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The Director

Northern Territory Geological Survey

Department of Mines and Energy

Herewith an update of the "Northern Territory Geological Survey Petroleum Basin Study - Eromanga Basin" containing the results of more recent exploration.

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ETINGIMBRA 1

BASIC DATA

OPERATOR:		Territory Petroleum Pty Ltd.
PETROLEUM TITLE:		EP-1, N.T.
PARTICIPANTS:		Horizon Operating Co. & Bennett Petroleum Corp. Territory Petroleum Pty Ltd. Bridge Oil Ltd. Allco Petroleum N.L. Arabasin Oil N.L.
LOCATION:	Lat:	25 51 26.63
	Long:	135 45 09.67
	Seismic:	station 150 on line 87NT-15
ELEVATION:	GL:	120m
	RKB:	123m
DRILLING COMMENCED:		12th January, 1990
RIG RELEASED:		20th January, 1990
DRILLING TIME TO TD:		7 days
RIG:		Drillcorp Ltd. Rig 24
TOTAL DEPTH:		Driller-1004.8m, Logger-1006.3m
BOTTOM HOLE TEMP:		66°C at TD
STATUS:		Plugged and Abandoned
N.T.D.M.E. REFERENCE:		PR90/017

COMPLETION DETAILS: Three abandonment plugs were set at:

1. 660-600m
2. 140-80m
3. 45m-surface

STRATIGRAPHY:

AGE	FORMATION	DEPTH(m)	ELEV(m)	THICKNESS
Tertiary-Recent	Surficial	surface	+120	7
E. Cretaceous	Wallumbilla Fm	7	+113	293
E. Cretaceous	Cadna-Owie Fm	300	-180	22
L. Jurassic	Algebuckina Sst	322	-202	289
E. Permian	Purni Fm	611	-491	23
L. Carb-E. Perm.	Crown Point Fm	634	-514	110
Devonian	Idracowra Sst. equiv	744	-624	41
Devonian	Langra Fm	785	-665	218
TD		1006	-883	

STRUCTURE: The dominant tectonic element is the major NE-SW trending M^{c}Dills Anticline which is upthrust adjacent to the Eringa Trough to the west. The anticline had been tested previously (M^{c}Dills 1, 25 years earlier), however it was thought that a test of the less faulted, and shallower, Etingimbra prospect would provide a more definitive test of the potential of the M^{c}Dills Anticlinal Trend.

WIRELINE LOGS: The following wireline logs were run by Gearhart Pty Ltd.

LOG TYPE	RUN	INTERVAL
DDL-MSFL-GR	1	1006-106
BCS-GR	1	1003-106
CDL-CNS-GR	1	880-633
	2	350-292

DEVIATION SURVEYS: Borehole deviation data as recorded from Totco surveys are provided on the Mudlog and Composite Well Log. Maximum borehole deviation recorded was 3^{o} at 615m.

CORES: no cores were cut.

FORMATION TESTS: no testing was carried out.

VELOCITY SURVEY: no velocity survey was conducted.

HYDROCARBON SHOWS: no hydrocarbon shows were encountered during the drilling of Etingimbra 1.

RESERVOIRS: Late Jurassic Algebuckina Sandstone
L. Carb-E. Perm. Crown Point Formation
Devonian Langra Formation

SOURCE ROCKS: Potential Permian source rocks present in M^{c}Dills 1 may lie within the oil generative window in the adjacent Eringa Trough. The Jurassic Poolowanna Formation and Triassic Peera Peera Formation have generated oil in the vicinity of Colson 1 and are predicted to be oil mature east of the M^{c}Dills Trend (Madigan Trough). These two formations are not present on the M^{c}Dills Anticline. Deeper source rocks such as the Ordovician Horn Valley Siltstone and deeper water carbonates of Lower Cambrian age could provide additional mature sources within the Eringa Trough.

COMMENTS: Etingimbra 1 was drilled along the crest of the M^{c}Dills Trend, a NE-SW trending anticline in (the former) EP-1, N.T. The well was located some 14km SSW of M^{c}Dills 1 drilled in 1965.

Although located on the same trend, the Etingimbra structure displays much less internal faulting, and is in a higher structural position compared to M^{c}Dills 1, making it a better target.

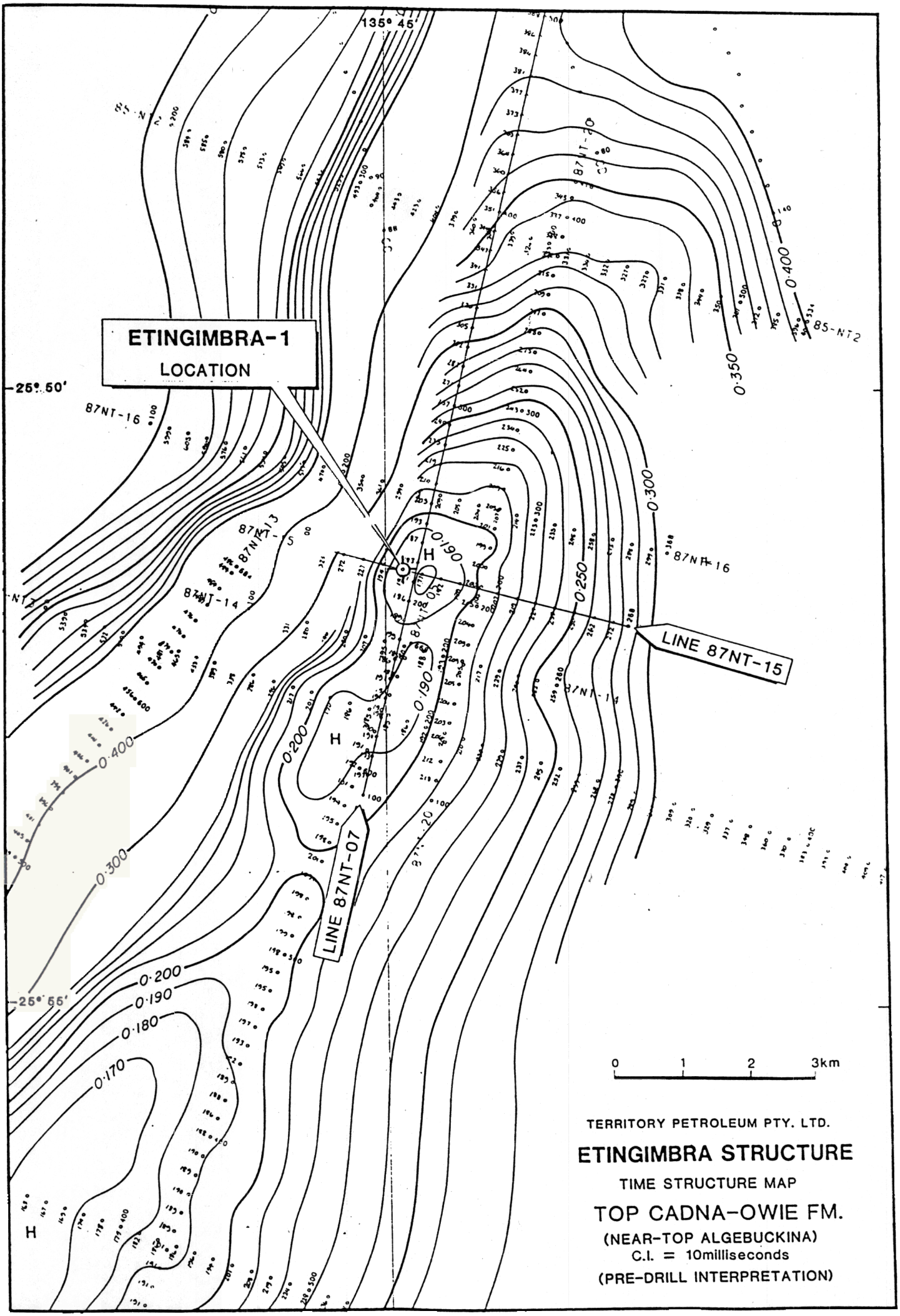
The M^{c}Dills 1 well was almost totally devoid of shows. A gas show was logged while drilling between 416-21m, but resistivity logs did not verify the show. Similarly, no hydrocarbon shows were recorded in Etingimbra 1, and wireline log analysis confirmed all porous zones to be 100% water saturated.

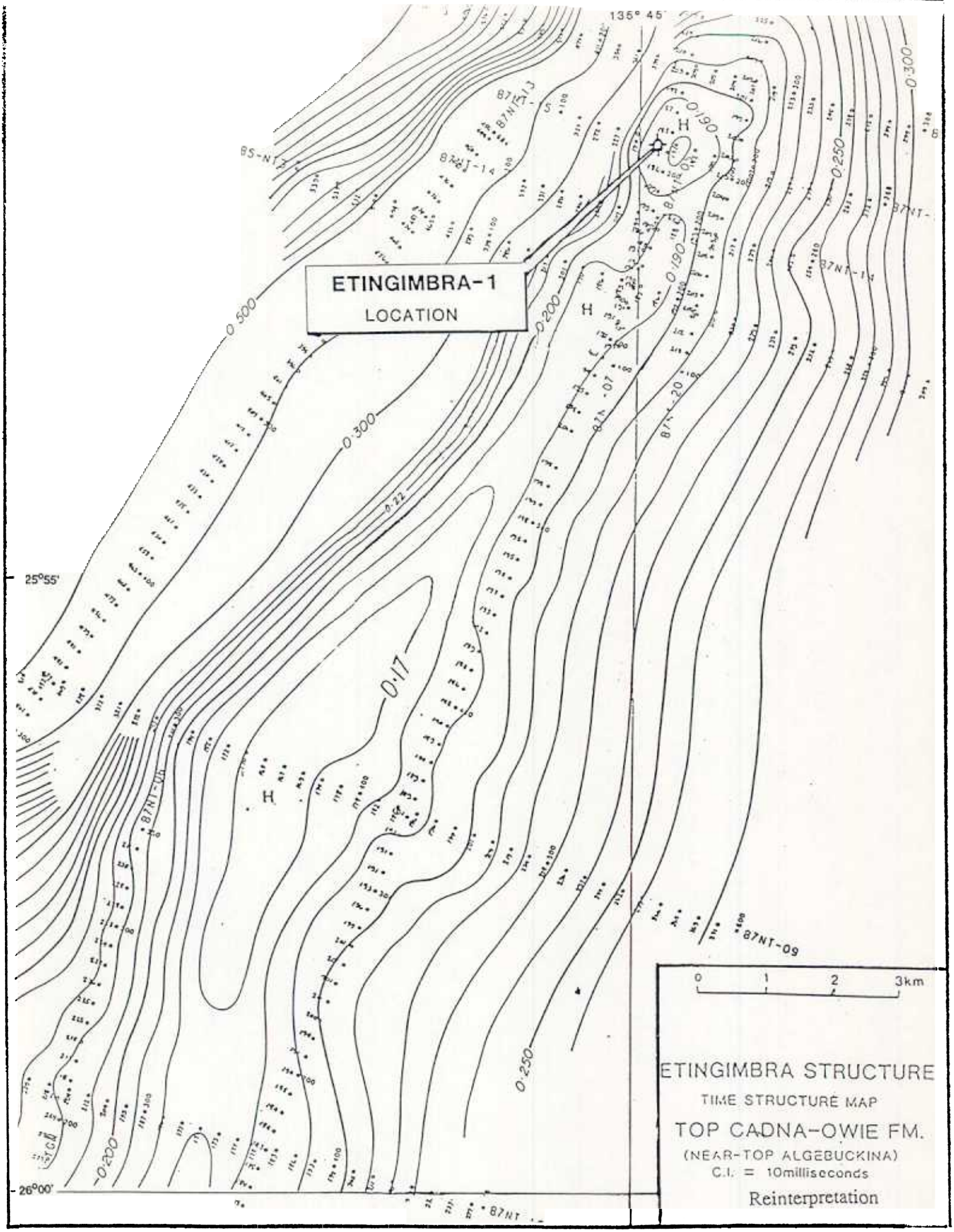
COMMENTS Cont:

Seismic mapping of the Etingimbra structure at the Top Cadna-Owie Formation level indicates that the structure may be much larger, and that the well was not drilled in an optimal position. A reinterpretation of the data removes the saddle seen between two highs on seismic line 87NT-05. Connection of these two structures implies that any accumulated hydrocarbons would be found at the culmination found closer to shot point 360 on seismic line 87NT-09, with the structure not filled to spill point.

A re-evaluation of the seismic data shot to date, and further seismic over a much tighter grid may help evaluate the highest point on the structure, an important aspect in the Eromanga Basin, as many structures are not filled to spill point.

The temperature gradient of 3.9°C/100m calculated for the Etingimbra location closely corresponds with the 3.7°C/100m recorded for the M^{c}Dills 1 well 14km to the NNE. Assuming a constant geothermal gradient over this region, potential source rocks within the Early Jurassic Poolowanna Formation to the base of the Permian section would be mature for oil generation and expulsion in the nearby Eringa Trough to the west, and the Madigan Trough to the NE.


135° 45'
ETINGIMBRA-1
LOCATION
25° 50'
25° 55'
87NT-16
87NT-13
87NT-14
87NT-20
85-NT2
LINE 87NT-15
LINE 87NT-07
0·400
0·350
0·300
0·250
0·200
0·190
0·180
0·170
H
0
1
2
3km
TERRITORY PETROLEUM PTY. LTD.
ETINGIMBRA STRUCTURE
TIME STRUCTURE MAP
TOP CADNA-OWIE FM.
(NEAR-TOP ALGEBUCKINA)
C.I. = 10milliseconds
(PRE-DRILL INTERPRETATION)


135° 45'
ETINGIMBRA-1
LOCATION
0·500
0·300
0·22
0·17
0·200
0·190
0·250
0·300
H
25°55'
26°00'
87NT-09
0 1 2 3km
ETINGIMBRA STRUCTURE
TIME STRUCTURE MAP
TOP CADNA-OWIE FM.
(NEAR-TOP ALGEBUCKINA)
C.I. = 10milliseconds
Reinterpretation