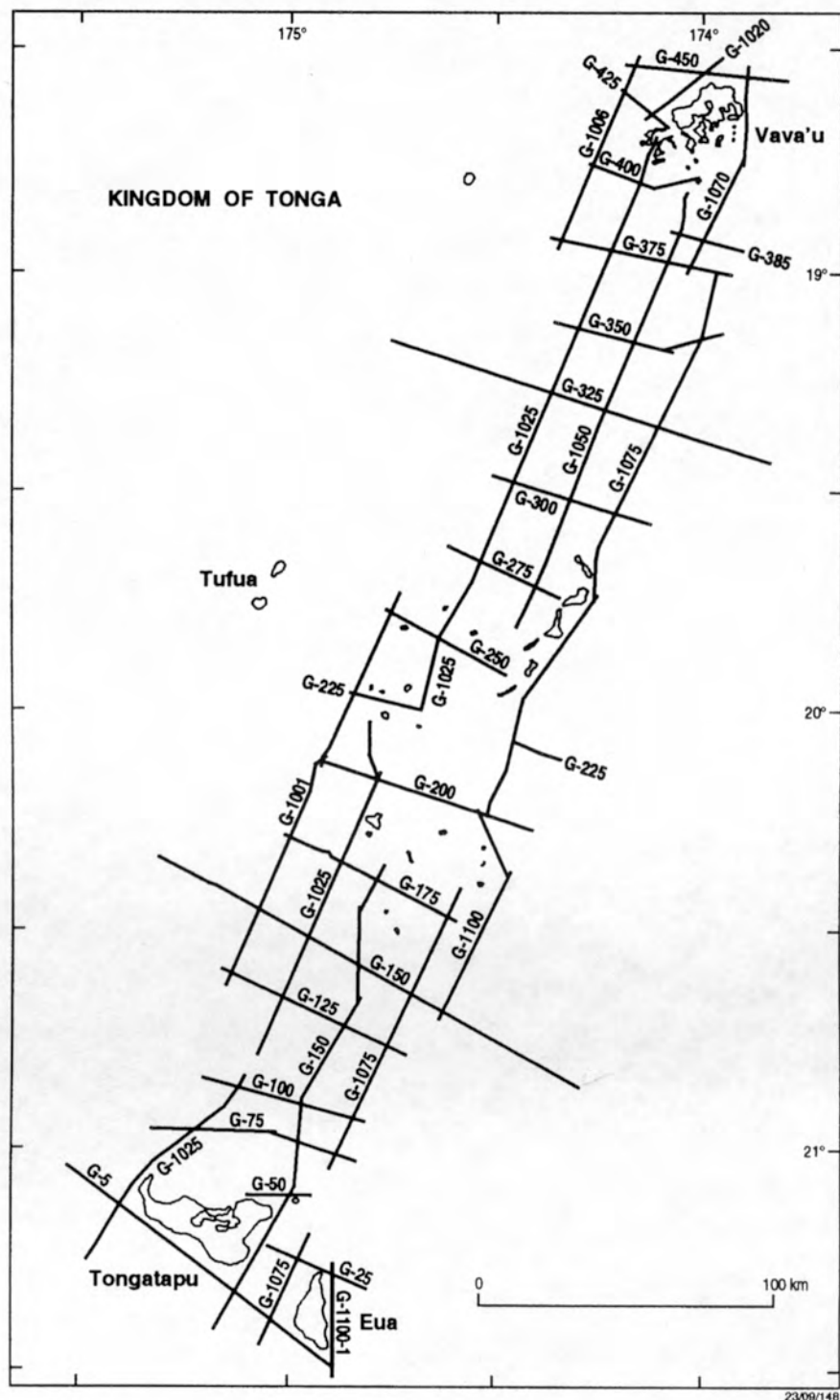
Navigation, Gravity and Magnetics Data.

1600 bpi, EBCDIC Coded

1 tape



3.6 Shell Internationale Petroleum 1970 Survey



Acquisition Parameters

Seismic data:	Digital seismic data tape format - 1 inch, TIAC, 556 bpi, 21 track
Energy source:	Tuned 860 cubic inch air gun array
Receiver:	48 channel, 24 fold, Seismic engineering streamer
Shotpoint interval:	50 metres
Active cable length:	2400 metres
Sample rate:	4 msec
Near trace offset:	300 - 330 metres
Record length:	Generally 5 seconds
Navigation:	Shoran, relying on land based radio triangulation fixes.

Seismic sections

Tapes/Line	Line No
20	G-150
7	G-225
5	G-250
2	G-275
4	G-300
24	G-325
4	G-350
5	G-375
5	G-385
2	G-400

Reprocessed

Cost (paper)
\$30.00
\$15.00
\$10.00
\$10.00
\$15.00
\$50.00
\$15.00
\$15.00
\$10.00
\$10.00

Tapes/Line

Line No
G-425
G-450
G-1001
G-1006
G-1020
G-1025
G-1050
G-1070
G-1075
G-1100

Cost (paper)

\$10.00
\$15.00
\$40.00
\$20.00
\$10.00
\$50.00
\$60.00
\$30.00
\$50.00
\$20.00

Note:

Tapes/Line is a guide only as some tapes may contain more than one line.

Cost (paper) does not include digital data.

Map

Trackline

Scale 1:250,000

Cost (paper)

\$20.00

Digital Data**Gravity and Magnetics**

1600 bpi, EBCDIC Coded, 80 characters by 40 records per block.

1 tape

Corrected Gravity and Magnetics.

1600 bpi, Binary Format (IBM Exponent or Hexidecimal)

1 tape

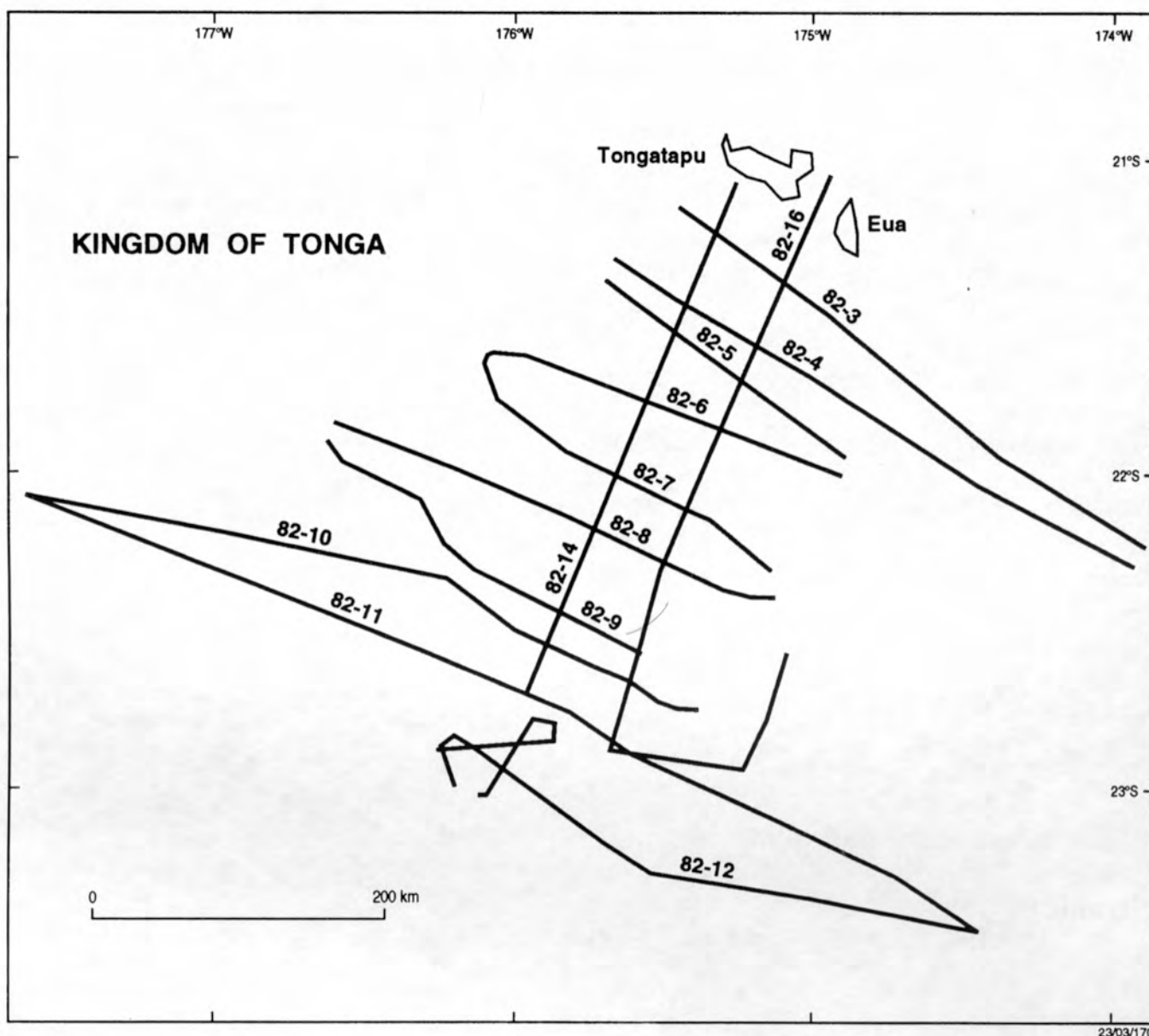
Seismic Data

Field tapes are available for selected lines only.

1600 bpi, SEG B Format.

Stack tapes are available for the same selected lines.





Acquisition Parameters

Seismic data:	Digital seismic data tape format - GUS HDDR 4200, 8000 bpi, 14 tracks
Energy source:	Tuned 1212 cubic inch, 5 air gun array
Receiver:	48 channel, 24 fold, Seismic engineering streamer
Shotpoint interval:	50 metres
Active cable length:	2400 metres
Sample rate:	2 msec
Near trace offset:	260 - 270 metres
Record length:	Generally 10 seconds
Bathymetry:	12 and 3.5 kHz echo sounder systems
Gravity:	La Coste & Romberg sea gravimeter
Magnetics:	Geometrics proton precession magnetometer
Navigation:	TRANSIT Satellite navigation
Geology:	2.5 metre gravity corer, dredges

Maps

		Cost (paper)
Trackline	Scale 1:1785714	\$10.00
	Scale 1:505050	\$20.00
Trackline/Topography	Scale 1:1785714	\$20.00
	Scale 1:505050	\$15.00
Topographic Contour	Scale 1:1785714	\$15.00
	Scale 1:505050	\$20.00
Physiographic Relief	Scale 1:1785714	\$15.00
	Scale 1:505050	\$20.00
Residual magnetics/Topography	Scale 1:505050	\$15.00
Free air gravity/Topography	Scale 1:505050	\$15.00
Oblique Relief Diagram	Kingdom of Tonga	\$10.00
Bathymetric Profiles		\$25.00
Sonobuoy Profiles		\$15.00
Line Drawing Interpretation of Multichannel Seismic Lines		\$10.00
Gravity and Magnetics Profile		\$50.00
24-Fold Seismic Reflection Profiles (Southern Tonga Platform)		\$15.00

Seismic sections

Tapes/Line	Line No	Cost (paper)	Tapes/Line	Line No	Cost (paper)
7	3	\$50.00	1	13	\$10.00
5	4	\$35.00	7	14	\$40.00
3	5	\$20.00	1	15	\$10.00
4	6	\$25.00	6	16	\$40.00
4	7	\$25.00	2	17	\$10.00
5	8	\$35.00	2	18	\$15.00
6	9	\$35.00	L5-TG-82 Single Channel		\$15.00
11	10	\$20.00	L5-TG-82 Single Channel		\$15.00
13	11	\$80.00	L5-TG-82 Single Channel		\$15.00
5	12	\$40.00			

Cost (paper) does not include digital data.

Seismic sections

Filtered and Scaled Stack

Reprocessed 1989

Line No	Shotpoints	Cost (paper)	Line No	Shotpoints	Cost (paper)
3	238-1900	\$25.00	9	1500-2600	\$20.00
4	2530-3560	\$20.00	10	150-1500	\$25.00
5	502-1520	\$20.00	11	3000-4501	\$25.00
6	750-1700	\$20.00	12	2450-4079	\$25.00
7	650-2150	\$25.00	14	30-3635	\$30.00
8	100-1600	\$25.00	16	30-3670	\$40.00

Seismic sections**Wave Equation Migration****Reprocessed 1989**

Line No	Shotpoints	Cost (paper)	Line No	Shotpoints	Cost (paper)
3	238-1900	\$25.00	9	1500-2600	\$20.00
4	2530-3560	\$20.00	10	150-1500	\$25.00
5	502-1520	\$20.00	11	3000-4501	\$25.00
6	750-1700	\$20.00	12	2450-4079	\$25.00
7	650-2150	\$25.00	14	30-3635	\$30.00
8	100-1600	\$25.00	16	30-3670	\$40.00

Seismic sections**Dip Moveout Migration****Reprocessed 1989**

Line No	Shotpoints	Cost (paper)
14	820-1160	\$30.00

Digital Data**Navigation and Shotpoint data**

6250 bpi, 9 Track, ASCII, 80 characters by 20 records per block

1 tape

Seismic Data

Sort and Stack tapes are available for all lines.

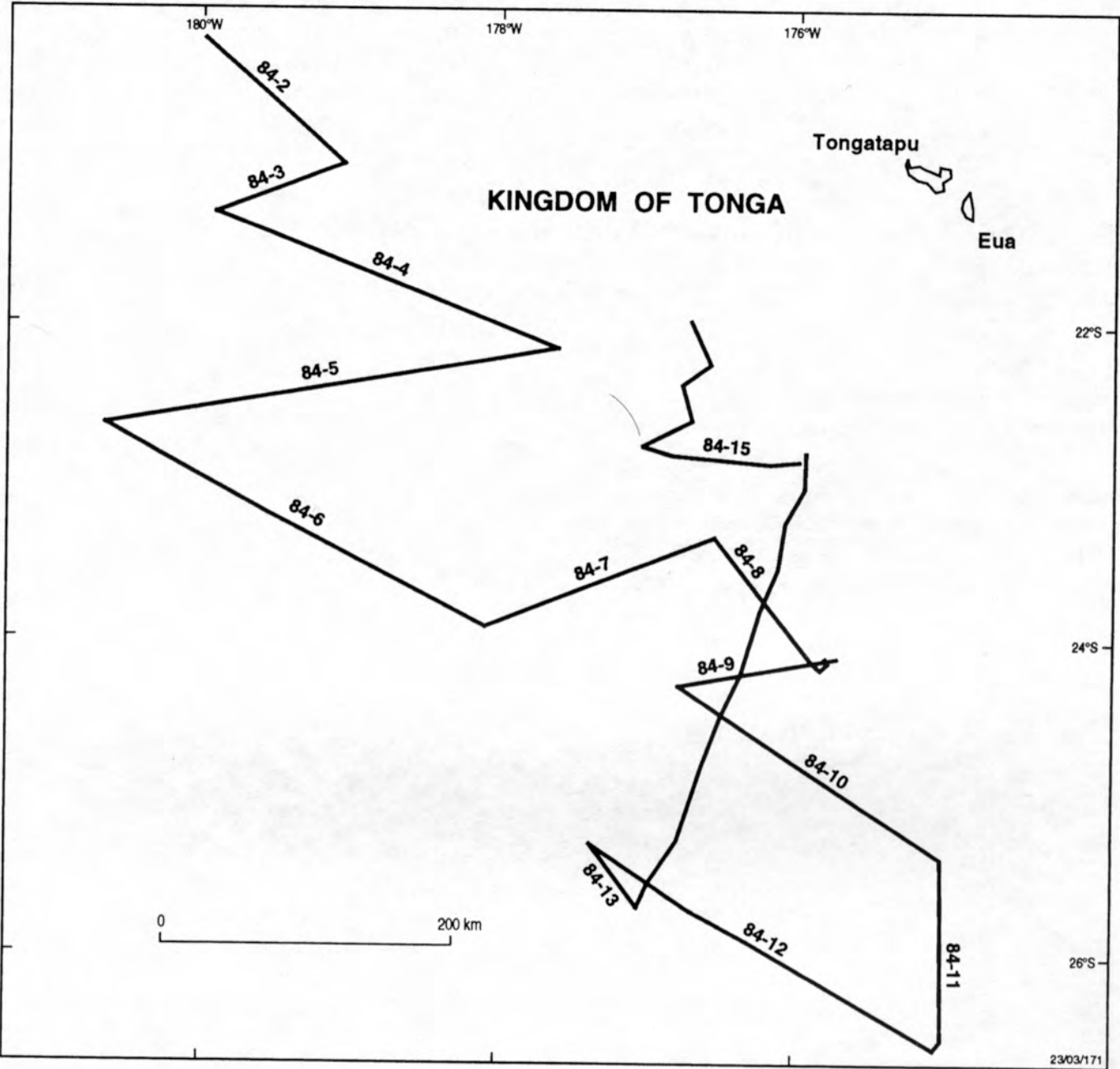
6250 bpi, 9 Track, DISCO 6.4 Internal Format

Migrated tape available for lines 8, 11 and 14. 6250 bpi, 9 Track, SEG Y.

1 tape



3.8 Tripartite 1984 Survey



Acquisition Parameters

Seismic data:	Digital seismic data tape format - GUS HDDR 4200, 8000 bpi, 14 tracks
Energy source:	Tuned 1212 cubic inch, 5 air gun array
Receiver:	48 channel, 24 fold, Seismic engineering streamer
Shotpoint interval:	50 metres
Active cable length:	2400 metres
Sample rate:	2 msec
Near trace offset:	260 - 270 metres
Record length:	Generally 10 seconds
Bathymetry:	12 and 3.5 kHz echo sounder systems
Gravity:	La Coste & Romberg sea gravimeter
Magnetics:	Geometrics proton precession magnetometer
Navigation:	TRANSIT Satellite navigation
Geology:	2.5 metre gravity corer, dredges

Seismic sections

Tapes/Line	Line No	Cost (paper)	Tapes/Line	Line No	Cost (paper)
3	2	\$20.00	4	11	\$25.00
8	3	\$45.00	11	12	\$60.00
5	4	\$25.00	3	13	\$20.00
12	5	\$60.00	14	14	\$70.00
13	6	\$70.00	5	15	\$30.00
18	7	\$90.00	2	16	\$10.00
5	8	\$30.00	1	17	\$10.00
5	9	\$25.00	2	18	\$10.00
8	10	\$50.00	2	19	\$10.00

Note:

Tapes/Line are sort tape numbers

Cost (paper) does not include digital data.

Map

Trackline

Scale 1: 1063575

Cost (paper)
\$10.00

Digital Data

Navigation and Shotpoint Data

6250 bpi, 9 Track, ASCII, 80 characters by 20 records per block

1 tape

Seismic data

Sort and Stack tapes are available for all lines.

6250 bpi, 9 Track, Disco 6.4 Internal Format.



4. Geophysical, Geological and Well Reports

4.1. Geophysical and Geological Reports

Barclay, W., and Havard, K. A Summary of Hydrocarbon Exploration and Production Licensing terms in SOPAC Member Countries. SOPAC Miscellaneous Report 151. July 1993.

\$30.00

Barclay, W., Rodd, J. A., Pflueger, J. C., Havard, K. R., and Helu, S. P. 1993. Oil Plays in the Kingdom of Tonga, Southwest Pacific.

\$10.00

Barney, W. M., 1981. An Evaluation of the Hydrocarbon Potential of the Tongatapu - Eua Channel, Kingdom of Tonga. Samuel Gary Oil Producer.

Black and White \$300.00

Colour \$4000.00

De Caen, R. F. B., 1969. The Geology of Eua and Tongatapu Islands.

\$25.00

Gatliff, R. W., Pfluger, J. C., Havard, K. R., Helu, S. P., Structure, Seismic Stratigraphy and Petroleum Potential of the Tongatapu-Eua Area of the Kingdom of Tonga.

\$25.00

Greene, H. G., 1982. Hydrocarbon Resource Investigation. USGS R/V S. P. Lee.

\$45.00

Grover, J. C., 1963. Excerpts from a Published Report on the Occurrence of Crude Oil in the Kingdom of Tonga.

\$10.00

Grover, J. C., 1968. A Brief Report on the Occurrence of Crude Oil in the Kingdom of Tonga.

\$10.00

Gary-Williams Oil Producer., 1980. Kingdom of Tonga. Exploration Proposal.

\$10.00

Guion and Pearson, Incorporated., 1980. Gulf of Tonga Gravity and Magnetic Interpretation. Webb Division of SOHIO.

\$40.00

Gulf Oil Corporation., 1970. Data Pertaining to the Geology of Tonga. (Oil Seeps).

\$10.00

GeoResearch Associates., 1991. Nomuka and Ha'apai Group, Kingdom of Tonga. SOPAC 1989 Marine Magnetic Survey, Presentation and Interpretation of Results.

\$70.00

Herzer, R. H., Exon, N. F., Structure and Basin Analysis of the Southern Tonga Forearc.

\$10.00

Herzer, R. H., Scholl, D. W., and Scientific Staff. Initial Report on 1984 R/V/ S. P. Lee Cruise L3-84-SP: Tonga Ridge, Lau Ridge and Lau Basin. CCOP/SOPAC Cruise Report No. 93.

\$10.00

Havard, K., 1989. Visit to Nomuka, Mango and Fonoifua, Tonga. 6 - 9 February 1989. Comments on Geology and Drilling. CCOP/SOPAC Preliminary Report 10.

\$15.00

Halunen, Jr. A. J., 1980. Cruise Report, Tonga Offshore Survey, 14 January - 4 February 1980. Cruise Report 32.

\$15.00

Honza, E., Lewis K. B., 1985. A Marine Geological and Geophysical Survey of the Northern Tonga Ridge and Adjacent Lau Basin. Mineral Resources of Tonga. Field Report No. 1.

\$30.00

Kleinsmiede, W. F. J., 1968. Petroleum Prospects of the Tongan Platform. Shell Development (Australia) Pty Ltd.

\$8.00

Marine Geology of the Kermadec-Tonga-Fiji Region. Geological Report 31. Mobil Technical Services, Inc.

\$15.00

Maung, T. U., Anscombe, K., Tongilava, S. L., 1981. Assessment of Petroleum Potential of the Southern and Northern Parts of the Tonga Platform. Technical Report No. 18.

\$18.00

Maung, T. U., Anscombe, K., Tongilava, S. L., Petroleum Potential of the Southern Part of the Tonga Platform.

\$10.00

Morel, Y., and Medina, B. SOPAC Database on Multichannel Seismic Tracks in Tongan Waters.

SOPAC Technical Report 131. September 1991.

\$20.00

Morel, Y., and Medina, B. A Database on Multichannel Seismic Shotpoints in the Sea Area of Tonga.

SOPAC Technical Report 161. January 1993

\$25.00

Mulder, C. J., Nieuwehuizen, C. v. d., 1971. Appraisal of the Tonga Concession and Recommendations for Future Work. Bataafse Internationale Petroleum Maatschappij N. V. The Hague.

\$25.00

Ocean Drilling Program. Leg 135 Preliminary Report. Lau Basin. 1991.

\$10.00

Petroleum Exploration in the Kingdom of Tonga. 1989.

\$10.00

Pflueger, J. C., Havard, K. R., 1988. A Re-Examination of the 11/14 Anomaly on the Southern Tonga Platform.

CCOP/SOPAC Miscellaneous Report 57.

\$10.00

Pflueger, J. C. .Hydrocarbon Potential of the Lau Ridge: Reid Reef to Ogea Levu Island.
SOPAC Technical Report 114. **\$15.00**

Robson, A.D and Pritchard. 1987. Reprocessing of Seismic Fiels Tapes from the Shell (1970) Tonga Isles Survey. Ocean Sciences Institute Technical Report No. 11. The University of Sydney. **\$40.00**

Results of the Gravity and Magnetic Survey on Tongatapu and Well Location Proposal Tongatapu A and B.
Shell Internationale Petroleum Maatschappij N. V. The Hague. 1971. **\$40.00**

Sandstrom, M. W. and Philp, P. R. Biological Marker Analysis and Stable Carbon Isotopic Composition of Oil Seeps from Tonga. **\$30.00**

South Pacific Marine Geological Notes.
Vol. 1 No. 1., July 1975. Oil Prospecting in Tonga 1968 - 1974. **\$10.00**

Vol. 1 No. 2., August 1975. A Structural Interpretation of Two Reflection Profiles across the Tongan Arc. **\$10.00**

Smith, R., Adriaanse, J. 1971. An Assessment of the Gravity and Magnetic Data from the Tonga Offshore Area.
Shell Internationale Petroleum Maatschappij N. V. The Hague. **\$10.00**

4.2 Well Reports

Resume of Exploration Wells Kumifonua 1 and 2
Tonga Shell N. V. and SIPM, The Hague. **\$100.00**

Well History. Kumimonu No. 1. **\$20.00**

Scholl, D. W., Herzer, R. H., 1989. Geology and Resource Potential of the Southern Tonga-Lau Region. **\$20.00**

Summons, Roger E., Murry, Andrew P., Juodvalkis, Algis., Hope, Janet M., and Reyes, Evelyn N. 1992. Hydrocarbon Composition of the Pili Oil Seep of Tongatapu. A Professional Opinion. **\$20.00**

Warters, H. R., 1976. Oil and Gas Potential in the Kingdom of Tonga. Warpet Exploration Ltd. A Report prepared for Webb Tonga, Inc. **\$40.00**

Tripartite 1982 Survey. Multi-Channel Shotlog (observers log). Chief Scientist: Dave Scholl. **\$40.00**

Tripartite 1984 Survey. Multi-Channel Shotlog (observers log). Chief Scientist: Scholl and Herzer. **\$40.00**

Mobil 1972 Survey
Observers logs for selected lines. **\$40.00**

The following report is available from the SOPAC Secretariat in Fiji;
Geology and Submarine Resources of the Tonga-Lau-Fiji Region.
SOPAC Technical Bulletin 8.
Edited by Andrew J. Stevenson, Richard H. Herzer and Peter F. Ballance.
US\$30.00

Well History. Kumimonu No. 2. **\$20.00**

Well History. Kumimonu No. 3. **\$20.00**

5. Concession Map

Scale 1:1,000,000

Blocks for licensing are 10 minutes of longitude by 10 minutes of latitude.

\$10.00

6. Costs

Maps and Seismic sections

Film copies are available. Prices on request. Survey lines may be incomplete.

Reports:

As per indicated price.

Digital Data

Details available on request.

Shipping Charges:

All shipping charges are payable by the purchaser and are calculated at the time of shipment.

Currency:

All prices are in Australian Dollars unless otherwise stated.

Prices are subject to change without notice.

Whilst all care has been taken any errors in this catalogue are regretted.

Orders:

Please make orders on the order form supplied at the back of this catalogue and fax to the SOPAC Petroleum Data Bank in Canberra, Australia.

Note: Orders must be pre-paid before shipping.

All orders are payable to:

South Pacific Applied Geoscience Commission (SOPAC)

Postal Address

Private Mail Bag, GPO

Suva,

Fiji

Fax: (679) 370040

Phone: (679) 381377 or 381139

Street Address:

South Pacific Applied Geoscience Commission (SOPAC)

Mead Road

Suva,

Fiji

Conditions of Purchase and Reprocessing.

These conditions apply to all data purchased, acquired or generated by any subsequent data processing.

I/We understand that SOPAC on behalf of Tonga owns the copyright of these data, and I/we agree not to publish or pass to any third party any part of these data without prior permission of the Director, SOPAC Secretariat, Private Mail Bag, GPO, Suva, Fiji, Telephone: (679) 381377 or 381139, Facsimile: (679) 370040.

If the organisation or group acquiring data undertakes additional processing then SOPAC must be supplied with two film copies of final processed data, together with a digital tape of the final processed data and a basic description of the processing sequence. These data must be provided free of charge within six months after completion of processing whereupon the same will be kept confidential by SOPAC for a period of three years after date of receipt.



Data Required

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

Fax: