

Natural Resources and Environment

DEPT. NAT. RES & ENV

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

EAST LAKE TYERS -1 WELL SUMMARY

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FILE No.

EAST LAKE TYERS-1 (W470)

Well Summary Report

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Well Summary and Lithology

Lithology and Stratigraphy (B.Hocking)

Palaeontology

Enclosures
Final Well Report Well Completion Log **Mud Log**

WELL SURVARY

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WELL	EAST LAKE	E TYERS No.1	1. TYPE.	STRIAT.	BASIN GIPPOK	
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LOG SUMMARY and INTERPRETATION

Type Run Interval Date Type Run Interval Date Interval P Sw

E-log 1 1536-296 17 00 62

Plug: Abd. 1350'-1450' 2054 265'-310' 1054 Mitch cop on 7" Casing.

MINES DEPARTMENT VICTORIA

El. 15 KB. T.D. 1541 1/2

Avandoned 18 Oct. 1962.

W470

PETROLEUM ACT 1958 (SECTION 45).

RECORD OF WORK AT .. EAST.LAKE.TYERS.NO..l..... bore on

*Petroleum Exploration Permit)

ending **Qqt..14.**..... 19.**62....**

* Strike out words not applicable.

DEPTH	DESCRIPTION OF STRATA
0 - 15'	Silt, Marl and Limestone nodules
15'- 8 8 0'	Marl, Coquina and Limestone
880'- 1040'	Clay, Marl and Limestone
1040'- 1190'	Clay and Silstone, grn. to brn., glauconitic,
	soft and gummy, micaceous, slightly
	fossiliferous

NOTES BY DRILLER IN CHARGE: (State in notes whether water, gas or petroleum has been met with, and, if so, give depth and nature of occurrence, also depth to which casing has been inserted and cemented.)

Conductor Pipe 10" set at 31.5 ft. with 20 sacks cement.

Cemented to Surface.

Surface casing 7" set at 300.0 ft. with 60 sacks cement.

Cemented to surface.

Signed ... W... H... Butt......

Legal Manager, ... Arco Limited Co.

Date ...16.../..10../...62...

N.B. The Act also requires the Minister to be notified immediately water, gas or petroleum is encountered.

Analyses of water, gas and oil should be submitted if available.

Dr. Thomas. 17.10.62

MINES DEPARTMENT VICTORIA

PETROLEUM ACT 1958 (SECTION 45).

RECORD OF WORK AT ... EAST. LAKE TYERS NO. 1, bore on *Petroleum Exploration Permit)

ending October 21 ... 1962.....

* Strike out words not applicable.

DEPTH	DESCRIPTION OF STRATA
1190 - 1290	Clay and Argillaceous Siltstone
1290-1460	Clay and glauconitic Sandstone
	occasionally dolomitic
1460 - 1490	Unconsolidated Sand and Gravel
1490 - 1541	Phyllite, yellow, red, brown and white,
	highly weathered in top 25 feet.
	slightly weathered 1515' to 1541'.
1541	TOTAL DEPTH.

NOTES BY DRILLER IN CHARGE: (State in notes whether water, gas or petroleum has been met with, and, if so, give depth and nature of occurrence, also depth to which casing has been inserted and cemented.)

Electric log 300' - 1541' by Victoria Dept. of Mines with

Widco Logging unit. Bore plugged on Oct. 18, 1962.

Cement plugs set at 1350' - 1450' and 265' - 310'. Metal cap
screwed on top of 7" casing. Casing 2' above ground level

Signed .W..H..BUTT.....

Legal Manager,ARCO.LIMITED.... Co.

Date ..24.../..10./..62...

N.B. The Act also requires the Minister to be notified immediately water, gas or petroleum is encountered.

Analyses of water, gas and oil should be submitted if available.

EAST LAKE TYERS No. 1

Location: 37°50 38"5, 148°07 33 E. El.: G.L, approx 10 ft.

TD : 1541 ft

B. Hocking Picks (Nov 63)

Idaunted Hill Gp. 0-30

Jemmy's Pt. 30-170

Tambo River 170-180

Grippsland Lst. 180-970

* Lakes Entrance Fmn. 970-1460 Scolguhoun Gravels Ord. basement. 1460-1541

* Pifferentiation impossible due to contamination - B. H.

ARCO LIMITED. 792 Elizabeth Street, MELBOURNE C.1.

24th October, 1962.

The Secretary for Mines, Department of Mines, Treasury Place, MELBOURNE. C.2.

Dear Sir,

Pursuant to your letter of 18th October, we now enclose the final well log of the East Lake Tyers No. 1. Well.

Yours very truly,
ARCO LIMITED.

by W. H. Butt, Manager.

WHB:mb.

Encl.

M. Thomas.

ARCO LIMITED.
792 Elizabeth Street,
MELBOURNE. C.1.

16th October, 1962.

The Secretary for Mines, Department of Mines, Treasury Gardens, MELBOURNE. C.2.

Dear Sir,

re: Petroleum Prospecting Licence No. 160. and Petroleum Exploration Permit No. 43.

Thank you for your letter of 2nd October, advising that the Hon. the Minister had approved commencement of drilling operations on the areas comprised in the abovementioned licence and permit.

Attached here to please find copy of the first weekly "record" of work" form appertaining to P.E.P. NO. 43.

Pursuant to your advice that further supplies of these forms will be made available on request, we estimate we will need about 16 more forms to cover the period of operations in the two areas, and would appreciate if you could forward them to us.

Yours very truly,

ARCO LIMITED.

By W. H. BUTT.

W. H. BUTT. Manager.

WHB:mb.

Encl.

LITHOLOGY AND STRATIGRAPHY

-B. Hochwa

ARCO-WOODSIDE'S EAST LAKE TYERS NO. 1 BORE

37° 50' 38" S, 148° 07' 33" E. Location:

G.L. is approx. 10 ft. Elevation:

10 ft. rotary cutting samples; cores taken at 1350-63 ft. and Samples:

1531-41 ft. Contamination is bad in lower samples.

Lithologic Log:

yellow brown shelly limestone 30-60:

grey shelly marl (or marly limestone), abundant shell fragments greenish grey shelly marl, partly glauconitic 60-170:

170-180:

grey polyzoal marly limestone 180-270:

white polyzoal limestone, richly fossiliferous, common brachiopod 270-390: fragments

grey polyzoal marly limestone 390-625:

cream polyzoal limestone, with occasional interbedded marly 625-750:

limestone

yellowish grey marly limestone 750-800:

800-820: grey foraminiferal marl

yellowish grey marly limestone 820-840:

840-850: grey marl

yellowish grey marly limestone 850-930:

930-970: greenish and grey marls

970-1040: dark grey marl, becoming progressively darker in colour slightly micaceous, small shells.

1290-1310: khaki-green glauconitic clayey sand.

1310-1460: fine-grained brownish grey sand, friable, becoming significantly pyritic at ap prox. 1370 ft. (accord. to Arco log).

1460-1470: whitish grey clay

1470-1490: quartzite, presumably well-fractured (occurs as angular chips of quartz).

1490-1541: phyllite, lt. green, pink, green and brown, brittle, veinlets of chalcedony.

Core Descriptions:

Core 1, 1350-63 ft. (sample 1360 ft.):-

Silt and fine sand, brownish grey, micaceous, fair to good porosity.

Core 2, 1531-41 ft. (sample 1533 ft.):-

Phyllite, slightly weathered, mottled orange green, dip (or cleavage at 45°, fractures usually filled with chalcedony (Arco).

Stratigraphic Interpretation:

30-170 ft. (Jemmy's Pt. Formation):

Abundance of shell material, together with such diagnostic foraminifera as <u>Cibicides cygnorum</u>, <u>Flintina ultima</u>, <u>Massilina lapidigera</u>, and common <u>Nonion</u> victoriense and miliolids spp., indicate the Jemmy's Pt. Formation. 170-180 ft. (Tambo River Formation):

Glauconite is present, and the fauna is much richer in pelagic species - Globigerina ouachitaensis-bulloides gp. and Orbulina universa. Benthonicss include Cancris auriculus, Cancris phillipinensis, Nonion victoriense, Valvulineria kalimnensis, and limited miliolids. The fauna indicates the Tambo River Formation (Mitchellian).

180-970fit .: Gippsland Limestone):

Polyzoal limestones (or marly limestones) make their first appearance - in drilled order - at 180 ft., marking the top of the Gippsland Limestone. Faunas framined at 400 ft. and 500 contain Orbulina universa, indicating Bairnsdalian age.

Orbulina universa is not recorded in the yellowish grey polyzoal limestones and marly limestones between 625 and 800 ft.; these are presumably of Balcombian and Batesfordian age. The Balcombian stage certainly exists, as Globigerinoides transitoria - a diagnostic Balcombian species - occurs as contamination in a deeper sample. Amphistegina lessonii and Operculina victoriensis occur typically.

topidante softend between the rank of the

<u>Lepidocyclina</u> sp. is found between 760 and 780 ft., indicating a Batesfordian age.

Below 800 ft., grey foraminiferal marls contain Astronomion centroplax, Globigerina apertura and Elphidium spp., suggesting X a Longfordian age.

970-1310 feet (Lakes Entrance Formation equivalent):

The dark-colored marls, which appear below 970 ft., are presumably of uppermost Janjukian age, and foraminifera include Globigerina ampliapertura; <u>Victoriella plecte</u> was noted at 1040 ft.

1310-1460 feet ('Colquhoun Gravels'):

The core sample at 1360 ft. contained a fauna which is quite possibly of Faunal Unit 4. Fish remains, typical in the *Colquboun Gravels* of the Lakes Entrance area, were recorded. Below this contamination was too severe to record any faunas.

1460-1470 feet (?):

This small thickness of grey clay is stratigraphically indeterminate.

Below 1470 feet:

Quartzite overlying phyllite, representing the metamorphic basement rock, presumably of Ordovician age. This association of quartzite and phyllite Xwas observed in East End No.1 bore.

REFERENCE.

Ingram, Frank: 1962: Lithologic log of Arco-Woodside's East Lake
Tyers No.1 Bore.

BH

B.HOCKING, Geologist. 1.8.63. FRANK: 34 4339
INGRAM

Anco E. L. Tyers: 1533ft.

Megascopic: Multicolored mudsline, rel. hard showing wery wery week orderage to dips v. sleepty.

Core is transected by very thin veins of a glassy substance material, bounded by a wall of won-stained substance material. (Very faint waxes of fine white miter).

Microscopic:

Claystone: typically reathered: close to palaeosurface.

Basically aligned sericite que, few quartz of silter size.

Typical of outeropping Ordericai (Dr. J.A. Talent; pers. commo)

PALAEON TOLOGY

COMMENTS ON FAUNA FROM EAST LAKE TYERS NO.1 AND EAST NOWA NO.1 WELLS

Examination was made on rotary cutting samples from these two shallow stratigraphic wells drilled by ARCO-Woodside in the eastern portion of the Gippsland Basin. Severe contamination in the cutting samples, especially from East Lake Tyers No.1, make stratigraphic correlations impossible. Only one core was taken in the Tertiary section; that being in East Lake Tyers No.1 Any stratigraphic conclusions drawn are based on the work of Carter (1962).

East Lake Tyers No.1 Well:

Marine sediments were entered at 30 feet. They contain an abundant fauna of miliolids and Robulus spp. Although no diagnostic species are present, large hard limestones with interbedded marks indicate that these sediments represent the Bairnsdale Limestone. The first definite Bairnsdalian faunas were noted at 150 feet. Orbulina universa was frequent and Heronallenia howitti was present. The former species does not occur lower than Bairnsdalian whilst Carter (loc.cit.) states that the latter species is restricted to the Bairnsdalian.

The first appearance of <u>Operculina victoriensis</u> (the large flat ornamented Foraminifera) is noted at 700 feet. Carter (loc.cit.) states that this species does not range above the <u>Wuk Wuk Marls</u> in the Gippsland Basin. This is not conclusive evidence that the top of the <u>Wuk Wuk Marls</u> is at 700 feet, as it would mean that the <u>Bairnsdale Limestone</u> was 670 feet thick which would be exceptional. No fauna break is noted above 700 feet and in fact the Bairnsdalian faunas continue below this depth to the bottom of the well.

Astronomion centroplax was noted at 900 feet. As this species does not range above the Longfordian the Longfordian Limestone (which includes marls) is at and below this level.

The <u>Lakes Entrance Formation</u> cannot be identified. The core at 1360 feet contains no diagnostic fauna. The mark reported by Ingram and Rutledge (1962) from 1412 to 1460 feet contained a post-Longfordian fauna. This mark is in fact total contamination from above 900 feet.

It is noted that the electric logs do not indicate a marl for this interval.

Core No.2 at 1531 feet does not contain any fauna.

East Nowa No.1 Well:

The sands and clays down to 170 feet do not contain any faunas.

Bairnsdalian faunas (including <u>Orbulina universa</u> and <u>Heronella howitti</u>) occur below 170 feet.

The first appearance of <u>Elpidium crespinse</u> at 300 feet probably indicates the top of the <u>Wuk Wuk Marls</u>.

The top of the Glencoe Limestone cannot be designated.

The first appearance of <u>Astrononion centroplax</u> at 650 feet indicates the top of the <u>Longford Limestone</u> equivalent. Contamination below this level is severe and the <u>Lakes Entrance Formation</u> cannot be identified.

No fauna was found in Core No.1 at 1188 feet.

D.J.Taylor Geologist.

6th December, 1962.

References:

Carter, A.N., 1962

Tertiary Foraminifera from the Gippsland, Victoria, and their stratigraphic significance. <u>Geol.Surv.Vict.</u> <u>Memoir</u> (in press)

Ingram, F., and Rutledge, D., 1962

Graphic lithological log - East Lake Tyers. ARCO Ltd. (unpublished).

ELAKE TYERS 1 - Cone:

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one Elphronospinale & attached paints.

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PE904009

This is an enclosure indicator page. The enclosure PE904009 is enclosed within the container PE904832 at this location in this document.

The enclosure PE904009 has the following characteristics:

ITEM_BARCODE = PE904009
CONTAINER_BARCODE = PE904832

NAME = Final Well Report

BASIN = GIPPSLAND

PERMIT =

 $\mathtt{TYPE} = \mathtt{WELL}$

SUBTYPE = FWR_RPT

DESCRIPTION = Final well Report East Lake Tyers no 1

REMARKS =

DATE_CREATED =

DATE_RECEIVED =

 $W_NO = W470$

WELL_NAME = East Lake tyers-1

CONTRACTOR = Arco Ltd/Woodside Oil Co
CLIENT_OP_CO = Arco Ltd/Woodside Oil Co

(Inserted by DNRE - Vic Govt Mines Dept)

PE602062

This is an enclosure indicator page.

The enclosure PE602062 is enclosed within the container PE904832 at this location in this document.

The enclosure PE602062 has the following characteristics:

ITEM_BARCODE = PE602062

CONTAINER_BARCODE = PE904832

NAME = Well Log

BASIN = GIPPSLAND

PERMIT =

 $\mathtt{TYPE} = \mathtt{WELL}$

SUBTYPE = WELL_LOG

DESCRIPTION = Well Log East Lake Tyers No 1

REMARKS =

DATE_CREATED = 17/10/1962

DATE_RECEIVED =

 $W_NO = W470$

WELL_NAME = East Lake tyers-1

CONTRACTOR = Widco

CLIENT_OP_CO = Arco Ltd/Woodside Oil Co

(Inserted by DNRE - Vic Govt Mines Dept)

PE603477

This is an enclosure indicator page.

The enclosure PE603477 is enclosed within the container PE904832 at this location in this document.

The enclosure PE603477 has the following characteristics:

ITEM_BARCODE = PE603477

CONTAINER_BARCODE = PE904832

NAME = Mud Log

BASIN = GIPPSLAND

PERMIT = PEP43

 $\mathtt{TYPE} = \mathtt{WELL}$

SUBTYPE = MUD_LOG

DESCRIPTION = Mud Log (containing lithologies) for East Lake Tyers-1.

REMARKS =

DATE_CREATED = 18/10/1962

DATE_RECEIVED =

 $W_NO = W470$

WELL_NAME = EAST LAKE TYERS-1

CONTRACTOR =

CLIENT_OP_CO = ARCO LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)