WOODSIDE SOUTH NO. 1. WELL

COMPLETION REPORT W490

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WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

WOODSIDE SOUTH NO. 1 WELL

COMPLETION REPORT

by

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of

Cundill, Meyers & Associates

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I ABSTRACT

Woodside South No. 1 well was drilled in P.P.L. 157 (Victoria) by an Australian Drilling Company National type 50 rig to a total depth of 5816'.

The well was favourably located on a geophysically determined location in the vicinity of reported oil and gas shows in Woodside (Lakes Entrance) wells Nos. 1 and 2. The well penetrated 3253' of Tertiary sediments and bottomed at 5816' after penetrating 2566' of Mesozoic sandstones and shales.

The Tertiary penetrated is broadly divisible into four principal lithologic units :

(i) Post Miocene shells and sands of the Jemmy's Point formation.

(ii) Marine Tertiary marls and limestones of the Tambo River, Gippsland limestone and Lakes Entrance formations.

(iii) Non-marine coal measures and gravels of the Latrobe Valley formation.

(iv) Basal, weathered basalts (3005'-3253')

The Mesozoic (Strezlecki group) consisted of 2566' of sandstones, shales and mudstones. At total depth the base of the Strezlecki group had not been reached.

Porosity and permeability were noted in the Tertiary, especially in the unconsolidated sediments in the intervals 20'-603' and 1943'-3005'. No oil and gas shows were observed and the permeable sediments proved to be fresh water bearing. Drill stem tests 1 - 4 and the electric logs established this conclusively.

In the Mesozoic occasional streaky porosity ranging from 11-25% was observed in the sandstones. No oil and gas shows were observed. An extensive programme of drill stem testing and coring was undertaken in this section based on correlations with shows reported in the nearby Woodside Nos. 1 and 2 wells. Drill stem tests 5 through 13 established the fact of a generally tight sequence with occasional low permeability salt water bearing sandstones. Successful packer seats were obtained in all drill stem tests.

The well confirms the structural high on the Mesozoic top. The overlying salt water gravels which were encountered in the Woodside No. 1 well, were not present in the Woodside South No. 1 well.

No hydrocarbons were evident in either the Tertiary or Mesozoic, and the hole was plugged and abandoned.

II INTRODUCTION

Regionally the Gippsland basin has been the object of fairly intense petroleum exploration since the discovery of oil at Lakes Entrance in 1924. Numerous surveys, both geological and geophysical have been conducted in the area by various government agencies and oil companies.

Woodside South No. 1 was located in the western part of the Gippsland basin. The reasons for drilling this well were two-fold. In the first place Woodside wells Nos. 1 and 2, drilled without benefit of good geophysical and geological control, encountered several oil and gas shows both in the Mesozoic and Tertiary strata. It was felt, therefore, that these oil and gas shows "should be tested on an adjacent structure and that an adequate record, both lithologic and electric be obtained" in view of the limited geological and testing programme carried out on Woodside Nos. 1 and 2 wells.

Subsequent geophysical investigations indicated that favourable structural conditions for oil entrapment did occur in the vicinity to the north west of Woodside Nos. 1 and 2 wells. A gravity anomaly 4 miles south east of the village of Woodside was confirmed as a structural high with closure characteristics, by seismic vibroseis methods. Regionally, this local feature occurs in a geophysically determined embayment from the main sedimentary trough.

In the Woodside South No. 1 well a detailed programme of sampling, coring and testing was carried out to obtain maximum geological information regarding oil and gas shows, permeability and stratigraphy. The results of the drilling indicated that the sediments penetrated in the hole did not contain hydrocarbons.

III WELL HISTORY

(i) GENERAL DATA

(a)	Well Name & Number	Woodside South No. 1
(b)	Location	Lat. 38° 34' 25" South Long. 146° 54' 30" East Situate approx. 3¾ miles S.E. of Woodside Township.
(c)	Name & Address of Tenement Holder	Lakes Oil Ltd 792 Elizabeth Street MELBOURNE. Victoria
(d)	District	Gippsland. Victoria
(e)	Details of Petroleum Tenement	PPL 157 issued by the State of Victoria
(f)	Total Depth	5816 Driller 5819 Schlumberger
(g)	Date Drilling Commenced	30th May, 1965.
(h)	Date Drilling Completed	11th July, 1965.
(i)	Date Well Completed	15th July, 1965.
(j)	Date Rig Released	15th July, 1965.
(k)	Drilling time to Total Depth	43 days
(l)	Elevation	Ground 34 ft A.S.L. R.K.B. 46 ft A.S.L.
(m)	Status	Dry, plugged and Abandoned
(n)	Cost	

(ii) DRILLING DATA

(a) Drilling Contractor

Australian Drilling Coy. P/L.
380-386 Queen Street
BRISBANE. Queensland.

(b) Drilling Plant

Make	National
Type	50
Rated capacity with 4½" Drill Pipe	7500 ft.
Motors	
Make	General Motors Diesel
Type	2 only Twin 6 Series 71
B.H.P.	312 Continuous

(c) Mast

Make	Lee C. Moore
Type	131 ft Cantilever
Rated capacity	500,000 lbs

(d) Pumps

No. 1	Make	National
	Type	C 250
	Size	7¼" x 15"
	Motor	General Motors diesel driven off Drawworks compound
No. 2	Make	National
	Type	C250
	Size	7¼" x 15"
	Motor Make	General Motors
	Type	Twin 6 Series 71 Diesel
	BHP	312. Independent Drive

(e) Blowout Preventer Equipment

1.	Make	Cameron
	Size	12" Type 'SS'
	Series	900
2.	Make	Hydril
	Size	12" Type 'GK'
	Series	900

(f) Hole Sizes & Depths

Depths taken from R.K.B.

23" Hole	R.K.B. to 26 ft.
17½" "	26 ft. to 332 ft.
12¼" "	332 ft " 3065 ft.
8¾" "	3065 ft " 5816 ft. T.D.

(g) Casing & Liner Details

Depths taken from R.K.B.

1. Conductor Pipe

Size	20"
Setting Depth	26 ft.

2. Surface String

Size	13⅜"
Weight	48 lbs/ft.
Grade	H40
Range	11
Setting Depth	327 ft.

3. Intermediate String

Size	9⅝"
Weight	36 lbs/ft.
Grade	J55
Range	111
Setting Depth	3064 ft.

(h) Casing & Liner Cementing Details

1.	Size	20" Conductor Pipe
	Setting Depth	26 ft.
	Quantity Cement used	81 cub. ft.
	Method used	Poured from surface in washed-out annulus by bulk cement tanker
2.	Size	13⅜" Surface String
	Setting Depth	327 ft.
	Quantity Cement used	340 bags plus 2% calcium chloride
	Cement to	Surface
	Method used	B.J. Cementing Service. Guide Shoe and Top Plug only
3.	Size	9⅝" Intermediate String
	Setting Depth	3064 ft.
	Cement to	513 ft (from R.K.B.)
	Method used	B.J. Cementing Service. Guide Shoe, Float Collar, Top & Bottom plugs.

(i) Drilling Fluid

(a)	Type	Conventional bentonite wate. from zero to 380 ft.
	Treatment	Water only.
(b)	Type	Fresh water/bentonite/ lignosulphonate
	Treatment	As prescribed by Munro Mud Sales Service using Milcon, Unical and CMC to control viscosity and water loss

Average Weekly Mud Analysis

Week	Depth ft	Weight lbs/gal	Viscosity secs	W.L. c.c.s	F.C.	P.H.	Sand %
1	1713	9.3	47	6.4	2/32	9.5	3
2	3065	9.1	44	7.4	2/32	9.0	3
3	3509	9.3	47	7.0	2/32	9.5	2
4	4550	9.7	44	6.9	2/32	9.2	3
5	5010	9.9	40	7.5	2/32	9.0	2
6	5800	10.2	42	8.3	2/32	9.0	2
7	5816	10.4	43	8.4	2/32	8.5	2

Chemical Consumption

Supercol bentonite	43,000 lbs
Caustic Soda	2,625 lbs
Unical	9,600 lbs
Milcon	6,300 lbs
CMC	1,100 lbs
Calcium chloride	560 lbs
Cement	46½ tons

(j) Water Supply

A Water bore was drilled by W. L. Sides & Son Pty. Ltd. adjacent to Rig-Site.

Size	6"
Depth	170 ft.
Casing Used	6" x 150 ft.
Screens Used	10 ft. with lead packer and bottom blank.
Supply	Water level 20 ft. from surface. Pumping rate 3500 g.p.h. continuous maintained stream.
Pump Used	Pomona 4" x 4 stage submersible pump driven by 6 HP Southern Cross Engine.

(k) Perforations

Nil

(l) Plugging back and Squeeze Cementation jobs

Two plugs for abandonment purposes only were set as follows :-

Plug No. 1.	Shoe	3310 ft. to 2880 ft.	210 Bags Cement with Calcium chloride
Plug No. 2.	Surface	30 ft. to zero	10 bags Cement

(m) Fishing Operations

Nil

(n) Side-tracted Hole

Nil

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(iii) LOGGING AND TESTING — WOODSIDE SOUTH

(a) Ditch Cuttings

Representative lagged samples were collected at 10' intervals throughout the hole and at 5" intervals whilst coring. The samples were collected off the shale shaker, washed, dried, described and split into three and distributed to :

1. Bureau of Mineral Resources, Canberra, A.C.T.
2. The Victorian Department of Mines, Victoria.
3. Woodside (Lakes Entrance) Oil Co., Melbourne, Victoria.

(b) Coring

The original coring programme called for cores to be taken (a) as per B.M.R. requirements for subsidized drilling, (b) on oil or gas shows, (c) on evidence of porosity, and (d) on correlations with reported oil and gas shows on Woodside Nos. 1 and 2 wells, and with gas zones in the Esso Shelf wells. In addition to and in conjunction with this the following stratigraphic cores were required and taken: 1. Tambo River Formation, 2. Gippsland Limestone, 3. Lakes Entrance, 4. Lakes Entrance - Latrobe Valley Coal Measures contact, 5. Latrobe Valley Coal Measures.

In pursuance of these objectives, 24 cores were cut, generally at about 200' intervals, as follows :

Total footage 2600' Cut 499' Recovered 194.3' Percentage Recovery 25.7%

Core No.	Interval	Cut	Recovery	Recovery %	Type of Core Head
1	380- 389'	9'	0'	0	HTC S/FJ 8¾
2	389- 408'	19'	0'	0	" "
3	408- 427'	19'	0'	0	" "
4	610- 630'	20'	10'4"	52	" "
5	1237-1257'	20'	10'	50	" "
6	1257-1277'	20'	2'	10	" "
7	1687-1713'	26'	21'11"	84.6	Chris Diamond 6½
8	1946-2006'	60'	8'1"	13.5	" "
9	2193-2213'	20'	2'	10	HTC S/FJ 8¾
10	2403-2423'	20'	1'	5	" "
11	2613-2633'	20'	1'	5	" "
12	3036-3055'	19'	7'	38	Chris Diamond 6½
13	3279-3299'	20'	17'5"	87	HTC S/FJ 7⅞
14	3489-3509'	20'	2'6"	8	" "
15	3710-3730'	20'	5'	25	" "
16	4020-4030'	10'	10'	100	HTC H/FJ 8¾
17	4330-4332'	2'	1'	50	" "
18	4332-4352'	20'	14'	70	" "
19	4550-4570'	20'	18'	90	HTC S/FJ 8¾
20	4770-4787'	17'	16'	94.1	" "
21	4990-5010'	20'	18'	90	" "
22	5207-5222'	15'	5'	33	" "
23	5452-5469'	17'	4'	82.3	" "
24	5800-5816'	16'	10'	62	HTC H/FJ 7⅞.

Recovery of cores was generally poor in the top 2600' due to the generally poorly consolidated nature of the sediments. Samples of the cores were sent to the Bureau of Mineral Resources, Canberra, the remainder being shipped to the Victorian Department of Mines.

(c) Side Wall Sampling

Nil

(d) Electric and other logs

The hole was logged by Schlumberger Seaco as follows :

(i) Electric Logs :

Run 1	324 - 3066'
Run 2	3064 - 5818'

(ii) Microlog - Caliper

Run 1	324 - 3066'
Run 2	3064 - 5818'

(iii) Sonic - Caliper

Run 1	324 - 3051'
Run 2	3064 - 5815'

(iv) Continuous Dipmeter

Run 1	3064 - 5819'

(v) Gamma Ray Log

Run 1	324 - 3051'
Run 2	4080 - 5819'

The Gamma log was run in conjunction with the Sonic-caliper log. Malfunction in the Gamma Ray tool resulted in no reading in the interval 3051 - 4080'.

(e) Drilling time and Gas Log

Drilling times were recorded by means of a Geolograph located on the rig floor.

A Johnson-Williams gas detector affixed to a Honeywell-Brown continuous recording unit was in operation throughout the drilling of the well. No hydrocarbon shows were encountered during the drilling with the exception of non-significant minor amounts of trip gas in the Tertiary.

Woodside South

(f) Formation Testing

The following drill stem tests were run :

DST No.	Interval	Method	Recovery
1.	1944-2000'	Dual Open-hole Packers	120 Linear ft. Mud
2.	2012-2213'	" " "	(1640 lin.ft. fresh water (270 " " Mud
3.	2431-2633'	" " "	2 " " "
4.	2857-3035'	" " "	940 " " fresh water
5.	3130-3299'	" " "	30 " " mud
6.	3318-3509'	" " "	105 " " "
7.	3560-3760'	" " "	1180 " " muddy salt water 350 lin.ft. clear salt water 540 lin.ft. Mud
8.	4152-4352'	" " "	370 " " "
9.	4360-4570'	" " "	850 " " "
10.	4610-4787'	" " "	180 " " "
11.	4800-5010'	" " "	90 " " "
12.	5259-5469'	" " "	530 " " Muddy salt water 180 lin.ft. Mud
13.	5600-5816'	" " "	140 " " "

Successful drill stem tests were obtained in each case, with dual packers holding for the duration of the test in open-hole. For detailed information regarding drill stem tests see Appendix No. 2.

(g) Deviation Surveys

Surveys of the deviation of the hole from vertical were taken at various intervals, as follows, of the wall by using a double recorder Totco inclinometer.

Depth	Deviation
100'	½°
200'	¼°
322'	¼°
600'	¼°
1237'	¾°
1475'	Zero
1687'	¼°
1946'	¼°
2403'	½°
3000'	¾°
3279'	½°
3485'	¾°
3705'	1°
4015'	½°
4290'	1°
4550'	2°
4765'	2½°
4985'	3½°
5207'	2½°
5452'	2½°
5715'	3°
5795'	3½°

(h) Temperature Survey

Nil

(i) Other Well Surveys

A continuous dip-meter Survey was run by Schlumberger from Total depth to 3064 ft. (see Electrical Logging).

IV GEOLOGY

Woodside South

(1) Summary of Previous Work

Fairly extensive geological and geophysical investigations have been carried out in the Gippsland basin. The discovery of oil in the Lakes Entrance area in 1924 stimulated exploration activities in the general area. Geological and geophysical surveys have been carried out under the auspices of the Victorian Department of Mines, Bureau of Mineral Resources and various oil companies, notably Woodside (Lakes Entrance) Oil Co.

More specifically a number of investigative and drilling programs have been undertaken in the western part of the Gippsland basin area. A total of seven wells have been drilled in the immediate area surrounding Woodside No. 1 South. These are Gippsland Nos. 1A, 2, 3 and Woodside Nos. 1, 2, 3 and 4 wells. The information available from these wells is poor and geological control and testing was very limited. The basic Tertiary-Upper Mesozoic sequence was, however, outlined from these wells. The reported oil and gas shows in Woodside Nos. 1 and 2 holes provided part of the impetus for drilling Woodside South No. 1.

The principal exploration tool in the west Gippsland basin has been geophysical. In the immediate vicinity of the Woodside South No. 1 wellsite a magnetometer, gravity and vibroseis seismic survey have been carried out. S. Watson (1964) has summarised the geophysical aspects of the area in the subsidy application for this well.

Briefly the results of the magnetometer survey (BMR Map 756/B1-2 (r)) and Quilty's interpretation (BMR record 1962/63) indicate a major sedimentary basin lying offshore east of Lake Wellington with an embayment extending onshore between Woodside and St. Margaret's Island.

The gravity survey (BMR Bougier Anomaly maps 693-38) support this idea of an embayment with a low gravity anomaly (30 to 35 milligals) between Woodside and St. Margaret's Island. In addition (BMR 693-38) shows a distortion of the gravity contours four miles south of Woodside. S. Watson (1965) interprets this as a local high in the Mesozoic, with deficiencies of Tertiary material occurring as a result of this local erosional high in the Pre-Tertiary landscape of later Tertiary uplift of the basement.

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The Vibroseis survey (Appendix No. 4) confirmed the gravity high and on this basis a Tertiary Mesozoic test well was recommended.

(2) Summary of Regional Geology

The Gippsland Tertiary basin, occupying an area of some 3000 square miles onshore and extending offshore, is bounded in the north by Palaeozoic rocks and in the west by Cretaceous and Jurassic sediments. The surface cover near the present wellsite (situated in the western part of the Gippsland basin) consists of Quaternary and Tertiary sediments. Mesozoic sediments outcrop to the west and north of the wellsite (Plate 1).

The basement in the area is thought to consist of Palaeozoic metasediments intruded by granites, and, as indicated by geophysical methods, lies at depths greater than 10,000' in the central portions of the basin. Lake Wellington No. 1 penetrated 8226' of Mesozoic sediment without reaching basement, whilst nearer the wellsite 5,200' of Mesozoic sediments were penetrated by Woodside No. 2 well without reaching basement. Northwards S.W. Bairnsdale No. 1 penetrated Carboniferous sediments at 3806'. Above basement, an angular unconfirmity is present between marine Lower and Middle Devonian sediments. These are overlain, again unconformably, by Upper Devonian sediments with some lavas. Mesozoic sediments form the highlands west of the Tertiary basin, and are overlain unconformably by Tertiary sediments. Permian sediments are almost completely absent but did occur in Duck Bay No. 1 well.

A generalised stratigraphic succession of the Tertiary and Mesozoic in the area may be represented thus :

	Age	Formation	Rock Type
TERTIARY	Pliocene	Jemmy's Point formation.	Fossiliferous limestone and sands.
	U.Miocene	Tambo River formation	Fossiliferous marls
	Miocene	Gippsland Limestone	Limestones, Marls, shales and siltstone
	Oligocene	Lakes Entrance formation	Marls, limestone and shales
	L. Oligocene U. Eocene	Latrobe Valley Coal Measures	Sands, gravels and coals.
	Mesozoic	Strezlecki Group	Sandstones and shales

The Eocene sediments become more marine eastwards with basalt flows developed in the basal sections apparently restricted to the principal parts of the trough. Upwards a succession of marine limestones and marls of the Miocene or Upper Oligocene may be noted.

The sediments of the Strezlecki group form a monotonous sequence of sandstones and shales presumably deposited in a rapidly sinking basin.

(3) Stratigraphic Table

	Age	Formation	Rock Unit	Top	ASL	Thickness
T	Pleistocene & Recent	Alluvium		Surface	(+16')	20'
E	Pliocene	Jemmy's Point	Fossiliferous sands & minor limestones	20'	(+26')	583'
R	Miocene	Tambo River	Marls	603'	(-577')	145'
T		Gippsland Limestone	Fossiliferous marls and limestones	748'	(-702')	930'
I	Oligocene	Lakes Entrance	Marls, Glauconitic marls, clays and limestones	1678'	(-1632')	265'
A	Oligocene-Eocene	Latrobe Valley Coal Measures		1943'	(-1897')	1310'
R			1. Coal Measures	1943'		517'
Y			2. Fresh Water Sandstones and gravels	2460'		545'
			3. Basalt, Weathered basalt and Clays	3005'		248'
M		Strezlecki Group		3253'	(-3207')	2563'
E			1. Mudstone unit	3253'		122'
S			2. Mudstone-sandstone	3375'		245'
O			3. Sandstone-shale	3620'		2196'
Z			Total Depth	5816'		
O						
I						
C						

Woodside South

(4) Stratigraphy

(i) Tertiary.

The Tertiary is broadly divisible into four principal lithologic units :

Post Miocene shell beds and gravels of the Jemmy's Point Formation.

Marine Tertiary marls and limestones of the Tambo River, Gippsland Limestone and Lakes Entrance formations.

Non marine coal measures and fresh water gravels.

Basal, weathered basalt sequence.

Distinction between these major units is fairly readily accomplished, but subdivision within the units is less distinct.

(i) Jemmy's Point Formation: 20-603' 583' of sands, shelly sands and minor marls.

The topmost 140' of this formation is a sequence of white-light grey, fine and coarse unconsolidated sands consisting of poorly sorted sub-angular quartz grains set in a loose clay matrix. In places, the sands are partly consolidated in a marl matrix. Various degrees of staining are apparent in the cuttings including, principally yellow limonite staining and orange-grown weathering stains. There is a gradational contact between the topmost unit and the underlying unit which consists of 60' of grey-brown sandy and fossiliferous marls with sub-rounded quartz grains and shell fragments (pelecypods, gastropods and foraminifera) in a calcareous argillaceous matrix. Below this a sequence of ill sorted, light grey, fine-pebbly unconsolidated sands with a marly matrix. The basal 93' of the Jemmy's Point formation is comprised of unconsolidated shelly sand with gastropods, Turritella, Voluta, echinoids and pelecypods and clear and dull coarse and pebbly quartz in a sparse calcareous argillaceous matrix.

Electrical Characteristics :

No electric log information is available for the first 325' (surface casing). Below this, the S.P. curve is featureless with a slight positive deflection and the 16" normal shows resistivities of the order 15-25 ohms-m^2/m. with no marked character. The caliper log indicates caving conditions with the microlog showing streaks of positive separation. The Gamma-ray log shows fairly consistent readings of between 24-36 ADI units, whilst the sonic log shows travel times of 170 microseconds per foot at the top of the formation decreasing to 50 microseconds per foot at the base.

(ii) Tambo River Formation at 603-748' 145' of grey, partly fossiliferous marls.

This formation comprises a sequence of grey marls which are generally highly fossiliferous with a variety of shell fragments ranging from very fine to coarse included in an argillaceous calcareous partly kaolinitic matrix. The top 130' of the formation is very finely arenaceous and silty with occasional bands of orange quartz grains, pebbles and volcanic pebbles. Occasional gradation to a massive structureless grey clay is also evident. One core was cut in the top of this unit (Core No. 4 (610-630'). This core shows a fairly consistant lithology as above with variations in shell and sand content. For the most part the shells are segregated in bands with the intervening more kaolinitic portion showing a paucity of fossil fragments. The fauna fresent in both cores and cuttings include gastropods, pelecypods, corals, echinoderm plates and occasional foraminifera.

Electrical Characteristics :

The S. P. Curve remains featureless through this formation. The 16" normal indicates resistivities of 15-20 ohms M^2/M, being slightly lower than in the overlying formation. The Tambo River is characterised by a slight decrease of resistivity to 13 ohms M^2/M at the very top of the unit. Neither the microlog or the caliper log would indicate any porosity. The sonic log indicates slow sonic velocities ranging from 155-130 microseconds per foot with Gamma-ray values ranging from 24-40 ApI units.

(iii) Gippsland Limestone 748-1678' 930' of fossiliferous limestone and marls.

This formation consists of a limestone-marl sequence with a line of demarcation between marl and limestone often obscure. The topmost 400' is basically a marl-marly limestone unit whilst the basal portion is primarily a limestone with some marly interbeds. The sample cuttings indicate the presence of a cream-light brown fragmental limestone with micro macro fossils (gastropods, pelecypods, corals and crinoids) in a variably kaolinitic partly argillaceous-calcite mud matrix. Silt and occasional fine to medium quartz grains are fairly common. The marls present in the cuttings grade from the limestone as described above with the argillaceous and silt content of the matrix increased.

In the basal 300' the limestone varies to white or light brown in colour, with the fossils being included in cryptocrystalline matrix. Occasional traces of glauconite are present. One core (Core No. 5 1237-1257') was cut in this unit. This core consisted of marl and marly limestone, grey in colour, fossiliferous and very sandy with occasional glauconite and secondary calcite.

Electrical Characteristics :

The SP curve is featureless while the 16" normal reads values ranging from 8 to 22 ohms m^2m with the lower values occuring in the marl units near the middle of the formation. The caliper log indicates that the hole remained in gauge with the exception of minor caving, which reached a maximum at the top and bottom of the marl unit mentioned above. The microlog reflects the thinly interbedded nature of the Gippsland limestone, with more resistive limestone interbedded with less resistive marls. Some positive separation is apparent in places. The Gamma Ray curve indicates only minor fluctuations between 24 - 43 API units. The sonic log reflects the streaky nature of the Gippsland limestone but shows an overall increase in velocity from about 140 microseconds perfoot near the top of the formation to 85 microseconds per foot at the base.

(iv) Lakes Entrance Formation 1678'-1943' 265' of Marls, glauconitic marls and clays.

The top of the Lakes Entrance formation is herein defined on an easily recognisable marl - limestone lithology break at 1678'. Various authors have differently defined this top at 1804' and 1850' based on electric, microlog and faunal characteristics.

The cuttings are comprised of grey and dark grey, brown, green gummy marls containing fossils, occasional mica flakes and minor amounts of sand and silt in an argillaceous-calcareous partly kaolinitic matrix. In places this grades to and is interbedded with a grey-green structureless glauconitic clay along with minor shale and mudstone streaks. A minor grey-white marly sandy and glauconitic limestone is also present, which shows occasional non-effective vugular and leached porosity especially in the top 62'.

Downwards the marl becomes greener, more glauconitic and silty, with the content of the glauconitic clay increasing and eventually predominating in the basal 90'. This glauconitic clay, in conjunction with occasional pyritic bands, provides a useful marker for the basal Lakes Entrance. Two cores (Nos. 7 1687'-1713' and No. 8 1946'-2006') were cut. Core No. 7 shows a sequence of marls, shaley marls and limestones with occasional interbedded marly limestones. In-

dications of horizontal bedding are present.

Core No. 8 is of interest in that it straddles the Lakes Entrance - Latrobe Valley Coal Measures contact. The core indicates that the basal 7' of the Lakes Entrance formation consists of marl and limestone overlying 2'7" of green glauconitic, arenaceous, structureless clay. This clay is occasionally pebbly, and is separated from the top Latrobe Valley coal seam by 9" of brown silty clay.

Electrical Characteristics :

The SP curve shows a very slight positive shift (10 milivolts) as compared to the Gippsland Limestone and remains consistent throughout the formation. The resistivity curve shows a marked decrease in value with respect to the overlying Gippsland limestone. Values of about 2 ohms m^2m for the 16" normal occur over much of the unit. Near the top of the unit higher values occur with one interbed reading 15 ohms m^2m. The caliper log indicates moderately bad caving especially in the lower parts of the formation. The presence of numerous highly resistive streaks in the upper parts is indicated from the microlog. This log also indicates that the sequence is tight.

The gamma ray curve indicates a higher level of natural radioactivity for the formation as compared to the Gippsland Limestone. Values range from 24 to 84 API units. The sonic log indicates that velocities in the Lakes Entrance formation are considerably slower than the overlying Gippsland limestone and parts of the underlying coal measures. Velocities range from 90-115 microseconds per foot, the slower values tending to be in the lower parts of the formation.

(v) Latrobe Valley Coal Measures: 1943'-3005': 1310' very poorly consolidated sandstones and gravels, coals and basal weathered basalts.

Three lithologic units were determined from sample cuttings and cores, as follows :

(a) Coal Measures 1943'-2460'. This unit is 517' thick and consists dominantly of sandstones and gravels, with a few coal seams. The sandstones and gravels are generally very poorly consolidated and range from very fine to pebbly. They consist of sub angular to sub rounded poorly sorted quartz in a sparse kaolin matrix which washes out fairly readily. Occasional consolidated bands occur throughout the sequence where a tough clay matrix is present. These persist over intervals of 10 feet or less and provide invaluable packer seats for drill stem testing. Coal seams

with accompanying earthy carbonaceous material are present in the unit. The coal is light to dark brown, earthy, and contains numerous wood fragments. Occasional thin interbeds of grey, calcareous splintery shale also occur throughout the unit.

Two cores were cut in this unit: Core No. 9 (2193'-2213') and Core No. 10 (2403'-2423'). Due to the poorly consolidated nature of the rock, very poor recoveries were obtained. Only the more consolidated sandstones and minor coal fragments were recovered from the core barrel.

(b) Fresh water gravels: 2460'-3005' 545'
Poorly consolidated sandstones and gravels.

The sandstones and gravels as in the overlying unit are the dominant lithologic types. Grain sizes vary but are generally in the coarse-pebbly range. In the basal 150' evidence of interstitial dolomitic material and minor pyrite was noted. Minor coals are also present.

One core, (No. 11 2613'-2633') was cut. Only one foot recovery was obtained which consisted of consolidated sandstone with a clay matrix and minor coal.

Electrical Characteristics :

The SP curve reflects the fresh water content of the Latrobe Valley Coal Measures showing positive readings with respect to some of the non porous clayey sections. This reversal is also apparent in some of the coal seams which show negative SP fluctuations instead of the normal positive fluctuations. The Resistivity curves have higher values than the overlying Lakes Entrance formation, again largely due to the fresh water content of the sandstones and gravels. Some of the coal seams are also fairly resistive. Resistivities as shown by the 16" normal vary from 10-100 ohms m^2m. The fresh water gravel unit (b) shows consistently higher resistivity values than the coal measure unit (a) with values averaging around 45 ohms m^2m as due to the fresh water content throughout.

The caliper log indicates that the hole remained reasonably in gauge throughout with only minor caving in excess of 2 - 3 inches. The microlog reflects the interbedding of coal and sandstone and shows positive separation in a number of porous sandstone units in the upper coal unit (a). In the lower fresh water gravel unit positive separation is general throughout indicating a gross porous section of 530 feet.

The gamma ray log shows fairly low values in the sandstones of both units with values ranging from 8 - 60 API units. The coal interbeds, on the other hand, show values markedly higher than the fresh water filled sandstones with values between 120 - 144 API units. This is a distinctive characteristic of the coal seams, making their position readily recognizable. Sonic velocities are very variable ranging from slow values as low as 170 microseconds per foot in the unconsolidated sandstone sections to as fast as 85 microseconds per foot in the more consolidated sandstones. Some of the coal seams also read slow sonic velocities.

(c) Basalt 3005'-3253': 248' of weathered basalts and minor red clay soils.

Sample cuttings and Core No. 12 (3036'-3055') indicate the presence of highly altered basalt, blue-grey in colour, with very fine kaolinized feldspars, partly decomposed ferromagnesium minerals and limonite infilled micro vesicles (possibly the result of zeolite decomposition). The basalt is chloritic and pyritic. Sample cutting quality in this interval was very poor. The core showed the massive nature of the basalt with occasional fractures at 45^{o} to core axis. Very occasional traces of fresh basalt were also evident in the cuttings.

From 3110'-3253' the cuttings indicated that basalt was present in an advanced stage of alteration. Over much of the interval the basalt was wholly kaolinized to give massive clay interbedded with orange-brown volcanic clay soils.

Electrical Characteristics :

The SP curve of this section is rather featureless except in the upper part where it is apparently affected by the casing shoe near the top of the unit. The resistivity values are low as compared to the highly resistive fresh water filled sandstones of the overlying units. Readings on the 16" normal commonly range between $2\frac{1}{2}$ and 7 ohms m^2m. The caliper log indicates caving, from the $8\frac{3}{4}$" bit size to as much as 17". The average hole size is about 13 inches. The microlog shows lower resistivities as compared to the overlying sandstone and gravel units. The sonic log indicates rather low velocities between 126 and 155 microseconds per foot in the upper part with higher velocities of 140 - 75 microseconds per foot prevailing in the lower part of the section.

(ii) Mesozoic (Strezlecki Group) 3253'-5816'+ 2563'+ of mudstones, sandstones and shale.

The base of the Mesozoic Strezlecki group was not encountered in this well. Total depth was reached after penetrating 2363' of mudstones, sandstones and shales.

Subdivision of this sequence into component units is somewhat arbitrary. For convenience of description three fairly distinct lithologic units are recognized.

(a) Mudstone unit 3253'-3375'

A massive grey-green mudstone constitutes the top of the Mesozoic sequence. This is partly kaolinitic, slightly calcareous with, in part, well developed carbonaceous plant remains and partings. Minor interbeds are present of grey, very fine arenaceous siltstone grading to a grey-green very fine grained feldspathic kaolinitic sandstone. Core No. 13 (3279'-3299') illustrates this lithology and shows in addition horizontal bedding and minor cross bedding.

Electrical Characteristics :

This section is very similar electrically and sonically to the lower part of the overlying weathered basalt and clay soil unit. This is probably a function of the high clay content of both units and reflects a zone of weathering encompassing both the lower basalt (volcanic clay soil) section and the upper portions of the Mesozoic mudstone.

(b) Sandstones and Mudstone unit 3375'-3625'

Primarily this interval comprises a sequence of sandstones with minor siltstones and mudstones. A green, grey, fine to medium grained, poorly sorted sandstone predominates with thin interbeds of mudstones and siltstones. The mudstones present are similar to those in the first unit, whilst the siltstones are light grey in colour, more or less arenaceous, and contain coal fragments and high percentage of mud material. Core No. 14 (3437'-3509') indicates that the sandstone consists of angular to sub-angular quartz, igneous and sedimentary rock fragments and kaolinised feldspar in an argillaceous chloritic matrix, and that occasional carbonaceous bands are present showing horizontal bedding.

Electrical Characteristics :

The SP curve shows little departure from the shale base line with only minor fluctuations up to a maximum of 8 millivolts. The resistivities of the sandstone units, on the other hand, show increased values relative to the

overlying mudstone unit, with values of the order 10 - 15 ohms m^2m. The caliper log indicates caving up to a maximum of 13 inches. The microlog does not indicate any positive separation thus tending to confirm the lack of effective porosity as suggested by the SP curve. The sonic log indicates a velocity increase relative to the overlying mudstone unit, with velocities fairly consistent between 75 and 90 microseconds per foot. The gamma ray log was not functioning over this interval.

(c) Sandstone and shale unit 3625'-5816' (Total Depth)

This sequence consists of interbedded sandstones and shales with minor siltstones and mudstones.

The sandstone beds which are in part shaly vary in thickness from 35 to 90 feet. While the shale beds vary from 35 to 100 feet. In general bed thicknesses below 4625' increase markedly up to a maximum of 350 and 230 feet for the sandstone and shale respectively.

Cores Nos. 15 (3710'-3730'), 16 (4020'-4030'), 19 (4550'-4570', 20 (4770'-4757'), 22 (5207'-5222'), 23 (5452'-5469') and 24 (5800'-5816') in conjunction with sample cuttings illustrate the fairly consistent nature of the sandstone beds. The sandstone is green-grey in colour, fine and partly medium grained, generally poorly sorted with sub-angular quartz (about 60%), rock fragments (both volcanic and sedimentary) (about 15%), and pink-orange partly altered and kaolinised feldspar (about 15%) in an argillaceous part chloritic and kaolinitic matrix. In addition occasional included mica and coal flecks occur. The cores also indicate the presence of minor coaly and carbonaceous streaks. A sandstone type sub-greywacke (Pettitjohn 1956) is consistent with this litholog.

Minor variations of this basic lithology occur. The basal 2' of Core No. 16 (4020'-4030') shows abundant veinlets and fractures infilled with calcite. From the cuttings this calcite development would appear to persist through the interval 3980'-4070'. The basal 1 foot of Core No. 20 (4770'-4787') illustrates the occasional almost completely kaolinised sandstone streaks that occur sporadically throughout this unit. These are generally associated with coal streaks and bands of sandstone with included shale and carbonaceous fragments. Occasionally the sandstone is calcareous.

Core No. 23 (5452'-5467') shows indistinct bedding at 25° to 35°, bedding plane cleavage and minor fractures infilled with argillaceous material. The bottom hole core (Core No. 24 5800'-5816') consists of a grey sandstone as described above with indistinct bedding at 0° to 2°.

Cores Nos. 18 (4332'-4352') and 21 (4990'-5010'), together with the cuttings illustrate the lithology of the shale interbeds. Basically the shale is light, dark and bluish grey in colour, massive, silty and micromicaceous. This grades to and is interbedded with a light grey, blocky, very finely arenaceous siltstone with carbonaceous and coaly streaks. Occasionally this siltstone is well developed as in the intervals 3625'-3675', and 3890'-3980'. Variations on this shale type occur in places. Considerable amounts of kaolinitic material are included with the shale and some thin units (e.g. 5310'-5335') are present of grey brown, massive and structureless clay interbedded with sandstone. Occasionally the shale grades to mudstone with variable amounts of plant remains included. Below 5675' the shale becomes calcareous. Core No. 21 (4990'-5010') shows bedding at 10° with high angle fracture cleavage at 70° to 80°, in the siltier portions of this core.

Summarizing, the two basic rock types of this interval show fairly constant lithologies with only minor variations due principally to clay content, gross aspect and degree of interdigitation.

Electrical Characteristics :

The SP curve reflects the salt water content of the generally tight Strezlecki sandstones as contrasted with the fresh water drilling mud. Negative deflections of up to 35 millivolts above the shale base line are evident in a number of places. This variation is not a measure of effective porosity but rather a function of the difference in salinities mentioned above. The general absence of effective porosity is evidenced by a series of drill stem tests, all but two of which recovered only mud.

The resistivity curve shows a great deal of character varying between about 8 ohms m^2m for the shale sections and generally between 15 and 30 ohms m^2m for the sandstone sections.

The caliper log indicates a reasonably in gauge hole for the sandstones with caves generally not exceeding 2 to 3 inches. The shale sections tend to cave to as much as 16 inches. The microlog shows the streaky nature of much of the sandstones with only very occasional positive separation. This is dealt

with more fully in the Porosity and Permeability section of this report.

The gamma ray curve was run between 4062' and total depth. This log indicates that the Strezlecki sandstones has fairly uniform levels of radioactivity of about 65 API units. Likewise the shale interbeds show a fairly consistentlevel of radioactivity between 90 to 108 API units.

The sonic log indicates sandstone velocities in the range of 75 microseconds per foot near the top of the unit increasing gradually to about 65 microseconds per foot near the base. In the shale sections velocities up to 110 microseconds per foot occur although a number of shale zones are as fast as 90 microseconds per foot particularly in the lower parts of the section.

(5) Structure :

The structural data obtained from drilling tends to confirm the geophysical diagnosis. Structure contours and isopachs drawn on Woodside Nos. 1, 2 and Woodside South No. 1 holes indicate that drilling took place on the south-east flank of an anticlinal feature in the Mesozoic. Indications are that the Tertiary beds strike south-west - north-east, parallel to the beach with dips ranging from horizontal to 4° south-east.

The Latrobe Valley coal measures show only minor thinning (40') from Woodside No. 1 to Woodside South No. 1, of which the basal basalt accounts for 20'. This, however, could be a function of the inadequate logging of Woodside No. 1, although some thinning over the pre-Tertiary high might be expected.

The absence of the salt water gravels in Woodside No. 1 South as compared to Woodside No. 1, is presumably a function of the pre-Tertiary high and consequent pinchout. Dips determined from the cores indicate a horizontal attitude for the Tertiary, but these are indistinct except in Core No. 7, where dips of 1 - 2° were observed. Similarly dips obtained from the Mesozoic cores are somewhat indistinct :

Core No.	13	0-2°	Core No.	19	10°	
	14	0°		20	5°	
	15	3-4°		21	10°	
	16	?		22	?	
	17	?		23	25-30°	indistinct
	18	20°		24	0- 2°	indistinct

These dips indicate a steepening of dips downward in the Mesozoic, although most readings were indistinct as due to the uniform nature of the lithology.

A dipmeter survey was run in the interval 3064-5819' (Appendix 3). In the interval 3084-3249' (Basalt) recorded dips vary from 2-54° with a mean of 12° - 18°. The direction of dip varies widely, sufficient to make interpretation meaning-

less. Woodside South 26.

The readings recorded in the Mesozoic are also somewhat erratic. Taking the No. 1 correlation class only two major dip and strike classes may be recognised :

i) 3242-5044' dip 12° at N.87°E.

ii) 5044'-T.D. dip 26° at N.45°W.

Wide variations on these average readings do however occur especially in the lower interval 5044-T.D, where dip directions range from S.50E to N.26W.

From these readings a major reversal of structure at 5044' must be assumed. No supporting evidence of unconformities etc. is apparent from the lithologies, although the thickly interbedded nature of this part of the sequence would reduce the reliability giving variations mentioned above.

Summarily a disparity in dip directions of approximately 45° is apparent between the Mesozoic and Tertiary strata.

(6) Occurence of Hydrocarbons :

No fluorescence due to hydrocarbons or any traces of oil staining were detected during the examination of samples at the wellsite. The gas detector did not record the presence of any hydrocarbons apart from those used in testing the equipment and minor quantities of non-significant trip gas. In the porous water bearing Tertiary sediments there were no hydrocarbon residues that would suggest flushing. The drill stem test recoveries numbers 8 and 9 showed a certain amount of 'aeration'. No hydrocarbon classification was detected when these were checked on the gas detector.

(7) Porosity and Permeability :

(i) Tertiary

(a) Jemmy's Point formation.

The unconsolidated nature of these sediments imparts good porosity and permeability. Electric logs are not available for the first 320' (surface casing). For the interval 320-603' streaky porosity is indicated but caving conditions make interpretations somewhat unreliable. Sonic log computation would indicate porosity in excess of 30%.

(b) Tambo River formation

In general a tight section with the marl-clay content of the section restricting permeability.

(c) Gippsland Limestone

Generally streaky porosity is developed throughout the sequence. The thinly interbedded nature of the formation is indicated from the electric logs with thin porous intervals interbedded with tighter more highly resistive limestones. Sonic log porosities to a maximum of 20-30% are indicated. In the interval 1260-1678' the section becomes tighter and the porosity takes on a more streaky nature. The marly nature

of the sediments indicates that this porosity is probably not effective.

(d) Lakes Entrance Formation

A generally tight high clay content section is indicated, from both samples and electric logs. Core No. 7 (1687-1713') is of interest in that it shows fair leached and minor vugular porosity in the limestone portions. This porosity however, is non-effective and very little permeability is indicated. Similar or poorer leached characteristics were noted in Core No. 8 (1946-2006') at the base of the formation. It would appear that this leaching is developed primarily in the top 62' of the formation and thereafter developed only as occasional streaks. Drill stem test No. 1 tested the base of the formation and no fluid recovery was obtained. This section should be watched carefully in future wells where more intense conditions of leaching might prevail.

(e) Latrobe Valley Coal Measures

This sequence of very poorly consolidated sandstones and gravels shows generally good porosities with the sonic log indicating porosity values of up to 30%. The occasional consolidated clay sandstones probably do not provide significant reservoir separation between the porous beds. The lower fresh water gravel unit shows especially well developed porosity with virtually continuous positive separation throughout.

Drill stem tests 1 - 4 and the electric logs demonstrate the fresh water bearing characteristics of the section. Drill stem test No. 2 (2202-2213') gave the maximum recovery from this interval with 1640' of fresh water. These tests however do not reflect the true permeability of the sandstones as extensive filling and blocking of the test tool by the very poorly consolidated sands and gravels reduced fluid recoveries. The fresh water characteristics of the electric logs have been previously discussed in the stratigraphy section of this report. The basal basalt sequence was tight throughout.

The Latrobe Valley Coal Measures are of particular interest since the discovery of gas in the Esso offshore shelf wells. Favourable permeability conditions are present in the Woodside South No. 1 coal measure sequence, but gas or oil shows are absent.

(f) Mesozoic Strezlecki group)

An extensive programme of coring and testing was undertaken in this section to evaluate fully all zones of possible interest encountered in Woodside wells No. 1 and 2.

Summarily, only limited streaky porosity was noted in the samples and electric logs. Drill stem tests Nos. 7 (3560-3760') and 12 (5289-5469') were the only tests to indicate permeability. Drill stem test No. 12 indicated the best permeability yielding a total of 2070' of mud and salt water from a 12' zone of porosity ranging from 15-20%.

The remainder of the drill stem tests of the Strezlecki group recovered only various amounts of mud. This fact, along with evidence from the logs and samples, indicates a generally tight sequence.

The following more detailed breakdown of porosity and permeability may be made :

(i) Mudstone unit 3253-3375'

This section of mudstones is tight as evidenced by sample cuttings, core No. 13, electric logs and drill stem tests Nos. 5 and 6 (over intervals 3130-3299' and 3318-3509') which recovered 30' and 150' of mud respectively.

(ii) Sandstone-Mudstone unit 3375-3625'

The dominant sandstone in this unit is non-porous. The electric logs also give no indication of porosity or permeability. Drill stem test No. 6 (3318-3509') yielded 105' of drilling mud. Drill stem test No. 7 (3560-3760') which partly covered the lower part of this unit recovered 1530' of salt water and 540' of mud. Evidence from electric logs and samples indicate that this recovery was obtained from the underlying unit.

(iii) Sandstone-shale unit 3620-5818'

The sandstones in this interval are generally tight with sporadic streaky intergranular porosity.

In the interval 3696-3725' streaks of porosity totalling 12' of 15-20% sonically computed porosity are present. The samples indicate poor-fair intergranular porosity and drill stem test No. 7 (3560-3760') recovered 1530' of salt water from this zone.

The interval 3905-3912' shows a net of 7' of porosity ranging from 5-11% near the top of a sandstone bed. In the interval 4220-4265' 27' of porosity is evident from the micro-log and samples, with computed values of 12%. No effective permeability is present, however, as drill stem test No. 8 (4152-4352') recovered only 370' of mud.

Occasional very minor streaks of porosity as evident from the microlog occur in the interval 4380-4420'. These are proved non-permeable by drill stem test No. 9 which recovered only mud.

A total of 45' of poor intergranular porosity is developed in the interval 5345-5390'. The sonic log indicates a porosity of 19% at the top of this interval falling off to 14% at the base. Little permeability is present, however as Drill stem test No. 12 (5289-5469') recovered only 530' of salt water.

In summary, only limited streaky porosity is evident in the Strezlecki Group, and the permeabilities are generally poor.

Woodside South

(8) Contributions to Geological Knowledge :

Woodside South No. 1 confirmed the general stratigraphy of the area. Comprehensive geological coverage and a detailed programme of sampling, coring, drill stem testing and logging provided a great deal of definitive information.

Contributions to geological knowledge provided by the well are as follows :

(i) A detailed stratigraphic analysis of the Tertiary and upper part of the Mesozoic sequence of the Western Gippsland basin were obtained.

(ii) The restricted distribution in the area of the basal Tertiary salt water gravels was demonstrated.

(iii) The detailed programme of testing supplied information regarding reservoir characteristics and pressures especially in the Tertiary Latrobe Valley Coal Measures.

(iv) Favourable reservoir characteristics and a thick porous section was indicated for the Latrobe Valley Coal Measures. The section of the Mesozoic (Strezlecki group) penetrated, however, showed only limited porosity and permeability. The thickly interbedded sandstone-shale nature of the Mesozoic showed that good reservoir separation could be expected should effective permeability and porosity be developed in nearby areas.

(9) Paly

PALYNOLOGICAL EXAMINATION OF SUBSURFACE SAMPLES FROM ONSHORE GIPPSLAND BASIN BY A. D. PARTRIDGE (ESSO AUSTRALIA LTD). ,1978

Alberton East-1: Core at 801 feet
Lithology: Micaceous, clay choked sandstone.
Age: Proteacidites tuberculatus Zone (Oligocene to Early Miocene).
Remarks: This sample only gave a low yield of fossils. It is considered marine as it is dominated by dinoflagellates. Although the dinoflagellates are all long ranging the assemblage overall favours a Miocene age.

Alberton West-168: Core-5 at 324 feet.
Lithology: Very carbonaceous clay or coal.
Age: Upper N. asperus Zone to Lower P. tuberculatus Zone.

Alberton West-168: Core-6 at 383 feet.
Lithology: Coal
Age: As for Core-5.

Woodside South-1: Core-8 at 1952 feet.
Lithology: Coal.
Age: Upper N. asperus Zone to Lower P. tuberculatus Zone, but more likely the former because the sample is overlayen by Lakes Entrance Formation.

Remarks: Because the above three samples are coals it is impossible to say whether they belong to the Upper N. asperus Zone or to the Lower P. tuberculatus Zone. The problem is that the key species for identifying the base of the P. tuberculatus Zone (especially Cyatheacidites annulatus) have NEVER been found in coals. It can be said with some confidence, however, that the samples are all younger than the Middle N. asperus Zone.

Sunday Island-1: SWC 1/9 at 1200 feet.
Lithology: Carbonaceous sandstone.
Age: Middle N. asperus Zone.

Remarks: This sample only gave a very low yield so my evidence for a Middle N. asperus Zone age is very weak. It is based on a single specimen of Deflandrea extensa and a specimen of Spinidinium sp., neither of which have been recorded above this zone.

W490 WOODSIDE SOUTH-1 2nd Copy

~~Bellbird 1~~

PALYNOLOGICAL REPORT ON CORE SAMPLES FROM WELLS SUNK IN THE GIPPSLAND BASIN

By: M.E. Dettmann 14/9/66
To: Esso Expl. Aust.

Core samples taken from seven wells sunk by Woodside and partners in the Gippsland Basin yielded microfloras (see Tables 1 and 2) that provide a basis for correlation of the well sequences, both with each other and with sequences from elsewhere in the Gippsland Basin. The wells and the intervals investigated comprise: Carrs Creek No.1 between 4522 and 5507 feet; North Seaspray No.1 between 3484 and 3771 feet; Duck Bay No.1 between 2831 and 3896 feet; Seaspray No.1 between 4872 and 5556 feet; Lake Reeve No.1 between 6080 and 6635 feet; Bellbird No.1 between 995 and 2245 feet; and Woodside South No.1 between 3279 and 5816 feet. The majority of the samples yielded identifiable spores and pollen grains, but the concentration and preservation of the plant microfossils ranged from good in some samples to poor in others. As outlined below the microfloras obtained from the sediments investigated conform with Lower Permian, Lower Cretaceous, and Lower Tertiary microfloral assemblages that have been described from Australian deposits by Balme (1964), Dettmann (1963), and Harris (1965).

Carrs Creek No.1 well

The samples from 5500-07 feet and 5360-80 feet yielded poor concentrations of poorly preserved spores and pollen. Species present in the lower samples include Cicatricosisporites australiensis (Cookson) and Aequitriradites spinulosus (Cookson & Dettmann) which indicate a Cretaceous age.

The uppermost sample examined (4522-32 feet) yielded a more diverse microflora in which Dictyotosporites speciosus Cookson & Dettmann is a component. This species indicates the presence of the Speciosus Assemblage that is Valanginian-Aptian in age (Dettmann 1963). The Speciosus Assemblage

Bellbird No.1 well

The lowest sample investigated (2235-45 feet) was found to be devoid of identifiable spores and pollen grains. The succeeding sample (1719-24 feet) yielded Cicatricosisporites australiensis and Reticulatisporites pudens and on this basis a Lower Cretaceous age is assigned to the sample.

The combined occurrence of Dictyotosporites speciosus and Crybelosporites striatus in core no.1 (995-1000 feet) indicates the presence of the younger (Aptian) category of the Speciosus Assemblage. Equivalent microfloras have been recorded previously from Wellingtom Park No.1 well between 3818 and 4340 feet (see Dettmann 1965a, p.2).

Woodside South No.1 well

The four samples examined from between 4332 and 5816 feet provided only poor concentrations of poorly preserved spores and pollen grains. Cicatricosisporites australiensis was observed in each of the samples and on this basis a Cretaceous age is assigned to the sediments. The presence of Januasporites spinulosus Dettmann in core no.21 (499-5010 feet) and the existence of Aptian and Albian microfloras in stratigraphically higher deposits indicates that the section between 4332 and 5816 feet is of Lower Cretaceous age.

The Aptian category of the Speciosus Assemblage occurs at 5489-509 feet in Woodside South No.1 well. An equivalent assemblage has been recorded from Bellbird No.1 well at 995-1000 feet.

Core no.13 (3279-99 feet) yielded a well preserved microflora that contains Coptospora paradoxa and conforms with the Aptian-Albian Paradoxa Assemblage. Comparable assemblages are present in deposits at 6080-96 feet in Lake Reeve No.1 well and at 5536-56 feet in Seaspray No.1 well.

Woodside South No.1								Bellbird No.1			Lake Reeve No.1		
c.24 5800-16'	c.23 5452-69'	c.21 4990-5010'	c.18 4532-52'	c.14 3489-509'	c.13 3279-99'			c.4 2235-45'	c.3 1719-24'	c.1 995-1000'	c.3 6620-35'	c.2 6080-96'	
					+					+	+		Aequitriradites spinulosus
				+	+					+			Dictyotosporites speciosus
+	+	+	+	+	+				+	+		+	Cicatricosisporites australiensis
		+			+								Januasporites spinulosus
			+						+				Klukisporites scaberis
		+	+							+	+		Leptolepidites verrucatus
		+											Foraminisporis wonthaggiensis
+													Foraminisporis dailyi
		+			+								Foraminisporis asymmetricus
									+				Reticulatisporites pudens
					+								Rouseisporites reticulatus
					+								Rouseisporites radiatus
					+								Rouseisporites simplex
					+					+		+	Cyathidites punctatus
				+	+					+			Crybelosporites striatus
					+								Pilosisporites parvispinosus
					+							+	Coptospora paradoxa
												+	Trilobosporites trioreticulosus
										+			Trilites cf. T. tuberculiformis
												+	Cicatricosisporites hughesi
												+	Cicatricosisporites pseudotripartitus
												+	Laevigatosporites ovatus

Table 2. Distribution of selected spores in Lake Reeve No.1, Bellbird No.1, and Woodside South No.1 wells.

+ = species present

GEOLOGICAL SURVEY OF VICTORIA - unpublished report 20/1965

BIOSTRATIGRAPHIC LOG - WOODSIDE SOUTH No.1

Drilled by:- Woodside (Lakes Entrance) Oil Company

Drilled in:- Gippsland Basin

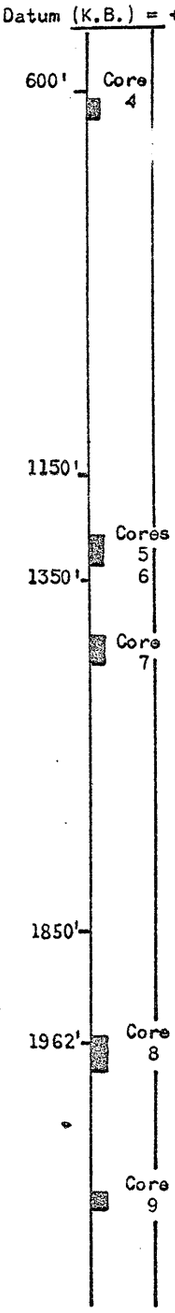
Casing program:- 13 3/8" set at 324'
9 5/8" set at 3,064'

Coring program:- as shown
no recovery cores 1 to 3

Mud program: no information

Mud contamination: heavy below 1960' and persisted even below 9 5/8" casing shoe

Datum (K.B.) = +46' A.S.L. 62 34'



500' - 600' "Jemmy's Point Fauna" - KALIMNAN

MITCHELLIAN to BALCOMBIAN shallow water fauna impossible to differentiate

BATESFORDIAN with Lepidocyclina, Amphistegina, Operculina and Planorbulinella - shoal limestone

LONGFORDIAN - shelf environment, presence of Astrononion centroplax, Cibicides perforatus, etc.

JANJUKIAN - Faunal Unit 5 - Globorotalia opima, G. extans, Globigerina euapertura and Bolivina anastomosa

Core 8 shows an apparent unconformable contact between blue-grey clay (below) and grey dolomitic limestone (above). From E-logs, the level of this contact is 1962'. For several inches below the contact, the clay contains glauconite, pyrite and fish remains and worn arenaceous foraminifera. The fauna suggests a brackish water environment and a probable Upper EOCENE age. Glauconite is present for another 18" but no foraminifera or other fauna were found.

The core sample at 1962' (approx.) is the lowest 'in situ' fauna in this section.

T.D. 5819 feet.

1754.4 m

David J. Taylor

27th July, 1965

30.

Woodside South

V REFERENCES :

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Woodside South

ENCLOSURE I

LOCALITY MAP SHOWING

RELATION TO REGIONAL GEOLOGY

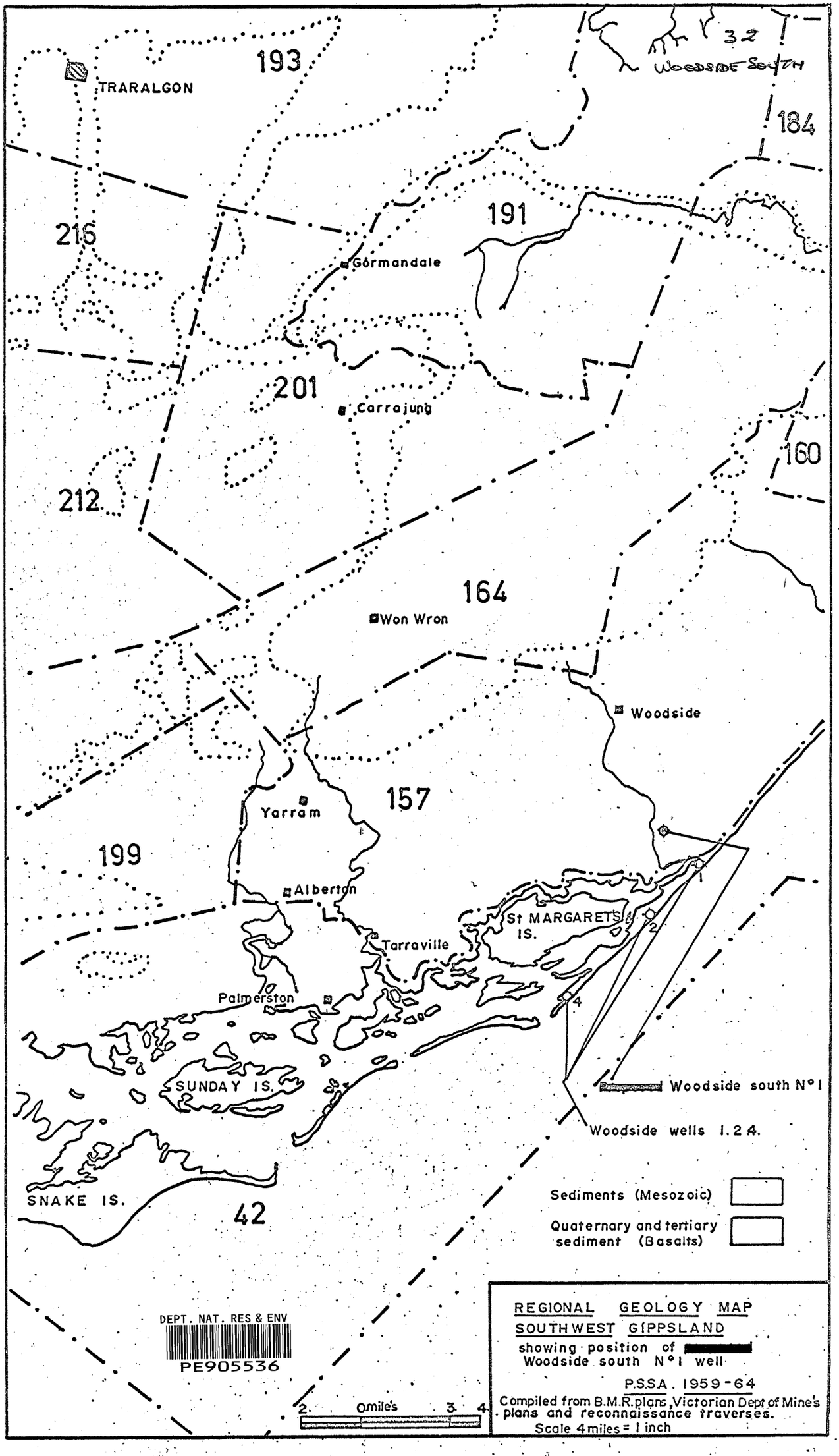
PE905536

This is an enclosure indicator page.
The enclosure PE905536 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905536 has the following characteristics:

ITEM_BARCODE	= PE905536
CONTAINER_BARCODE	= PE902941
NAME	= Regional Geology Map
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= GENERAL
SUBTYPE	= GEOL_MAP
DESCRIPTION	= Regional Geology Map of SouthWest Gippsland (from WCR) for Woodside South-1
REMARKS	=
DATE_CREATED	= 15/07/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	= VICTORIAN DEPT OF MINE'S PLANS AND RECONAISSANCE TRAVERSE
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)


TRARALGON
193
184
191
216
Gormandale
201
Carrajung
160
212
164
Won Wron
Woodside
157
Yarram
199
Alberton
St MARGARETS IS.
Tarraville
Palmerston
SUNDAY IS.
SNAKE IS.
42
Woodside south N°1
Woodside wells 1.2.4.
Sediments (Mesozoic)
Quaternary and tertiary sediment (Basalts)
DEPT. NAT. RES & ENV
PE905536
REGIONAL GEOLOGY MAP
SOUTHWEST GIPPSLAND
showing position of Woodside south N°1 well
P.S.S.A. 1959-64
Compiled from B.M.R. plans, Victorian Dept of Mine's plans and reconnaissance traverses.
Scale 4 miles = 1 inch
2. Omile's 3 4

Woodside South

ENCLOSURE II

STRATIGRAPHIC COLUMN BEFORE DRILLING

ENCLOSURE PLATE 2

Depth	Lithology	Name and type	Thickness	Age	
		JEMMY'S POINT FM. (Alluvium) Fossiliferous limestone and sand	300'	PLIOCENE	TERTIARY
		TAMBO RIVER FM. Fossiliferous marls	390'	UPPER MIOCENE	
1000'		GIPPSLAND LIMESTONE Limestone, marls, shales and siltstones	925'	MIOCENE	
		LAKES ENTRANCE FM. Marls, limestones and shales	275'	OLIGOCENE	
2000'		LATROBE VALLEY COAL MEASURES Interbedded coals and sandstones	1365'	UPPER EOCENE LOWER OLIGOCENE	
		Fresh water gravels and sands			
3000'		Basalt			
		Salt water gravels			
4000'		STRZELECKI GROUP Sands, shales and greywackes	2000'+	LOWER CRETACEOUS UPPER JURASSIC	MESOZOIC
5000'					

WOODSIDE (LAKES ENTRANCE) OIL CO. N. L.

PETROLEUM PROSPECTING LEASE 157

GENERALIZED STRATIGRAPHIC COLUMN

AS ASSUMED BEFORE DRILLING WOODSIDE SOUTH No. 1 WELL

Vertical Scale: 1 In. = 1000 Ft.

By T. Watts of Cundill, Meyers & Associates

Drafting by GEODRAFTING SERVICES

Date: SEPTEMBER, 1965

PE902944

This is an enclosure indicator page.
The enclosure PE902944 is enclosed within the container PE902941 at this location in this document.

The enclosure PE902944 has the following characteristics:

ITEM_BARCODE	= PE902944
CONTAINER_BARCODE	= PE902941
NAME	= Geological Cross Section
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Geological Cross Section Woodside No 1 & 2 and South No1 Wells (enclosure from WCR) for Woodside South-1
REMARKS	=
DATE_CREATED	= 30/09/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= Woodside South-1
CONTRACTOR	= Cundill, Meyers and Associates
CLIENT_OP_CO	= Woodside (Lakes Entrance) Oil Company NL.

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX No. I

CORE DESCRIPTIONS

WOODSIDE SOUTH NO. 1 WELL

CORE NO. 1	380' to 389' Recovered 0'
CORE NO. 2	389' to 408' Recovered 0'
CORE NO. 3	408' to 427' Recovered 0'
CORE NO. 4	610' to 630' Recovered 10'4"
Top 1'6"	Marl: Grey, very fine arenaceous and silty, with abundant shell fragments (gasteropods, pelecypods and foraminifera) ranging from very fine to coarse and occasional volcanic pebbles in a clay argillaceous calcareous matrix.
3'8"	Marl: as above with occasional shell fragments only, and abundant massive structureless clay.
bottom 5'2"	Marl: as above with shell bands and occasional bands of orange quartz grains and pebbles.
CORE NO. 5	1237' to 1257' Recovered 10'
10'	Marl: dark grey, part light grey, sandy and fossiliferous. Calcareous kaolinitic, slightly argillaceous matrix. Occasionally glauconitic with a few large secondary crystals of calcite. Grades to marly limestone.
CORE NO. 6	1257' to 1277' Recovered 2'
2'	Marl-marly limestone. Grey, grey-white, part slightly green, very sandy with fine to medium grained quartz and shell fragments in calcareous and argillaceous matrix. Abundant green glauconite patches.
CORE NO. 7	1687' to 1713' Recovered 21'11"
Top 5"	5" Clay, grey-green, structureless, grading to minor marl, part leached.
2'7"	Marl: grey-green with fossils in argillaceous calcareous(?) matrix. Part leached.
10"	Marl: green, very finely arenaceous and silty, micromicaceous. Argillaceous-kaolinitic-calcareous matrix.
2'9"	Shaley-marl: dark grey to black grey with abundant very fine to medium grained fossil fragments in a calcareous and argillaceous matrix. Interbedded thin streaks of shale and mudstone, part micromicaceous, glauconitic, with occasional included coarse and pebbly sand grains. Bedding indications at 1 - 2°.

2'	Marly limestone: grey, light whitish grey, glauconitic, sandy (fine to medium), part fair vugular and leached porosity.
bottom 12'8"	Marly limestone as above interbedded with minor shaley marl as above.
CORE NO. 8	1946' to 2006' Recovered 8'1"
10"	Marl: Light grey-brown, very fine, fossiliferous micromicaceous, silty. Argillaceous-calcareous matrix
3"	Limestone, yellow white compact marly, partly glauconitic part very fossiliferous with patches of fair leached porosity.
1'	Marl as above.
1'4"	Limestone as above.
1'2"	Clay green-grey, compact, dense even texture.
5"	Clay green, structureless, glauconitic.
1'	Clay green, very arenaceous with fine to medium occasionally pebbly quartz grains and minor silt set in green very glauconitic clay matrix.
9"	Clay brown, silty, bituminous, part slightly arenaceous.
bottom 1'4"	Coal
CORE NO. 9	2193' to 2213' Recovered 2'
2'	Clay light grey, light blue grey with included coal. Clay is interbedded with coal, dark brown, brown-black, earthy, soft, and Sand, brown, fine to medium grained, with sub-angular quartz with carbonaceous fragments in kaolinitic slightly argillaceous matrix.
CORE NO. 10	2403' to 2423' Recovered 1'
Top 8"	Sandstone, medium to coarse pebbly, clear and dull, sub-angular to sub-rounded, poorly sorted, very poorly consolidated.
bottom 4"	Sandstones, very fine to pebbly with occasional rock fragments set in clay matrix, part well indurated. Claystone, brown, compact, dense with included lignite fragments.
CORE NO. 11	2613' to 2633' Recovered 1'
1"	Coal: dark brown and black
11"	Sand: light grey-white, fine and coarse grained. Consists of sub-angular to sub-rounded quartz in clay matrix.

CORE NO. 12 — 3036' to 3055' Recovered 19'

7' — Basalt: blue grey, very fine, highly altered, with kaolinised feldspar and decomposed ferromagnesian minerals, (Chiefly biotite and hornblende), and abundant pyrite. Ground mass kaolinised with microvesicular remnants evident probably representing decomposed zeolite infilling. Chlorite. Gross aspect is massive with fractures at 45° to core axis.

CORE NO. 13 — 3279' to 3299' Recovered 17'5"

top 15'4" — Mudstone, green grey, compact, massive, part kaolinitic occasionally micromicaceous, silty with conchoidal fractures. Slightly calcareous in part with carbonaceous plant remains in places and occasional micro-carbonaceous partings. Mudstone is interbedded with siltstone: grey, argillaceous, very finely arenaceous grading to feldspathic kaolinized sandstone: very fine grained. Bedding horizontal with occasional cross bedding.

bottom 2'1" — Mudstone, green, kaolinitic as above.

CORE NO. 14 — 3489' to 3509' Recovered 2'6"

2'6" — Sandstone, light greenish grey, fine to medium grained, occasionally coarse grained, consists of poorly sorted angular to subangular quartz, igneous and sedimentary rock fragments and kaolinised feldspar in a chloritic and argillaceous matrix. Massive with occasional carbonaceous bands indicating horizontal bedding.

CORE NO. 15 — 3710' to 3730' Recovered 5'

5' — Sandstone: green-grey, fine to medium, occasionally very fine grained, consisting of poorly sorted, subangular quartz, rock fragments (volcanic and sedimentary) and kaolinised feldspar in a sparse chloritic argillaceous part kaolinitic matrix. Occasional included mica flakes and coal fragments with a few carbonaceous streaks (bedding) with dips of 3° to 4°. Part poor to fair intergranular porosity.

CORE NO. 16 — 4020' to 4030' Recovered 10'

Top 8' — Sandstone: grey green, fine grained, consists of poorly sorted subangular to subrounded quartz, kaolinised feldspar, occasional rock fragments in sparse argillaceous slightly kaolinised matrix. Part chloritic with occasional included mica flakes and orange weathering feldspar grains. Occasional coal plugs (¼" and less).

bottom 2'	Sandstone: green, as above, chloritic, with abundant calcite veinlets and vertical fractures infilled with calcite.
CORE NO. 17	4330' to 4332' Recovered 1'
1'	Clay light grey, massive, and shale, light grey green, kaolinitic, massive.
CORE NO. 18	4332' to 4352' Recovered 14'
14'	Shale, light grey, dark grey, blue grey to black, massive, silty, micromicaceous, part carbonaceous with thin coal streaks. Bedding is at 20° with occasional bedding plane fractures and high angle fractures. Calcite present on fracture planes, also occasional slickensides. Shale is interbedded with minor siltstone: grey, slightly micromicaceous, quartzose, very finely arenaceous. Tight.
CORE NO. 19	4550' to 4570' Recovered 18'
18'	Sandstone: grey-green, fine grained, consisting of poorly sorted, sub angular quartz, orange part kaolinised feldspar and occasional rock fragments, and occasional mica flakes in sparse argillaceous, slightly kaolinitic matrix. Chloritic, partly silty with occasional irregular vertical fractures infilled with calcite. Occasional bituminous and coaly patches, streaks and partings dipping at 10° (bedding?) Homogeneous texture with included patches of green claystone in basal 7". Tight to very poorly porous.
CORE NO. 20	4770' to 4787' Recovered 16'
Top 15'	Sandstone: green grey, fine grained, consists of poorly sorted, sub-angular quartz, orange feldspar, occasional rock fragments and mica flakes in very sparse argillaceous matrix. Feldspar is partly kaolinised. Occasional carbonaceous and shaley streaks dipping at 3° to 5°, as well as occasional large 2" to 3" included shale fragments.
4"	Sandstone as above virtually completely kaolinised.
4"	Clay interbedded with coal.
bottom 4"	Sandstone as above, medium grained.

WOODSIDE SOUTH

CORE NO. 21 4990' to 5010' Recovered 18'

12' Shale, grey, micromicaceous, massive, with occasional interbeds and stringers of siltstone: light brown, grading to very fine sandstone. Slightly chloritic and carbonaceous. Bedding at 10°, with occasional high angle fracture cleavage (70-80°). Traces of cross bedding, and slickensides.

5' Siltstone: light brown-grey, very fine arenaceous, argillaceous. Occasional mica flakes, part chloritic. Grades to sandstone. Tight.

1' Shale as above.

CORE NO. 22 5207' to 5222' Recovered 5'

5' Sandstone: green grey, fine grained, even textured, part silty, consists of fairly well sorted, sub angular to subrounded quartz, rock fragments, pink and orange partly kaolinised feldspars in a sparse argillaceous matrix. Partly calcareous with occasional blebs and patches of calcite. Tight.

CORE NO. 23 5452' to 5469' Recovered 14'

Top 5'6" Sandstone, fine grained part medium grained, grey. Consists of poorly sorted, sub-angular to sub-rounded quartz, feldspar and rock fragments in sparse argillaceous matrix. Occasional argillaceous plugs present. Bedding (indistinct) at 25° to 35° with pronounced bedding plane cleavage locally developed. Occasional stringers and small veinlets of calcite present. Tight.

5' Sandstone: as above, fine to medium grained, partly very fine, part slightly kaolonised, part silty with irregular fractures infilled with argillaceous material.

bottom 3'6" Sandstone as in top 5'6", part very fine. Tight.

Approx. composition:

Feldspar	15%
Quartz	60%
Rock Fragments	15%
Matrix	10%

CORE NO. 24 5800' to 5816' Recovered 10'

10' Sandstone: grey, fine grained, part medium grained. Consists of poorly to fairly sorted, sub-angular quartz, orange occasionally kaolinized feldspar and rock fragments, occasional micromicaceous flakes, calcite veinlets, and partings with a few carbonaceous specks and plant remains. Tight. Indistinct bedding at 0° to 2°.

APPENDIX 2

(1) of 14

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 7/6/65

Area: Woodside Sth No. 1 Well: No.1 R.T. Elevation: 46' A.S.L.

Test No.: No. 1 Interval: 1944'-2000' Formation: Latrobe Valley Coal Measures

Tester, Size and Type: 4¾ HMV Packer, Size and Type: Dual 7¾" Open Hole Type BT.

Rubber, O.D.: 7¾" B.H. Choke Size: ½" Drill Pipe, Size: 4½" IF

Full Hole, I.D.: 8¾" Pilot Hole, I.D.: 7⅞" Casing, I.D.: 12.715 (13⅜"x 48lb)

Anchor, O.D. and I.D.: 4¾"x2¼" Sump Volume: 18.9cu.ft. Water Cushion: NIL

Disk Valve, Depth: Tester Valve, Depth: 1927 Air Chamber Volume:

Pressure) Gauges:) Kuster Ak-1 Range: 8,000 PSI No.: Two Top # 2237 - 12 Hrs
(Anchor # 2238 - 24 Hrs
(Perforations:

Mud Weight: 9.2.lbs/gal Filtrate Salinity: 420PPM Annulus Drop: NIL

DIARY OF TEST — Started In: On Bottom: 9.07 a.m.

Valve Opened: 9.30 a.m. Valve Closed: 9.37.a.m. Disk Broken:

Valve Opened: 10.07 a.m. Gas to Surface: Oil to Surface:

Valve Shut: 10.50 a.m. Pulled Packer: 11.35 a.m. Out of Hole:

Initial Shut In Time: 30 mins Flowing Time: 43 mins Final Shut In Time:

SURFACE PRODUCTION —

Air or Gas, cu. ft./day / (Time: / (Rate: /

Oil, bbls./day / (Time: / (Rate: /

PIPE RECOVERY — Oil: / Water: / Mud: 120 linear ft.

TOTAL PRODUCTION — Gas: / Oil / Water: /

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	I.S.I.P.	F.F.P.	F.S.I.P.	FMP	Temp.
Top Gauge:	1928	915				915	90°
Bottom Gauge:	1990	936				936	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
No. 2 Drill Collar	Mud		450 PPM

REMARKS: On bottom 9.07 a.m. Anchor penetrated formation
Added another single. Held for Hyd. pressure.
Set packer with 30,000 lbs.

Strong initial blow.
Flow equalised after 23 mins. FFP

(2)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 8/6/65

Area: Woodside South Well: No. 1 R.T. Elevation: 46ft.

Test No.: 2 Interval: 2012-2213 Formation: Latrobe Valley Coal Measures

Tester, Size and Type: B $4\frac{3}{4}$ Packer, Size and Type: $4\frac{3}{4}$" Open Hole Type BT Dual

Rubber, O.D.: 8" B.H. Choke, Size: $\frac{1}{2}$" Drill Pipe, Size: $4\frac{1}{2}$" IF

Full Hole, I.D.: $8\frac{3}{4}$" Pilot Hole, I.D.: NIL Casing, I.D.: 12.715

Anchor, O.D. and I.D.: $4\frac{3}{4}$" Sump Volume: 35 Cu.Ft. Water Cushion: NIL

Disk Valve, Depth: Tester Valve, Depth: Air Chamber Volume:

Pressure) Gauges:) Kuster AK-1 Range: 8,000 No.: Two No.2237 12 Hrs
(Anchor No. 2238 24 "
(Perforations: 30 ft.

Mud Weight: 9.1 lbs/gal Filtrate Salinity: 450 ppm Annulus Drop: NIL

DIARY OF TEST — Started In: On Bottom:

Valve Opened: 12.35 p.m. Valve Closed: 12.40 p.m. Disk Broken:
Valve Opened: 1.10 p.m. Gas to Surface: - Oil to Surface:
Valve Shut: 1.55 p.m. Pulled Packer: 2.40 p.m. Out of Hole: 5.00 p.m.
Initial Shut In Time: 30 mins Flowing Time: 45 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION — NIL

Air or Gas, cu. ft./day / (Time: / (Rate: /

Oil, bbls./day / (Time: / (Rate: /

PIPE RECOVERY —

Oil: / Water: 1640 lin ft. Mud: 270 lin ft.

TOTAL PRODUCTION — Gas: / Oil / Water: 1640 lin ft.

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	IFP	I.S.I.P.	F.F.P.	F.S.I.P.	FMP	Temp.
Top Gauge: No.	2237	1997	979 (695-)	900	703-902	902	928	90°
Bottom Gauge:	2238	2051	996 (881)				911	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
Drill Pipe	Mud	1.09	450
Drill Pipe	Water	1	700

REMARKS: Set dual packers with 30,000 lbs.
Tool opened with good blow; increased to strong blow in 3 mins
Blow died in 40 mins of final flow period
Anchor & Tools to shut-in Tool plugged with fine sand.

(3)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 10/6/65

Area: GIPPSLAND Well: Woodside Sth No. 1 R.T. Elevation: 46' ASL

Test No.: 3 Interval: 2431-2633 Formation: Latrobe Valley Coal Measures

Tester, Size and Type: BJ 4¾"HMV Packer, Size and Type: Dual 4¾" Open Hole Type BT

Rubber, O.D.: 8" B.H. Choke Size: ½ Drill Pipe, Size: 4½" IF

Full Hole, I.D.: 8¾" Pilot Hole, I.D.: - Casing, I.D.: 12.715 (13⅜ @ 327')

Anchor, O.D. and I.D.: 4¾" x 2¼ Sump Volume: 34 cu ft Water Cushion: NIL

Disk Valve, Depth: 2411 ft Tester Valve, Depth: 2418' Air Chamber Volume:

Pressure) Gauges:) Kuster AK-1 Range: 8,000 PSI No.: Two No.2237 - 12 Hrs (Anchor 2238 - 24 Hrs (Perforations: 36ft

Mud Weight: 9.2lbs/gal Filtrate Salinity: 420 PPM Annulus Drop: 8 ft

DIARY OF TEST — Started In: On Bottom:

Valve Opened: 6.16.a.m. Valve Closed: 6.21a.m. Disk Broken:

Valve Opened: 6.51.a.m. Gas to Surface: Oil to Surface:

Valve Shut: 7.36.a.m. Pulled Packer: 8.21.a.m. Out of Hole: 10.00 a.m.

Initial Shut In Time: 30 mins Flowing Time: 45 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION — NIL

Air or Gas, cu. ft./day / (Time: ((Rate: /

Oil, bbls./day / (Time: (Rate: /

PIPE RECOVERY —

Oil: / Water: / Mud: 2 lin ft.

TOTAL PRODUCTION — Gas: / Oil / Water: /

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	I.S.I.P.	F.F.P.	F.S.I.P.	FMP	Temp.
Top Gauge: No.2237	2414	1167			1092	1167	90°
Bottom Gauge: 2238	2469	1195			1127	1195	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
Shut in Tool	Sump Mud		420 ppm

REMARKS: Set Packer with 30,000 lbs
Weak air puff on initial flow which died after 4 mins. Nil air blow on opening valve for Final blow.
On pulling Tools, tester was found to be plugged with sand up to the Shut in Tool.

(4)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 12/6/1965

Area: Gippsland Well: Woodside Sth No. 1, R.T. Elevation: 46 ASL

Test No.: 4 Interval: 2857-3035 Formation: Latrobe Coal Measures.

Tester, Size and Type: BJ 4¾" HMV Packer, Size and Type: Dual Open Hole Type BT.

Rubber, O.D.: 8" B.H. Choke Size: ½" Drill Pipe, Size: 4½ IF

Full Hole, I.D.: 8¾" Pilot Hole, I.D.: - Casing, I.D.: 12.75 (13⅜"-327ft)

Anchor, O.D. and I.D.: 4¾x2¼" Sump Volume: 36 cu ft. Water Cushion: -

Disk Valve, Depth: 2838 ft Tester Valve, Depth: 2845 Air Chamber Volume: -

Pressure) Gauges:) Kuster AK-1 Range: 8000 PSI No.: Two No. 2237 12 Hrs
(Anchor 2238 24 Hrs
(Perforations: 22 ft.

Mud Weight: 9.0 Filtrate Salinity: 450 Annulus Drop: -

DIARY OF TEST — Started In: On Bottom: 12.15.

Valve Opened: 12.19 Valve Closed: 12.24 Disk Broken: -

Valve Opened: 12.54 Gas to Surface: - Oil to Surface: -

Valve Shut: Pulled Packer: Out of Hole: -

Initial Shut In Time: 5 Flowing Time: 30 Final Shut In Time: -

SURFACE PRODUCTION —

Air or Gas, cu. ft./day / (Time: / (Rate: /

Oil, bbls./day / (Time: (Rate: /

PIPE RECOVERY —

Oil: / Water: / Mud: /

TOTAL PRODUCTION — Gas: / Oil / Water: 940 ft.

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	IFP	I.S.I.P.	F.F.P.	F.S.I.P.	FMP	Temp.
Top Gauge: 2237	2870	1355	1213	1284	1205	1284	1355	114°
Bottom Gauge: 2238	2922	1368		1305		1296	1364	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
Shut in Tool	Water	1	700 PPM

REMARKS: Set Packer with 40,000 lbs.

Tool open with good strong blow and flowed strongly for 5 mins. before initial shut in period of 30 mins. The tool plugged with sand which prevented re-opening for final flow.

(5)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 18.6.65

Area: Gippsland Well: Woodside Sth No. 1. R.T. Elevation: 46 ft A.S.L.

Test No.: 5 Interval: 3130'-3299' Formation: Top of Mesozoic

Tester, Size and Type: BJ 4¾ HMV Packer, Size and Type: DUAL OPEN HOLE TYPE BT

Rubber, O.D.: 8" B.H. Choke Size: ½" Drill Pipe, Size: 4½ IF

Full Hole, I.D.: 8¾ Pilot Hole, I.D.: 7⅞ x 20 Casing, I.D.: 8.921 (9⅝x36lbxJ55)

Anchor, O.D. and I.D.: 4¾" Sump Volume: 37 cu ft. Water Cushion: NIL

Disk Valve, Depth: Tester Valve, Depth: Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8,300 PSI No.: Two 2238 24 Hrs

(Anchor 2237 12 "

(Perforations:

Mud Weight: 9.3 lb/gal Filtrate Salinity: Annulus Drop: 5 ft

DIARY OF TEST — Started In: 7.30 p.m. On Bottom: 9.00 p.m.

Valve Opened: 9.10 p.m. Valve Closed: 9.20 p.m. Disk Broken:

Valve Opened: 9.50 p.m. Gas to Surface: Oil to Surface:

Valve Shut: 10.15 Pulled Packer: 10.47 Out of Hole: 10.00 a.m.

Initial Shut In Time: 30 mins Flowing Time: 25 mins Final Shut In Time: 32 mins

SURFACE PRODUCTION —

Air or Gas, cu. ft./day (Time: ((Rate:

Oil, bbls./day (Time: (Rate:

PIPE RECOVERY — Oil: Water: Mud: 30 Lin Ft.

TOTAL PRODUCTION — Gas: Oil Water:

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	IF	I.S.I.P.	F.F.P.	F.S.I.P.	FMP	Temp.
Top Gauge: 2237	3113	1539	42	226	51	186	1536	110°
Bottom Gauge: 2238	3136	1538	55	225	61	187	1534	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
DRILL COLLARS	MUD		

REMARKS:

TOOL OPENED WITH WEAK BLOW, AND DIED TO ZERO AFTER 20 MINS OF THE FINAL FLOW.

(6)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) OIL CO. N.L. Date: 20/6/1965.

Area: Gippsland Well: Woodside Sth 1 R.T. Elevation: 46 Ft. A.S.L.

Test No.: 6 Interval: 3318 - 3509 Formation: Mesozoic

Tester, Size and Type: B.J. 4¾ HMV Packer, Size and Type: DUAL 4¾ OPEN HOLE TYPE BT

Rubber, O.D.: 8" B.H. Choke Size: ½" Drill Pipe, Size: 4½" IF

Full Hole, I.D.: 8¾" Pilot Hole, I.D.: 7⅞" x 20' Casing, I.D.: 8.921 (9⅝")

Anchor, O.D. and I.D.: 4¾" Sump Volume: 40.72 Ft 3 Water Cushion: NIL

Disk Valve, Depth: 3295 Tester Valve, Depth: 3300 Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8,300 PSI No.: Two 2238 24 Hrs 2237 12 Hrs

(Anchor (Perforations: 24 ft

Mud Weight: 9.4 lbs/gal Filtrate Salinity: Annulus Drop: 4 ft

DIARY OF TEST — Started In: On Bottom: 5.50 a.m.

Valve Opened: 6.00 a.m. Valve Closed: 6.05 Disk Broken:

Valve Opened: 6.35 a.m. Gas to Surface: Oil to Surface:

Valve Shut: 7.05. a.m. Pulled Packer: 7.35 Out of Hole:

Initial Shut In Time: 30 mins Flowing Time: 30 mins Final Shut In Time: 30 mins

SURFACE PRODUCTION —

Air or Gas, cu. ft./day (Time: ((Rate:

Oil, bbls./day (Time: (Rate:

PIPE RECOVERY — Oil: Water: Mud: 105 Lin Ft

TOTAL PRODUCTION — Gas: Oil Water:

PRESSURE RECORD (Corrected Pressures) —

	Depth	I M.P.	IFP	I.S.I.P.	F.F.P.	F.S.I.P.	FMP	Temp.
Top Gauge: 2237	3304	1651	47	1130	49-59	754	1652	110°
Bottom Gauge: 2238	3345	1674	77	1123	85-89	753	1661	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
DRILL PIPE	MUD		

REMARKS: TOOL OPENED WITH A WEAK BLOW WHICH DIED IN 8 MINS OF THE FINAL FLOW.

(7)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 21.6.1965

Area: Gippsland Well: Woodside Sth 1 R.T. Elevation: 46' ASL

Test No.: 7 Interval: Formation: Mesozoic

Tester, Size and Type: BJ 4¾ HMV Packer, Size and Type: Dual Open Hole Type BT

Rubber, O.D.: 8" B.H. Choke Size: ½" Drill Pipe, Size: 4½" IF

Full Hole, I.D.: 8¾" Pilot Hole, I.D.: Casing, I.D.: 8.921 (9⅝")

Anchor, O.D. and I.D.: 4¼" Sump Volume: 45 Ft.3 Water Cushion: NIL

Disk Valve, Depth: 3535 Tester Valve, Depth: 3542' Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8,300 PSI No.: Two 2238 24 Hrs

(Anchor 2237 12 Hrs

(Perforations: 35 ft.

Mud Weight: 9.4. lbs/GAL Filtrate Salinity: 700 ppm Annulus Drop: Nil

DIARY OF TEST — Started In: 8.00 pm On Bottom: 9.30pm

Valve Opened: 9.33 pm Valve Closed: 9.45 pm Disk Broken:

Valve Opened: 10.15 pm Gas to Surface: Oil to Surface:

Valve Shut: 11.00 pm Pulled Packer: 11.45 pm Out of Hole:

Initial Shut In Time: 30 mins Flowing Time: 45 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION —

Air or Gas, cu. ft./day (Time: ((Rate:

Oil, bbls./day (Time: (Rate:

PIPE RECOVERY — Oil: Water: Mud: 540 Lin Ft

TOTAL PRODUCTION — Gas: Oil Salt Water: muddy 1180 clear 350

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	IFP	I.S.I.P.	F.F.P.	F.S.I.P.	FMP XXXX	Temp
Top Gauge: 2237	3549	1799	364-584	1468	6568-1050	1355	1786	122°
Bottom Gauge: 2238	3595	1839	421-570	1466	617-1055	1364	1818	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
Drill Pipe	Water	1 *	8,500 ppm

REMARKS:

TOOL OPENED WITH A GOOD STRONG BLOW WHICH REMAIN STEADY & CONSISTENT IN INTENSITY THROUGHOUT TEST

(8)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 25/6/1965

Area: Gippsland Well: Woodside Sth No. 1 R.T. Elevation: 46 Ft A.S.L.

Test No.: 8 Interval: 4152-4352 Formation: Strzelecki

Tester, Size and Type: BJ 4¾ HMV Packer, Size and Type: DUAL OPEN HOLE TYPE BT

Rubber, O.D.: 2" x 8" B.H. Choke Size: ½" Drill Pipe, Size: 4½ IF

Full Hole, I.D.: 8¾" Pilot Hole, I.D.: - Casing, I.D.: 8.921' (9⅝")

Anchor, O.D. and I.D.: 6 x 2⅞ / 4¾ Sump Volume: 48.3 Ft 3 Water Cushion: Nil

Disk Valve, Depth: Tester Valve, Depth: Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8,300 PSI No.: Two 2237 12 Hrs 2238 24 Hrs

(Anchor (Perforations:

Mud Weight: 9.9 lb/gal Filtrate Salinity: 2200 ppm Annulus Drop: NIL

DIARY OF TEST — Started In: 5.40 p.m. On Bottom: 7.10 pm

Valve Opened: 7.13. p.m. Valve Closed: 7.23 p.m Disk Broken:

Valve Opened: 7. 53 p.m. Gas to Surface: Oil to Surface:

Valve Shut: 8. 53 p.m. Pulled Packer: 9.38 p.m. Out of Hole: 11.30 p.m.

Initial Shut In Time: 30 mins Flowing Time: 60 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION — NIL

Air or Gas, cu. ft./day / (Time: ((Rate: /

Oil, bbls./day (Time: (Rate:

/ /

PIPE RECOVERY —

Oil: / Water: / Mud: 370 lin ft. /

TOTAL PRODUCTION — Gas: / Oil / Water:

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	IF	I.S.I.P.	F.F.P.	F.S.I.P.	FMP ~~XXX~~	Temp
Top Gauge: 2237	4135	2160	47-110	1690	85-228	1414	2160	126
Bottom Gauge: 2238	4169	2183	89-111	1695	145-251	1415	2183	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
DRILL PIPE	SUMP MUD & MUD FILTRATE		2200 ppm

REMARKS:

TOOL OPENED WITH WEAK BLOW INCREASED VERY SLIGHTLY OVER FLOW PERIOD BUT WAS CONSISTENTLY WEAK THROUGH OUT TEST.

(9)

DRILL STEM TEST REPORT

Company: Woodside (LE.) Oil Co. N.L. Date: 27/6/1965

Area: Gippsland Well: Woodside Sth 1 R.T. Elevation: 46 ft A.S.L.

Test No.: 9 Interval: 4360-4570 Formation: Strzelecki

Tester, Size and Type: BJ $4\frac{3}{4}$ HMV Packer, Size and Type: DUAL OPEN HOLE TYPE BT

Rubber, O.D.: 2 x 8" B.H. Choke Size: $\frac{1}{2}$" Drill Pipe, Size: $4\frac{1}{2}$" IF

Full Hole, I.D.: $8\frac{3}{4}$" Pilot Hole, I.D.: - Casing, I.D.: 8.921 ($9\frac{5}{8}$")

Anchor, O.D. and I.D.: 6"x$2\frac{5}{8}$" $4\frac{3}{4}$ Sump Volume: 52 ft 3 Water Cushion: NIL

Disk Valve, Depth: 4335' Tester Valve, Depth: 4342' Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8,300 PSI No.: Two 2237 12 Hrs (Anchor 2238 24 Hrs (Perforations: 25 ft

Mud Weight: 9.9 lbs/gal Filtrate Salinity: 2200 ppm Annulus Drop: Nil

SUMMARY OF TEST — Started In: 11.50 On Bottom: 1.50 pm

Valve Opened: 1.57 p.m. Valve Closed: 2.00 p.m. Disk Broken:

Valve Opened: 2.30 p.m. Gas to Surface: - Oil to Surface:

Valve Shut: 3.30 p.m. Pulled Packer: 4.15. p.m. Out of Hole:

Initial Shut In Time: 30 mins Flowing Time: 60 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION —

Air or Gas, cu. ft./day / (Time: ((Rate: /

Oil, bbls./day / (Time: (Rate: /

PIPE RECOVERY —

Oil: / Water: / Mud: 850 lin ft

TOTAL PRODUCTION — Gas: / Oil / Water: /

PRESSURE RECORD (Corrected Pressures) —

		Depth	I M.P.	IF	I.S.I.P.	F.F.P.	F.S.I.P.	FMP ~~XXXX~~ Temp.	Temp
Top Gauge:	2237	4343	2278	55-106	1925	76-447	1891	2276	132°
Bottom Gauge:	2238	4387	2285	89-140	1924	94-446	1886	2276	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
TOP DRILL PIPE	SUMP MUD AND		2200 ppm
DRILL COLLARS	MUD FILTRATE		

REMARKS: TOOL OPENED WITH A WEAK BLOW INCREASING TO A MEDIUM BLOW OVER FLOW PERIOD AND REMAINED CONSISTENT THROUGH OUT TEST.

(10)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 29/6/65

Area: Gippsland Well: Woodside Sth 1 R.T. Elevation: 46 FT A.SL

Test No.: 10 Interval: 4610-4787 Formation: Strzelecki

Tester, Size and Type: BJ $4\frac{3}{4}$ HMV Packer, Size and Type: DUAL OPEN HOLE TYPE BT

Rubber, O.D.: 2 x 8" B.H. Choke Size: $\frac{1}{2}$" Drill Pipe, Size: $4\frac{1}{2}$ IF

Full Hole, I.D.: $8\frac{3}{4}$" Pilot Hole, I.D.: Casing, I.D.: 8.921 ($9\frac{5}{8}$")

Anchor, O.D. and I.D.: 6 x $2\frac{7}{8}$ $4\frac{3}{4}$ x $2\frac{1}{2}$ Sump Volume: 42 ft 3 Water Cushion: NIL

S.1 ~~XXX~~ Valve, Depth: 4585' Tester Valve, Depth: 4592' Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8300 PSO No.: Two 2237 12 Hrs (Anchor 2238 24 " (Perforations: 10 Feet

Mud Weight: 10.0 lbs/gal Filtrate Salinity: 2200 ppm Annulus Drop: Nil

DIARY OF TEST — Started In: On Bottom: 1.20 pm

Valve Opened: 1.27 pm Valve Closed: 1.30 pm Disk Broken:

Valve Opened: 2.00 pm Gas to Surface: Oil to Surface:

Valve Shut: 3.00 pm Pulled Packer: 3.45. pm Out of Hole: 5.30

Initial Shut In Time: 30 mins Flowing Time: 60 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION —

Air or Gas, cu. ft./day (Time: ((Rate:

Oil, bbls./day (Time: (Rate:

PIPE RECOVERY — Oil: Water: Mud: 180 lin ft

TOTAL PRODUCTION — Gas: Oil Water:

PRESSURE RECORD (Corrected Pressures) —

		Depth	I.M.P.	IF	I.S.I.P.	F.F.P.	F.S.I.P.	~~XXXX~~ FMP	Temp
Top Gauge:	2237	4593'	2473	42-51	2038	38-114	2008	2464	134°
Bottom Gauge:	2238	4622'	2480	68-77	2038	60-128	2004	6463	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
DRILL COLLARS ABOVE TOOL	SUMP MUD & MUD FILTRATE		2200 ppm

REMARKS:

TOOL OPENED WITH A VERY WEAK BLOW WHICH INCREASED SLIGHTLY REMAINING CONSISTENTLY WEAK THROUGH OUT TEST.

(11)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Co. N.L. Date: 4/7/1965

Area: Gippsland Well: Woodside Sth 1 R.T. Elevation: 46 ft A.S.L.

Test No.: 11 Interval: 4800-5010 Formation: Strzelecki

Tester, Size and Type: BJ $4\frac{3}{4}$ HMV Packer, Size and Type: DUAL OPEN HOLE TYPE BT

Rubber, O.D.: 2 x 8" B.H. Choke Size: $\frac{1}{2}$" Drill Pipe, Size: $4\frac{1}{2}$ IF

Full Hole, I.D.: $8\frac{3}{4}$" Pilot Hole, I.D.: - Casing, I.D.: 8.921 ($9\frac{5}{8}$")

Anchor, O.D. and I.D.: 6" x $2\frac{7}{8}$" Sump Volume: 52.3 ft3 Water Cushion: NIL

S.I. ~~Disk~~ Valve, Depth: $4\frac{3}{4}$ x $2\frac{1}{2}$" 4775' Tester Valve, Depth: 4782' Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8,300 No.: Two 2237 12 Hrs

(Anchor 2238 24 Hrs

(Perforations: 25ft

Mud Weight: 9.8 lb/gal Filtrate Salinity: 2200 Annulus Drop: Nil

DIARY OF TEST — Started In: 1 - 30 On Bottom: 3.50 a.m.

Valve Opened: 3.56. a.m. Valve Closed: 4.01 a.m Disk Broken:

Valve Opened: 4.31. a.m. Gas to Surface: Oil to Surface:

Valve Shut: 5.16. a.m. Pulled Packer: 6.00 a.m Out of Hole: 8.00 a.m.

Initial Shut In Time: 30 mins Flowing Time: 45 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION —

Air or Gas, cu. ft./day (Time: ((Rate:

Oil, bbls./day (Time: (Rate:

PIPE RECOVERY — Oil: Water: Mud: 90 lin ft

TOTAL PRODUCTION — Gas: Oil Water:

PRESSURE RECORD (Corrected Pressures) —

	Depth	I. M.P.	IF	I.S.I.P.	F.F.P.	F.S.I.P.	FMP ~~XXXX~~	Temp
Top Gauge: No. 2237	4783	2498	68	737	68	635	2494	135°F
Bottom Gauge: 2238	4827	2510	106	748	102	651	2506	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
DRILL COLLAR	MUD		2200

REMARKS:

TOOL OPENED WITH A WEAK INITIAL BLOW WHICH CONTINUED FOR INITIAL FLOW PERIOD OF 5 mins BUT WAS DEAD ON OPENING VALVE FOR 45 MINS FINAL FLOW PERIOD.

(12)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Coy. N.L. Date: 8/7/65

Area: Gippsland Well: Woodside Sth 1 R.T. Elevation: 46 ft A.S.L.

Test No.: 12 Interval: 5259-5469 Formation: Strzelecki

Tester, Size and Type: BJ $4\frac{3}{4}$HMV Packer, Size and Type: DUAL OPNEN-HOLE TYPE BT

Rubber, O.D.: 2 x 8" B.H. Choke Size: $\frac{1}{2}$" Drill Pipe, Size:

Full Hole, I.D.: $8\frac{3}{4}$" Pilot Hole, I.D.: $7\frac{7}{8}$" Casing, I.D.:

Anchor, O.D. and I.D.: 6"x$2\frac{7}{8}$" Sump Volume: 52.3 ft3 Water Cushion:

Disk Valve, Depth: $4\frac{3}{4}$"x$2\frac{1}{2}$" 5234 ft Tester Valve, Depth: 5241ft Air Chamber Volume:

Pressure) Gauges:) KUSTER AK-1 Range: 8300 No.: Two 2237 12 Hrs 2238 24 Hrs

(Anchor (Perforations: 25ft

Mud Weight: 10.3 Filtrate Salinity: 2200 ppm Annulus Drop: nil

DIARY OF TEST — Started In: 11.00 a.m On Bottom: 1.45. p.m.

Valve Opened: 1.50. p.m. Valve Closed: 1.53 p.m Disk Broken:

Valve Opened: 2.23. p.m. Gas to Surface: NIL Oil to Surface: NIL

Valve Shut: 3.30. p.m. Pulled Packer: 4.15. p.m. Out of Hole: 5.50 p.m.

Initial Shut In Time: 30 mins Flowing Time: 67 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION — nil

Air or Gas, cu. ft./day (Time: ((Rate:

Oil, bbls./day (Time: (Rate:

PIPE RECOVERY —

Oil: Muddy Water: 530 ft Mud: 180 lin ft

TOTAL PRODUCTION — Gas: Oil Water:

PRESSURE RECORD (Corrected Pressures) —

		Depth	I M.P.	IFP	I.S.I.P.	F.F.P.	F.S.I.P.	FMP XXX	Temp
Top Gauge:	No. 2237	5242	2892	63-106	2308	76-372	2291	2892	149°
Bottom Gauge:	2238	5286	2894	89-132	2306	89-378	2281	2889	

SAMPLES — Sampling Point: DRILL COLLARS Type of Fluid: Sp.G.: Salinity: 7000 ppm

REMARKS:

TOOL OPENED WITH A WEAK BLOW WHICH INCREASED TO A CONSISTENT MEDIUM BLOW AND CONTINUED FOR DURATION OF FLOW PERIOD.

(13)

DRILL STEM TEST REPORT

Company: Woodside (L.E.) Oil Coy. N.L. Date: 11/7/1965

Area: Gippsland Well: Woodside Sth No. 1 R.T. Elevation: 46 ft A.S.L.

Test No.: 13 Interval: Formation: Strzelecki

Tester, Size and Type: BJ 4¾ HMV Packer, Size and Type: DUAL OPEN-HOLE TYPE BT

Rubber, O.D.: 2 x 8" B.H. Choke Size: ½" Drill Pipe, Size: 4½ IF

Full Hole, I.D.: 8¾" Pilot Hole, I.D.: Casing, I.D.: 8.9

Anchor, O.D. and I.D.: 6"x 2⅞" Sump Volume: 51 ft 3 Water Cushion: NIL
4¾"x 2½"

S.I. Valve, Depth: 5575 ft Tester Valve, Depth: 5582ft Air Chamber Volume:

Pressure Gauges:) KUSTER AK-1 Range: 8300 No.: Two No. 2237 12 Hrs
2238 24 Hrs

(Anchor (Perforations: 30 ft

Mud Weight: 10.4 lbs/gal Filtrate Salinity: 1550 Annulus Drop: NIL

DIARY OF TEST — Started In: 5.30 pm On Bottom: 7.50 pm

Valve Opened: 7.57. pm Valve Closed: 8.00 pm Disk Broken: -

Valve Opened: 8.30. pm Gas to Surface: NIL Oil to Surface: Nil

Valve Shut: 9.15. pm Pulled Packer: 10.00 pm Out of Hole: 12.15 a.m.

Initial Shut In Time: 30 mins Flowing Time: 45 mins Final Shut In Time: 45 mins

SURFACE PRODUCTION — Nil

Air or Gas, cu. ft./day (Time: ((Rate:

Oil, bbls./day (Time: (Rate:

PIPE RECOVERY — Oil: Water: Mud: 140 lin ft.

TOTAL PRODUCTION — Gas: Oil Water:

PRESSURE RECORD (Corrected Pressures) —

	Depth	I.M.P.	IFP	I.S.I.P.	F.F.P.	F.S.I.P.	FHP / FMP	Temp
Top Gauge: No.	2237	5583	3072	51-68	2194	106	1962	3064	153 F
Bottom Gauge:	2238	5632	3093	85-102	2191	132	1966	3080	

SAMPLES —

Sampling Point	Type of Fluid	Sp.G.	Salinity
DRILL COLLAR	MUD	10.4 lb/gal	1550

REMARKS

TOOL OPENED WITH A WEAK BLOW WHICH DECREASED BUT CONTINUED WEAKLY THROUGH OUT FLOW PERIOD

VICTORIAN MINES DEPARTMENT

CARD LAYOUT

TITLE AQUIFER I CARD

JOB

DATE

~~PROGRAMMER~~ Woodside South No 1 Well. – DSTs.

PAGE OF

CARD CL	PARISH NO.	DST ~~BORE~~ NO.	AQUIFER DEPTH FROM FT	AQUIFER DEPTH TO FT.	TOTAL DISSOLVED SOLIDS ppm	Cl^- ppm	$CO_3^=$ ppm	HCO_3^- ppm	$SO_4^=$ ppm	NO_3^- ppm	$Na^+ + K^+$ ppm	Ca^{++} ppm	Mg^{++} ppm	TOTAL Fe ppm	SOLUBLE Fe ppm	SOLUBLE SiO_2 ppm	pH	LITHOL.T.	COND	74–75	76–77	
A	Balloong	1	1944	2000	5060	399					2174				1.50		9.0			Y Y	Mud	
A		2	2012	2213	770	147	35	400	n.d.	NiL	257	28	1.1		0.8		8.6			Y Y	Y Y	108
A		4	2857	3035	1860	195	1.8	n.d.	471	n.a	≠797	n.d.	n.d.		2.1		8.9			Y Y	Y Y	n.d
A		5	3130	3299	n.d.	700	nd	n.d.	1580	n.d.		102	2		n.d.	nd				Y Y	Y Y	264
A		6	3318	3509	4900	960	nil	168	1308	n.d.		104	1		nd.	nd.	nd.			Y Y	Y Y	264
A		7	3560	3760	15750	7900	nil	122	397	n.d.		849	1.7		n.a	n.d	7.9			Y Y	Y Y	2190
A		8	4152	4352	n.d.	1620	nil	n.d.	1304	n.d.		134	3		n.d.	n.d.	n.d.			Y Y	Y Y	346
A		9	4360	4570	n.d.	1506	nil	n.d.	1654	n.d.		147	3	n.d		n.d	n.d			Y Y	Y Y	379
A		10	4610	4787	n.d.	4850	n.d	n.d.	718	n.d.			nil	n.d.		nd.	n.d.			Y Y	Y Y	1385
A		12	5259	5469	14500	6486	nd	n.d.	1072	n.d		1352	3		n.d	n.d.	n.d.			Y Y	Y Y	3387

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PE905539

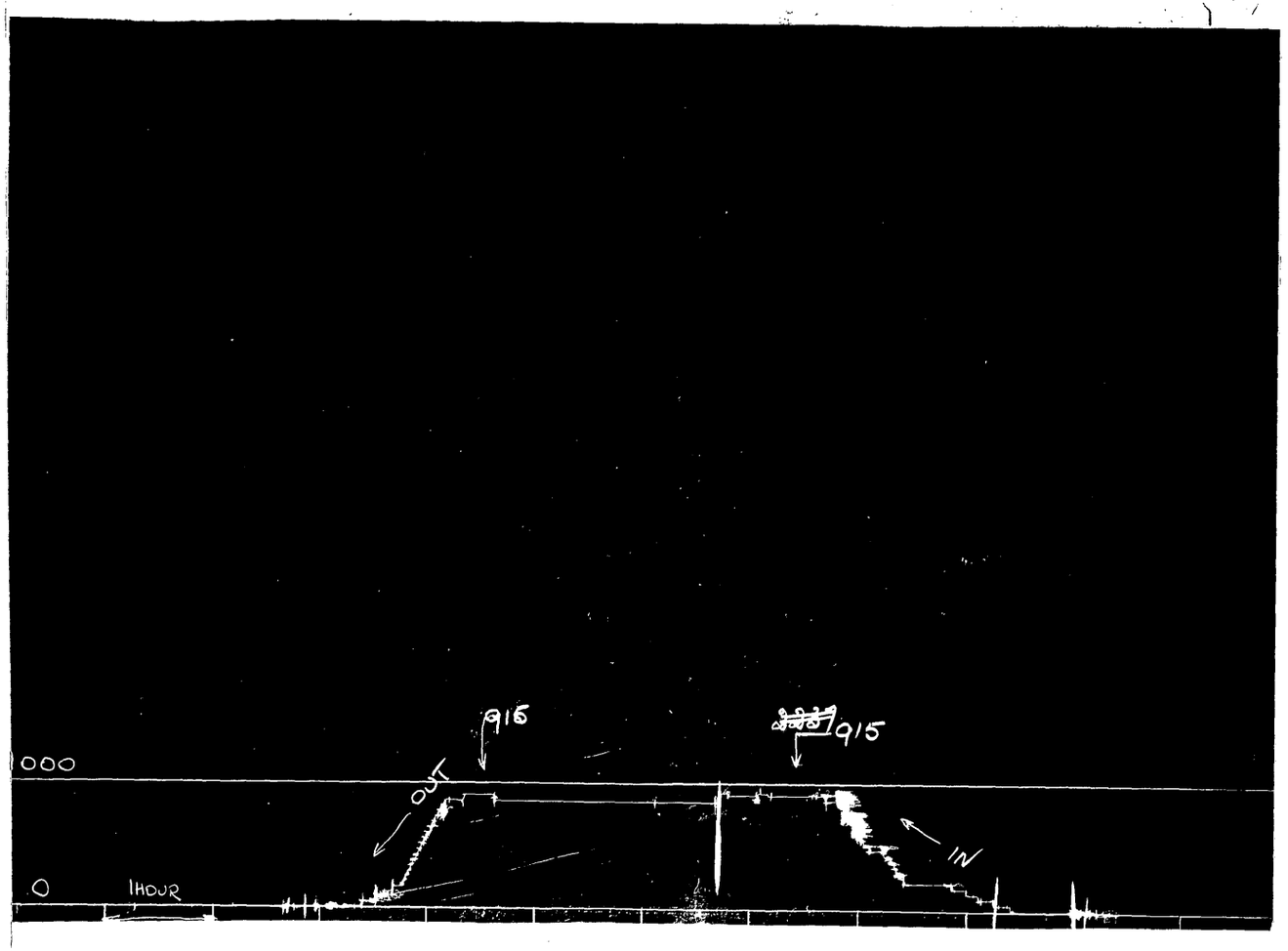
This is an enclosure indicator page.
The enclosure PE905539 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905539 has the following characteristics:

ITEM_BARCODE	= PE905539
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 1 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 1928'
DATE_CREATED	= 7/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 7, 1965 WOODSIDE SOUTH NO.1 TEST NO.1
RECORDER NO.2237 RECORDER DEPTH 1928'



PE905540

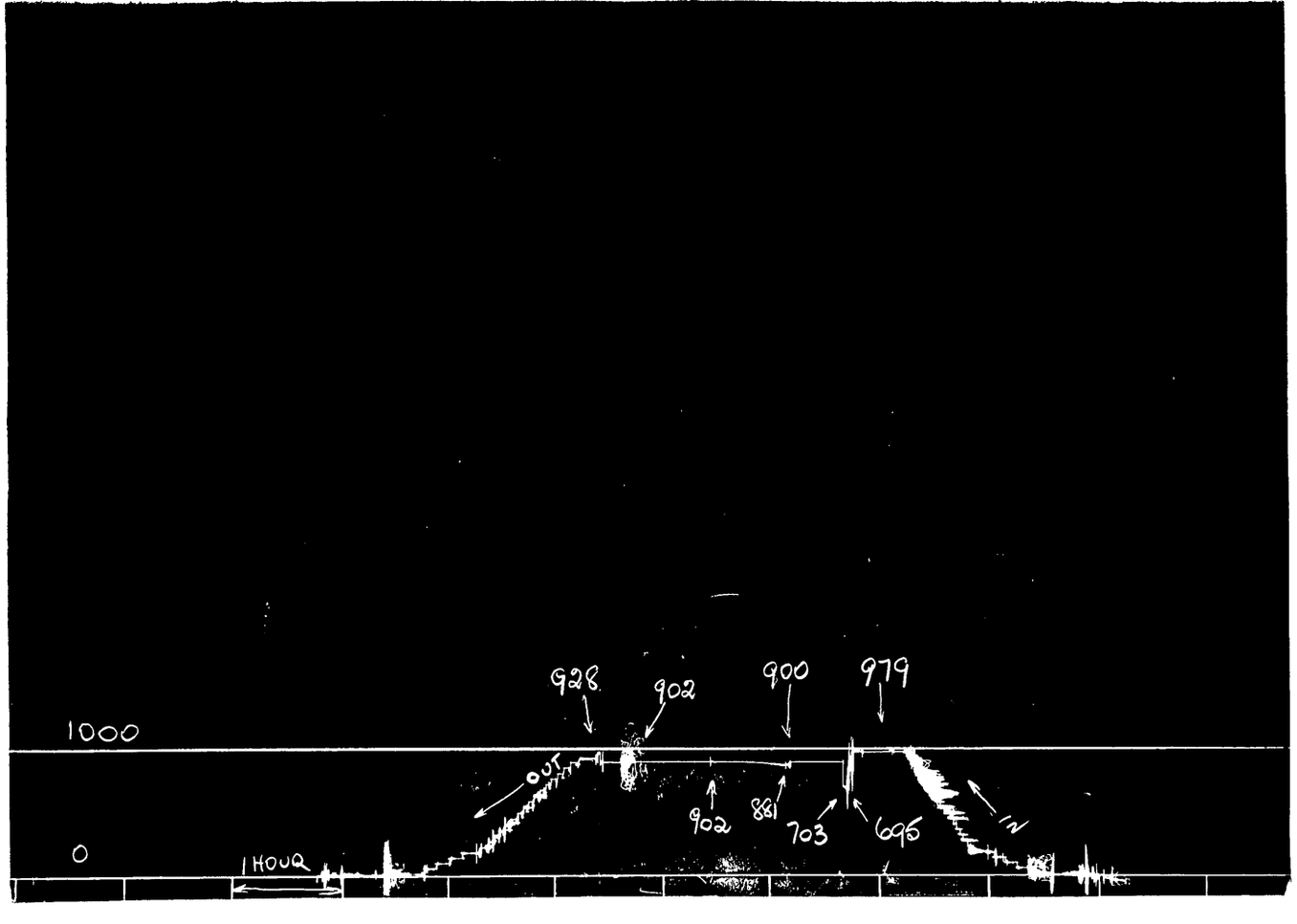
This is an enclosure indicator page.
The enclosure PE905540 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905540 has the following characteristics:

ITEM_BARCODE	= PE905540
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 2 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 1997'
DATE_CREATED	= 8/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 8, 1965 WOODSIDE SOUTH NO.1 TEST NO.2
RECORDER NO.2237 RECORDER DEPTH 1997'



PE905541

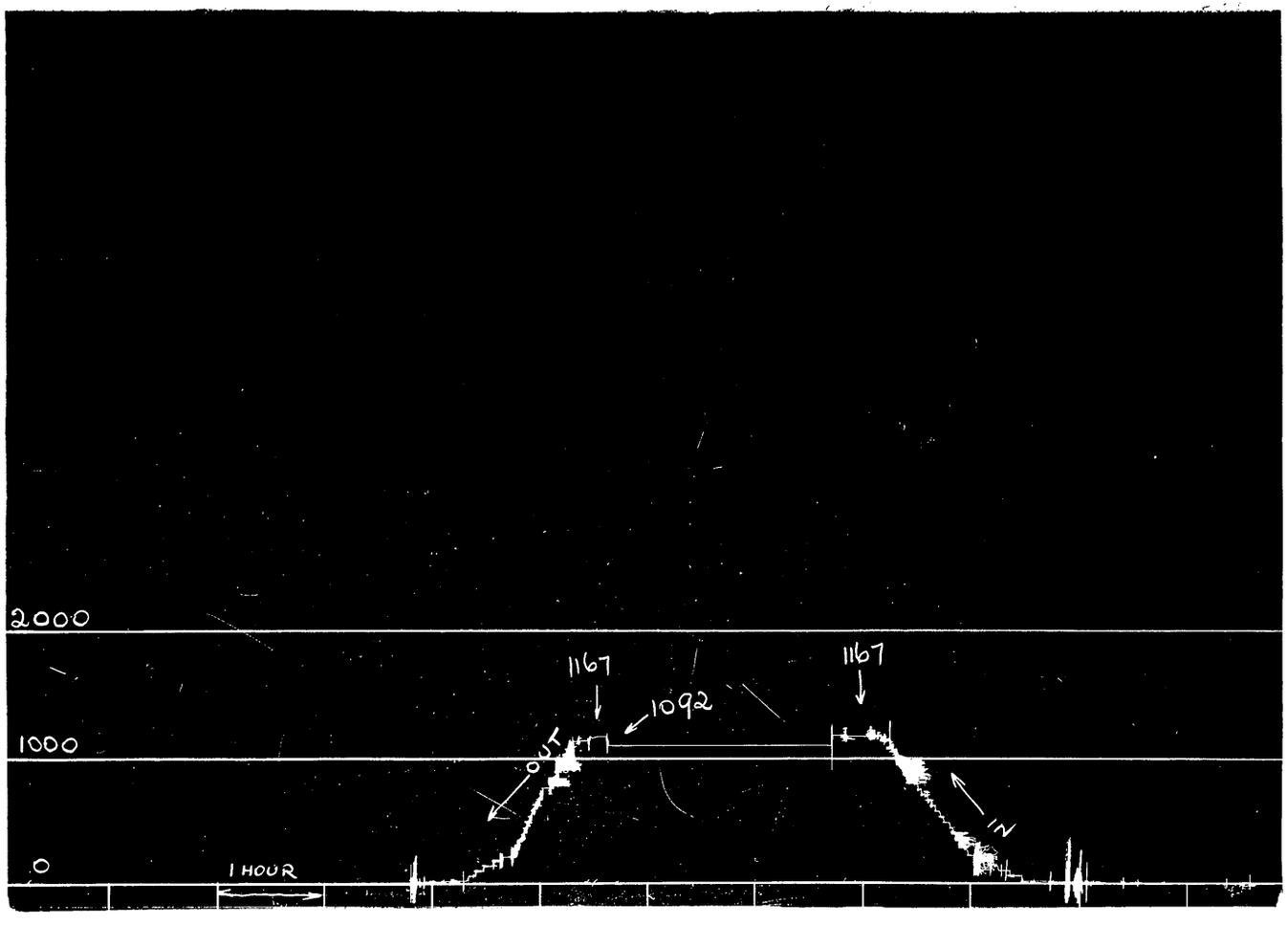
This is an enclosure indicator page.
The enclosure PE905541 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905541 has the following characteristics:

ITEM_BARCODE	= PE905541
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 3 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 2414'
DATE_CREATED	= 10/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 10, 1965 WOODSIDE SOUTH NO.1 TEST NO.3
RECORDER NO.2237 RECORDER DEPTH 2414'



PE905542

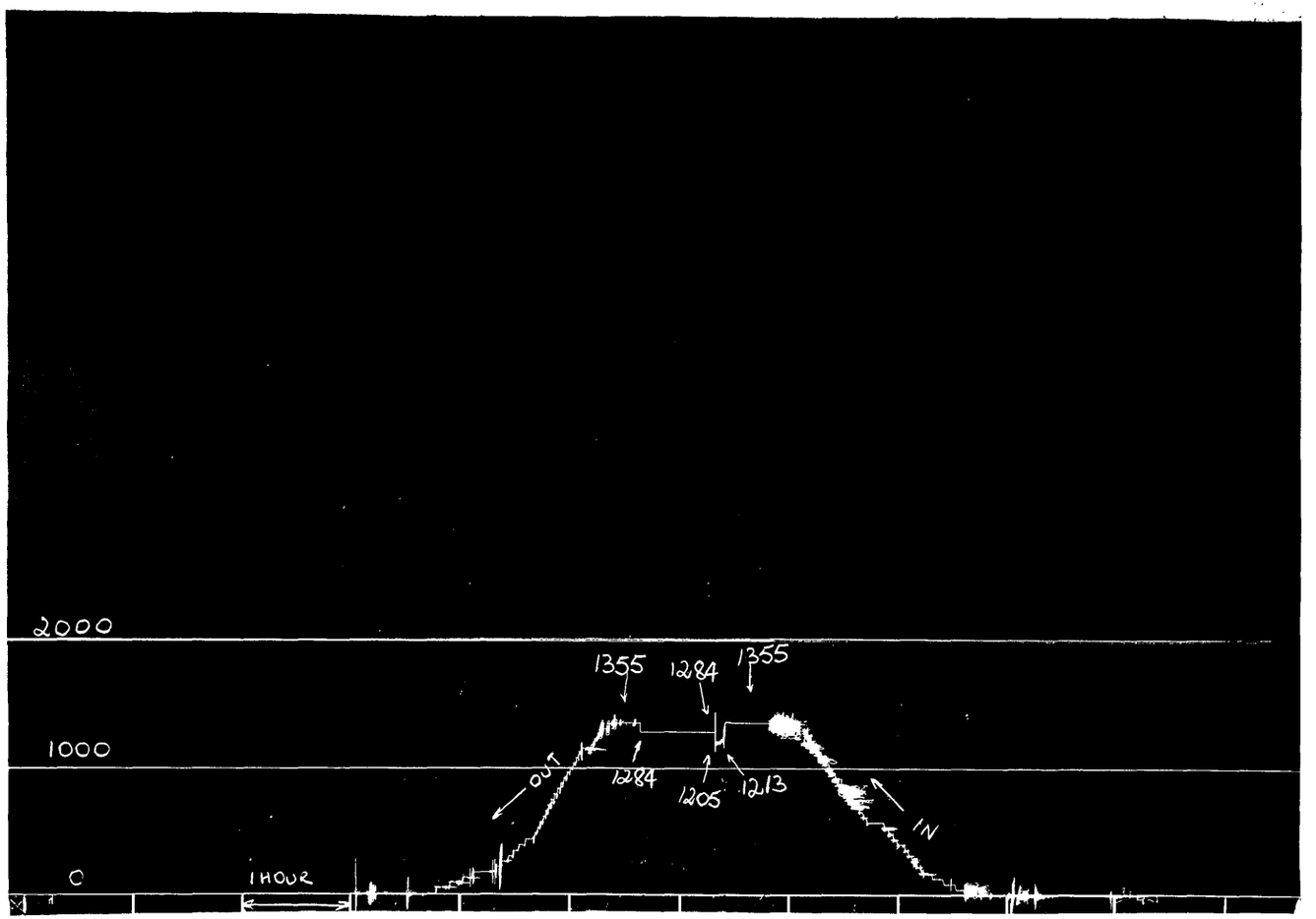
This is an enclosure indicator page.
The enclosure PE905542 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905542 has the following characteristics:

ITEM_BARCODE	= PE905542
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 4 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 2870'
DATE_CREATED	= 12/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 12, 1965 WOODSIDE SOUTH NO.1 TEST NO.4
RECORDER NO.2237 RECORDER DEPTH 2870'



PE905543

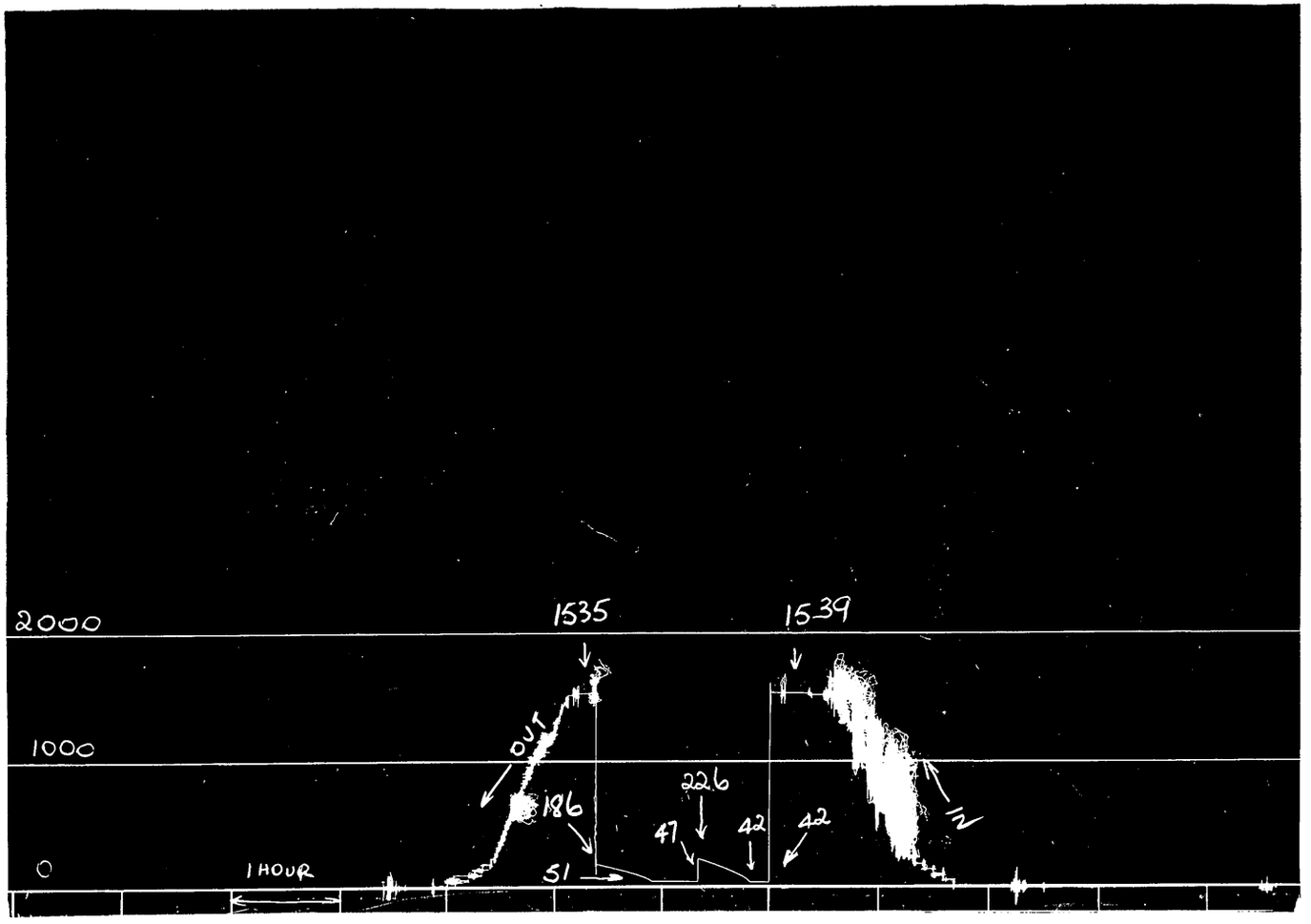
This is an enclosure indicator page.
The enclosure PE905543 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905543 has the following characteristics:

ITEM_BARCODE	= PE905543
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 5 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 3113'
DATE_CREATED	= 18/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 18, 1965 WOODSIDE SOUTH NO.1 TEST NO.5
RECORDER NO.2237 RECORDER DEPTH 3113'



PE905544

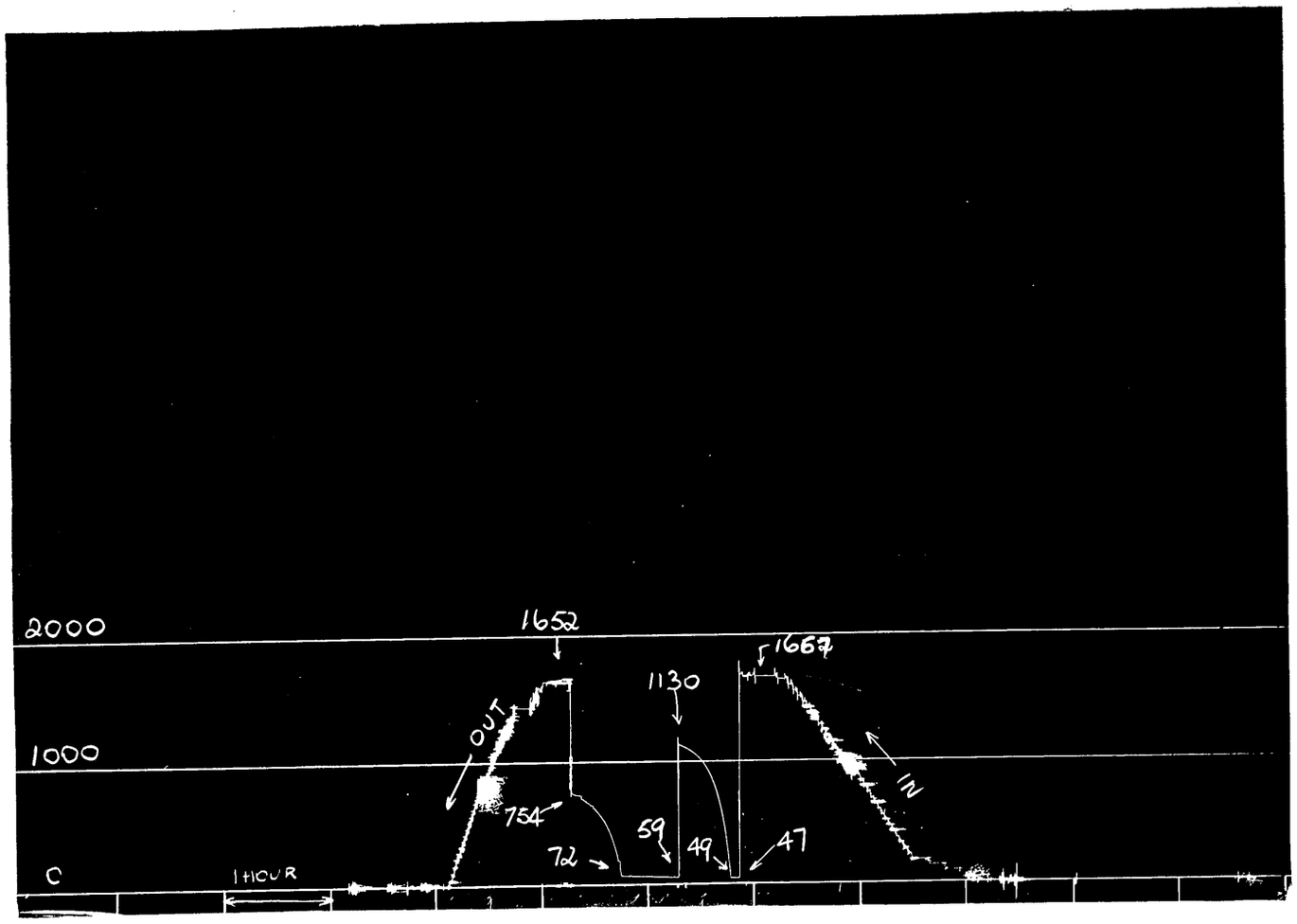
This is an enclosure indicator page.
The enclosure PE905544 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905544 has the following characteristics:

ITEM_BARCODE	= PE905544
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 6 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 3304'
DATE_CREATED	= 20/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 20, 1965 WOODSIDE SOUTH NO.1 TEST NO.6
RECORDER NO.2237 RECORDER DEPTH 3304'



PE905545

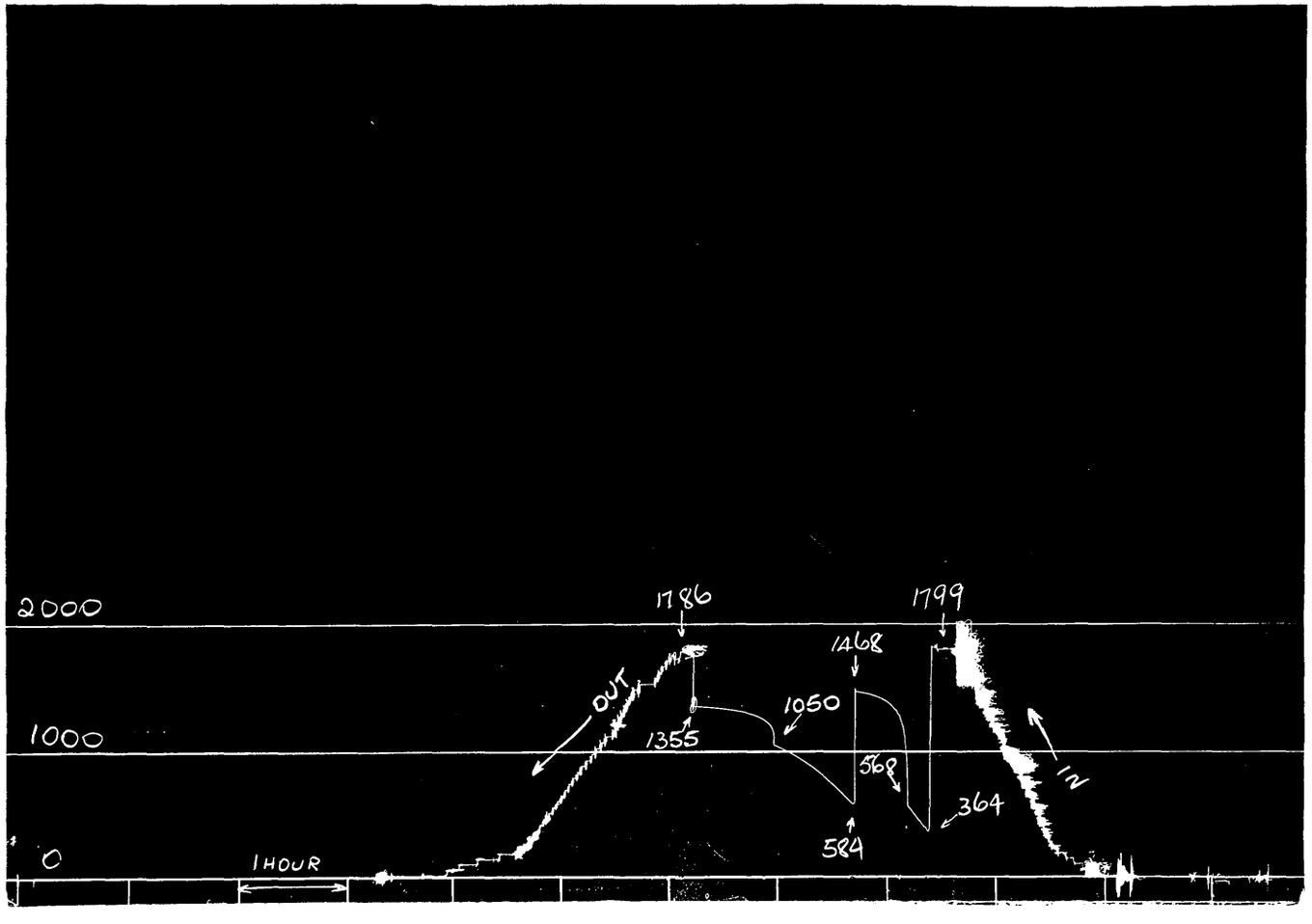
This is an enclosure indicator page.
The enclosure PE905545 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905545 has the following characteristics:

ITEM_BARCODE	= PE905545
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 7 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 3549'
DATE_CREATED	= 21/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 21, 1965 WOODSIDE SOUTH NO.1 TEST NO.7
RECORDER NO.2237 RECORDER DEPTH 3549'



PE905546

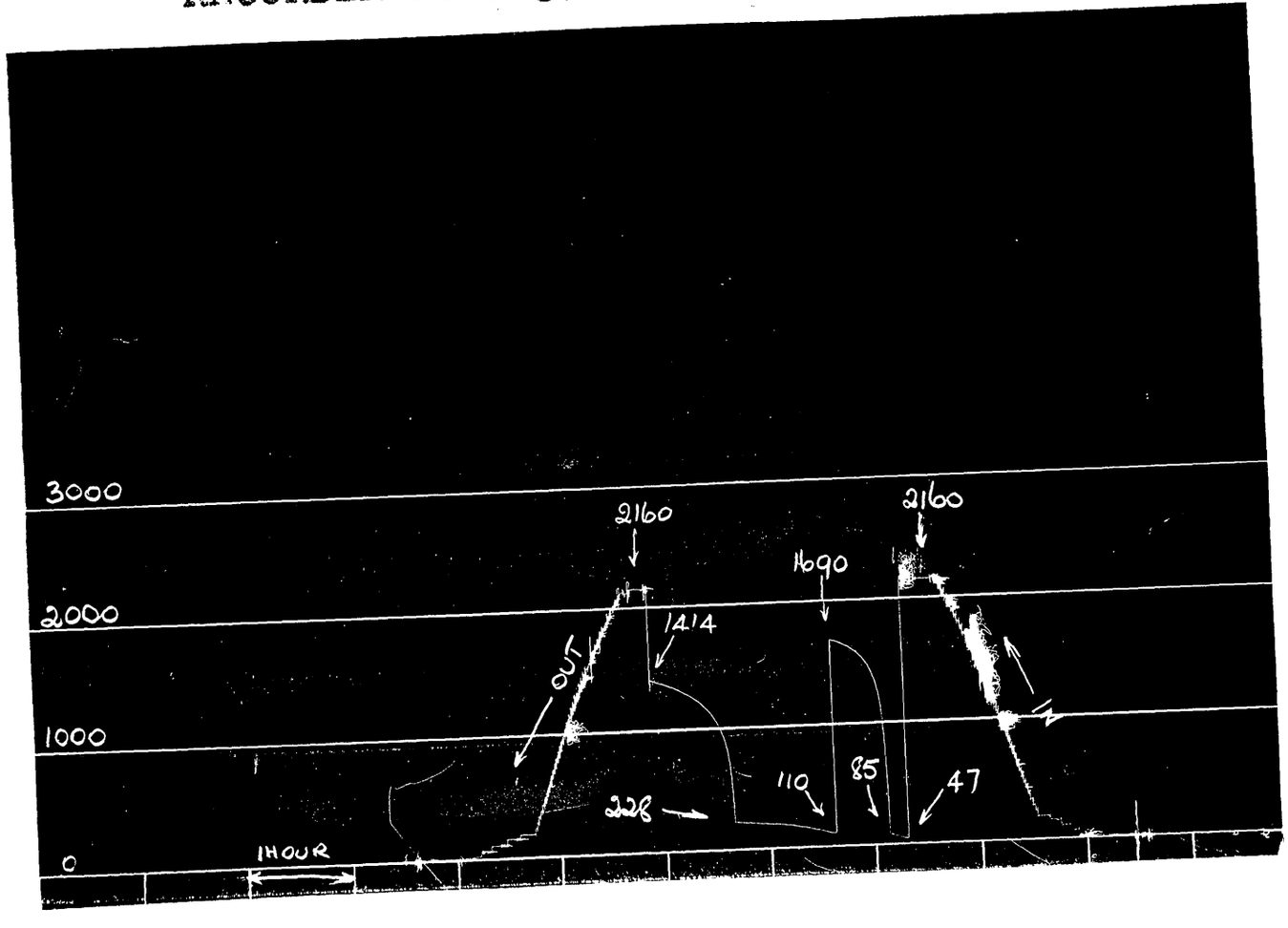
This is an enclosure indicator page.
The enclosure PE905546 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905546 has the following characteristics:

ITEM_BARCODE	= PE905546
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 8 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4135'
DATE_CREATED	= 25/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JUNE 25, 1965 WOODSIDE SOUTH NO.1 TEST NO.8
RECORDER NO.2237 RECORDER DEPTH 4135'



PE905547

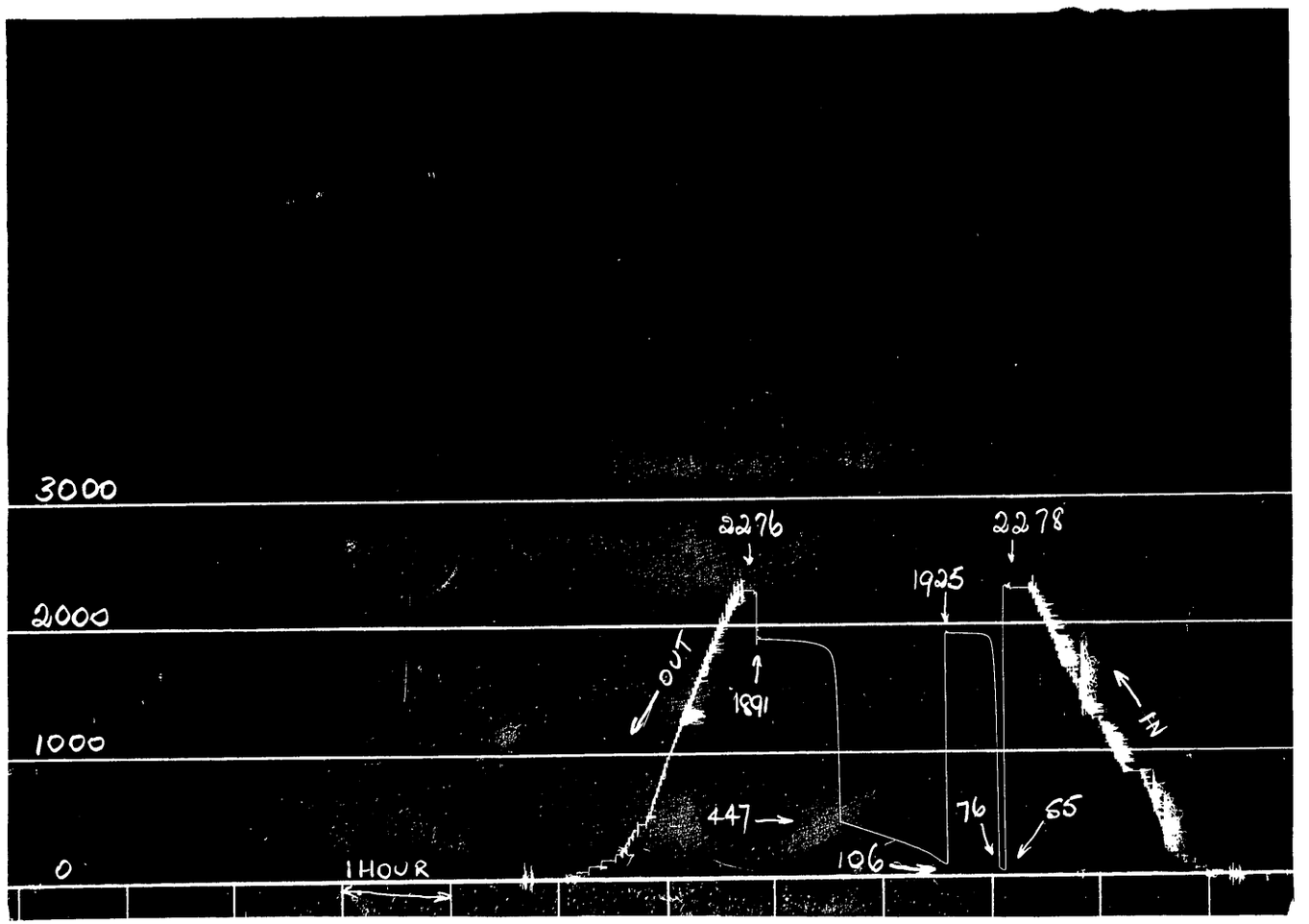
This is an enclosure indicator page.
The enclosure PE905547 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905547 has the following characteristics:

ITEM_BARCODE	= PE905547
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 9 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4343'
DATE_CREATED	= 27/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JUNE 27, 1965 WOODSIDE SOUTH NO.1 TEST NO.9
RECORDER NO.2237 RECORDER DEPTH 4343'



PE905548

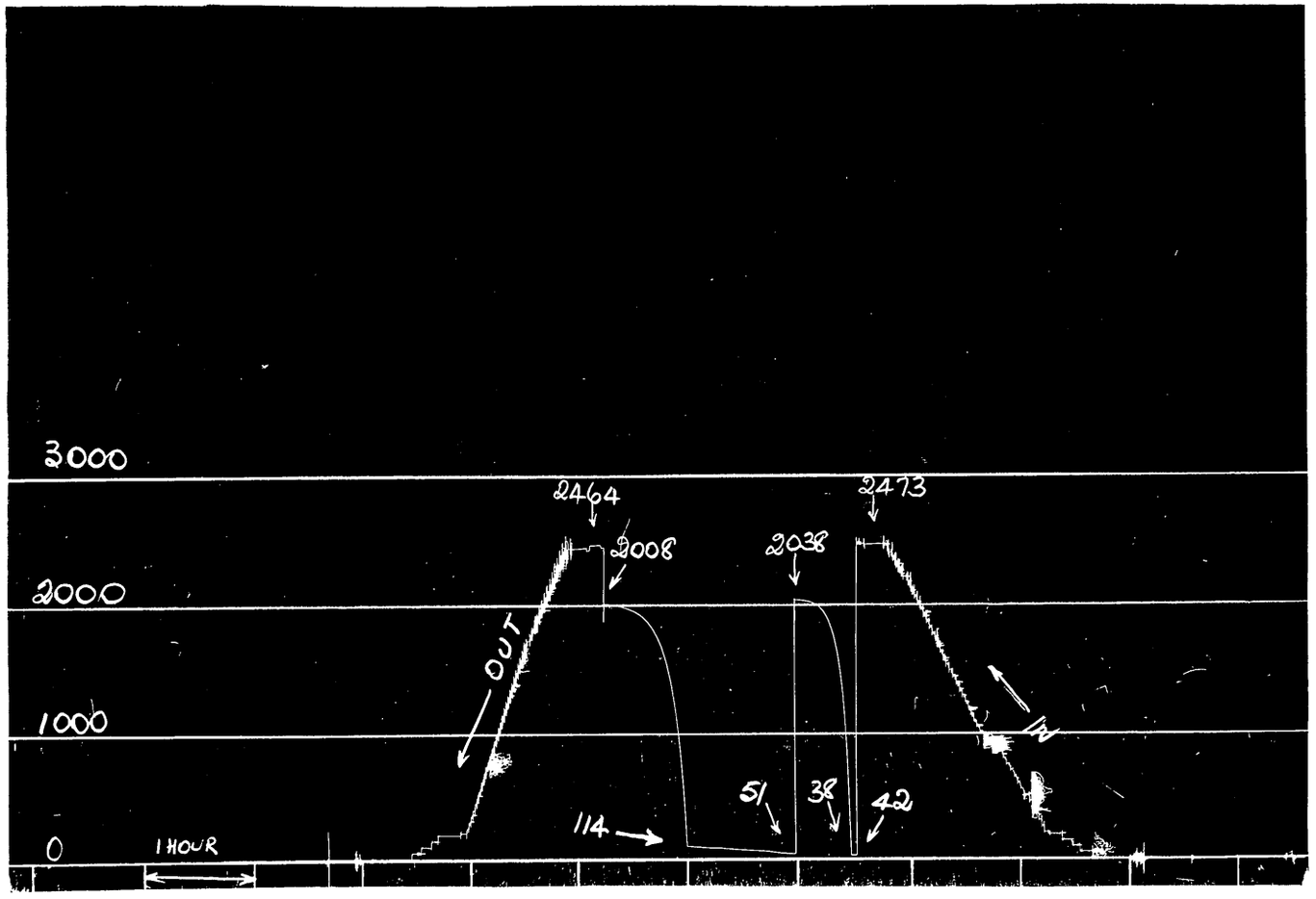
This is an enclosure indicator page.
The enclosure PE905548 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905548 has the following characteristics:

ITEM_BARCODE	= PE905548
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 10 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4593'
DATE_CREATED	= 29/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JUNE 29, 1965 WOODSIDE SOUTH NO.1 TEST NO.10
RECORDER NO.2237 RECORDER DEPTH 4593'



PE905549

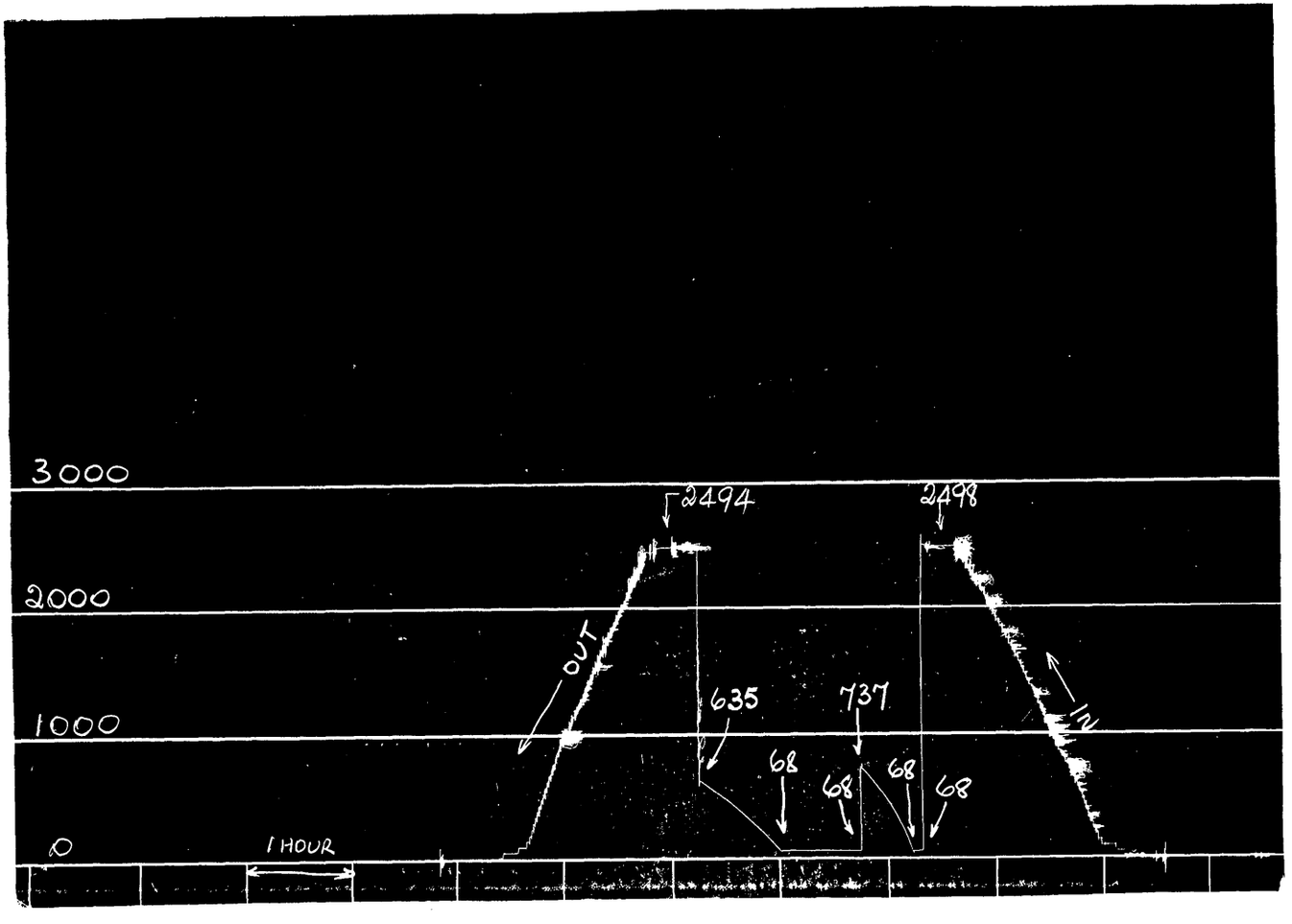
This is an enclosure indicator page.
The enclosure PE905549 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905549 has the following characteristics:

ITEM_BARCODE	= PE905549
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 11 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4783'
DATE_CREATED	= 4/07/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JULY 4, 1965 WOODSIDE SOUTH NO.1 TEST NO.11
RECORDER NO.2237 RECORDER DEPTH 4783'



PE905550

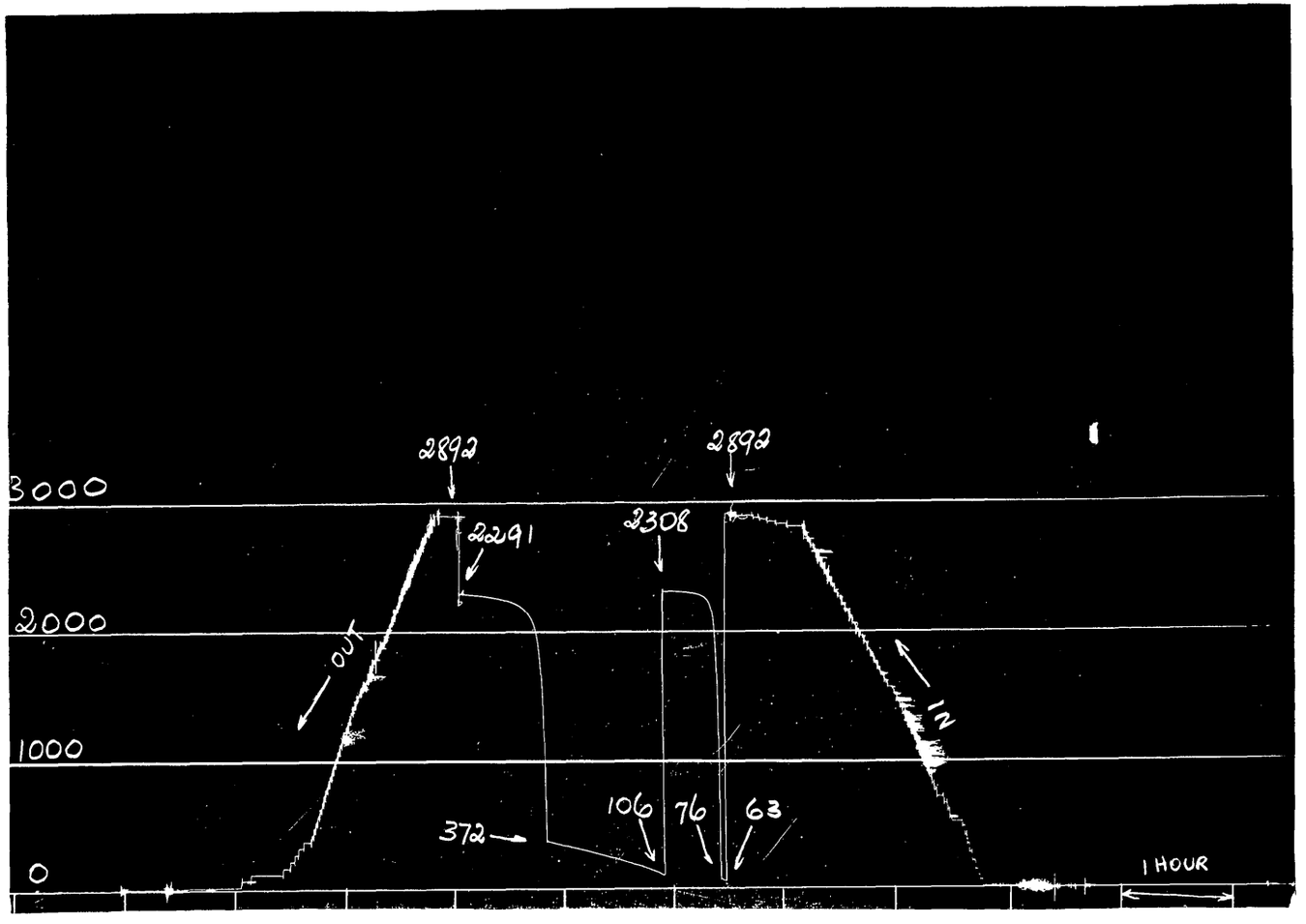
This is an enclosure indicator page.
The enclosure PE905550 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905550 has the following characteristics:

ITEM_BARCODE	= PE905550
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 12 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 5242'
DATE_CREATED	= 8/07/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JULY 8, 1965 WOODSIDE SOUTH NO.1 TEST NO.12
RECORDER NO.2237 RECORDER DEPTH 5242'



PE905551

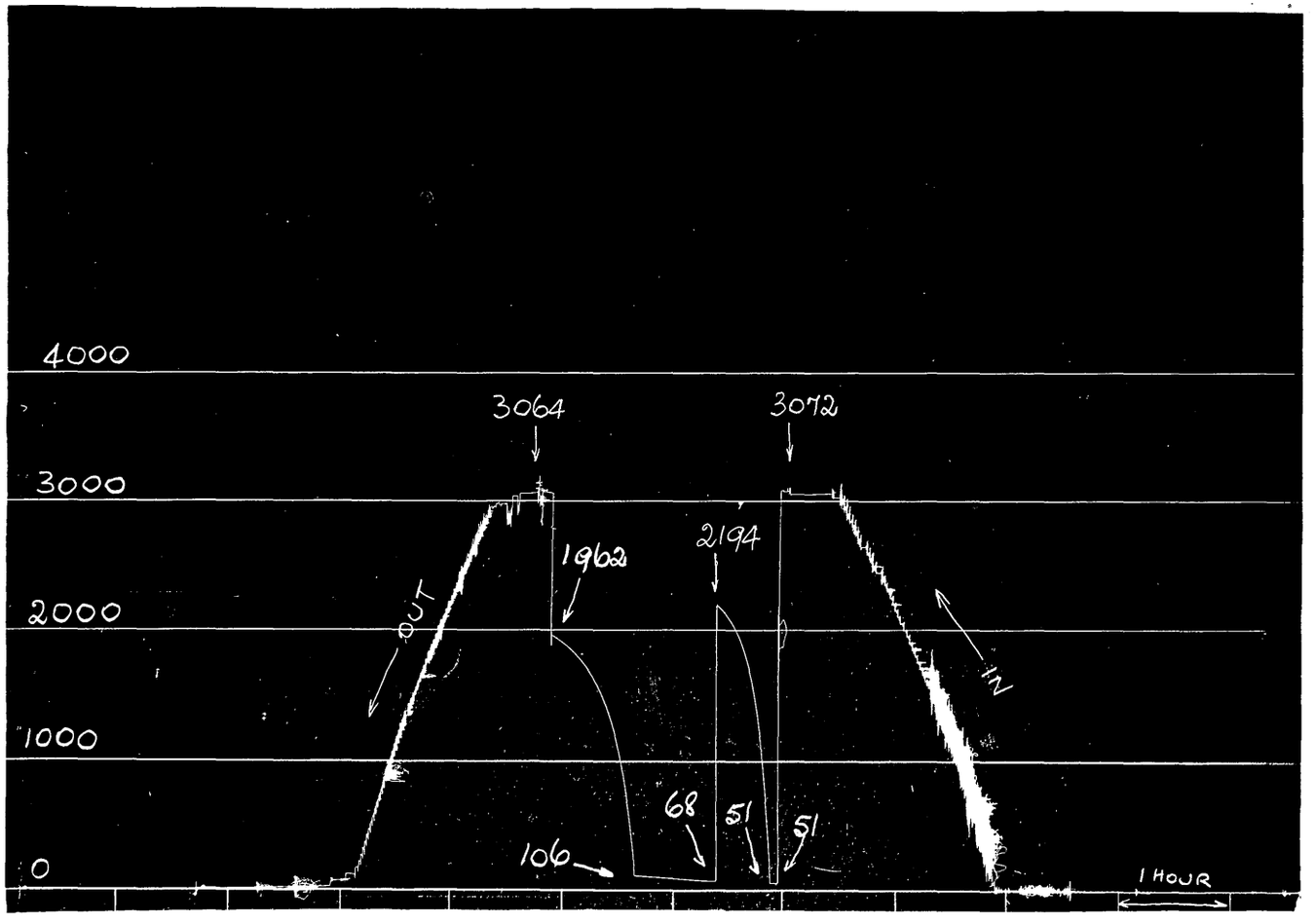
This is an enclosure indicator page.
The enclosure PE905551 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905551 has the following characteristics:

ITEM_BARCODE	= PE905551
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2237--test no. 13 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 5583'
DATE_CREATED	= 11/07/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JULY 11, 1965 WOODSIDE SOUTH NO.1 TEST NO.13
RECORDER NO.2237 RECORDER DEPTH 5583'



PE905552

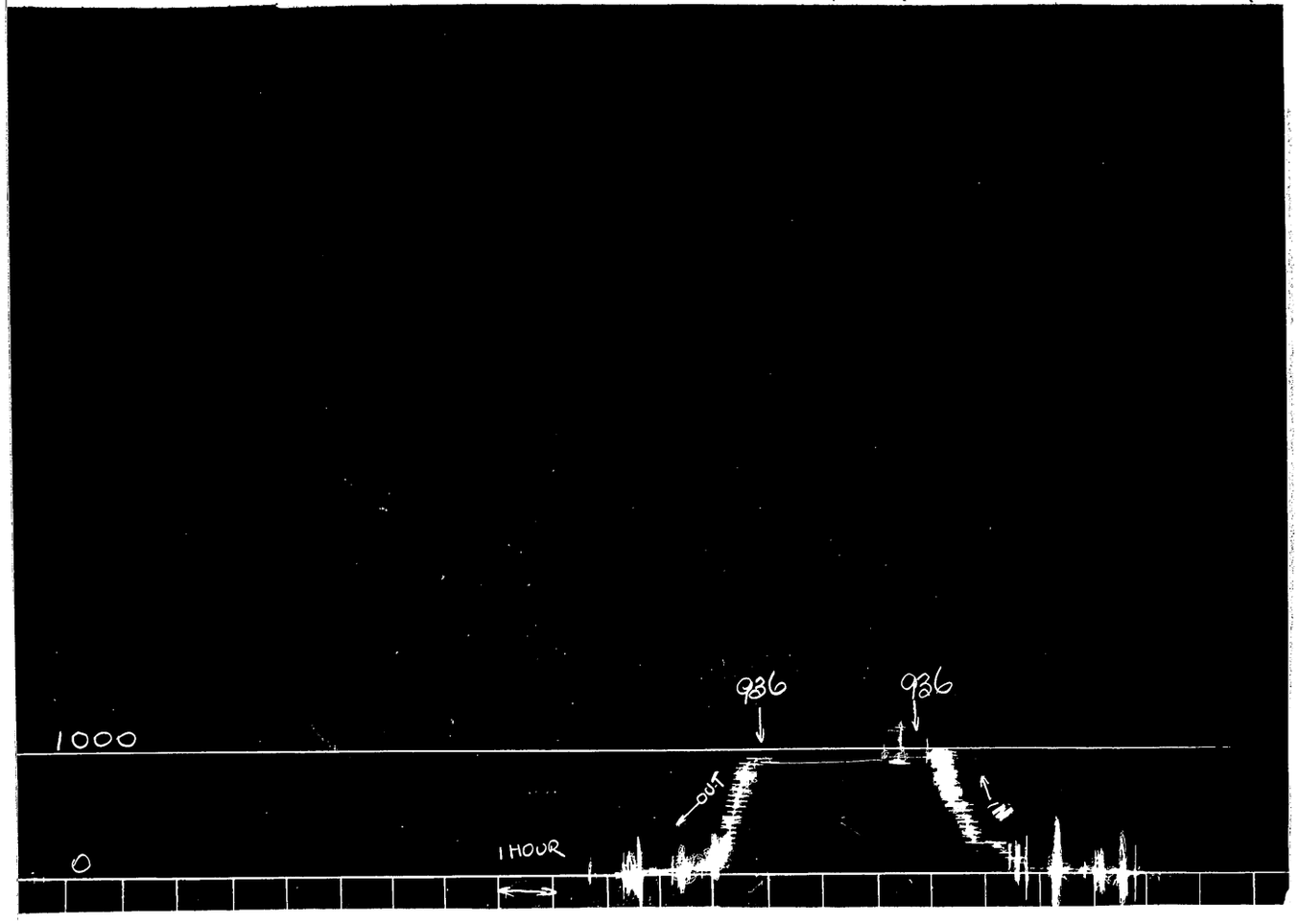
This is an enclosure indicator page.
The enclosure PE905552 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905552 has the following characteristics:

ITEM_BARCODE	= PE905552
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 1 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 1990'
DATE_CREATED	= 7/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (JAKE ENTRANCE) OIL.CO.
JUNE 7, 1965 WOODSIDE SOUTH NO.1 TEST NO.1
RECORDER NO.2238 RECORDER DEPTH 1990'



PE905553

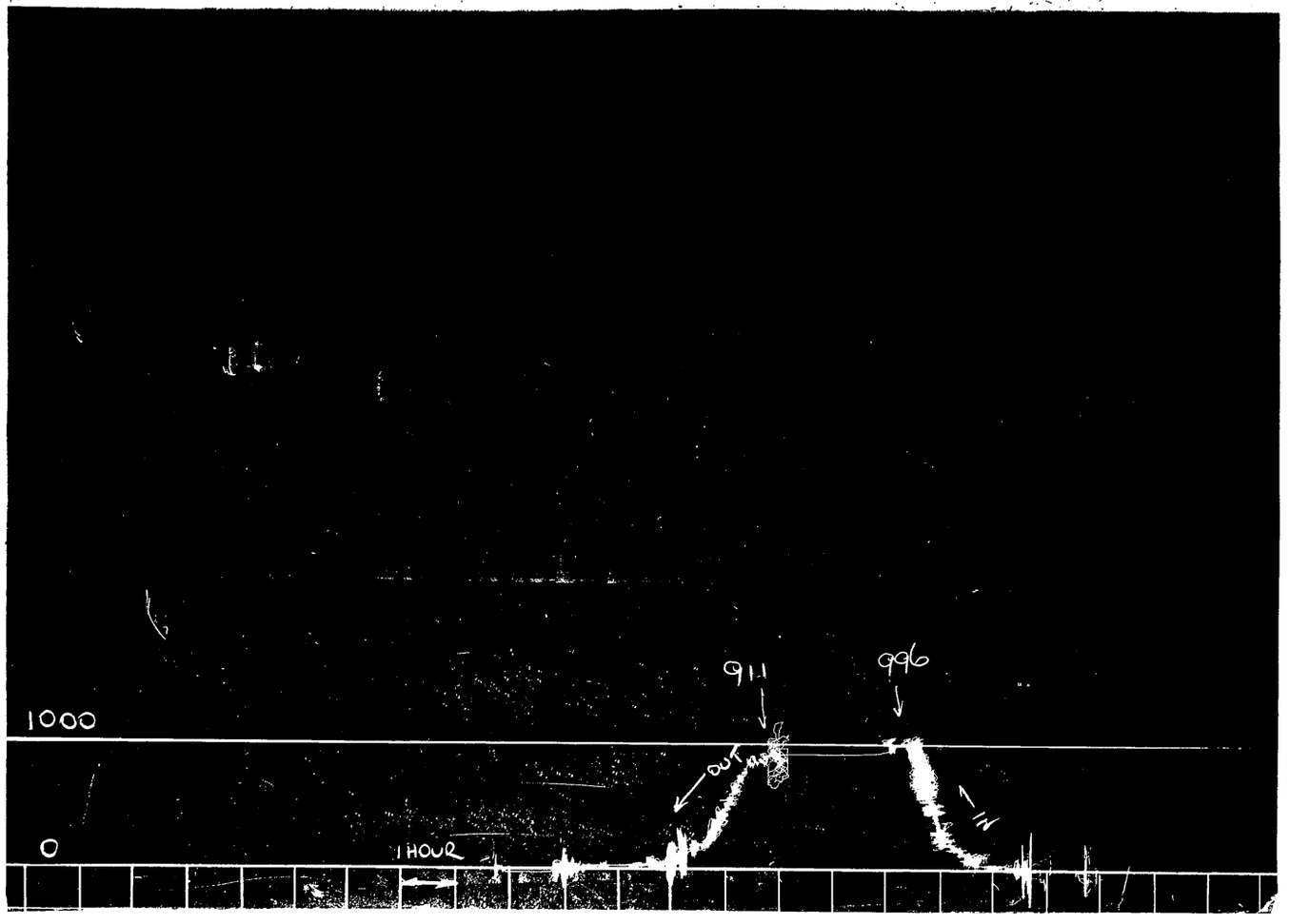
This is an enclosure indicator page.
The enclosure PE905553 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905553 has the following characteristics:

ITEM_BARCODE	= PE905553
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 2 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 2051'
DATE_CREATED	= 8/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 8, 1965 WOODSIDE SOUTH NO.1 TEST NO.2
RECORDER NO.2238 RECORDER DEPTH 2051'



PE905554

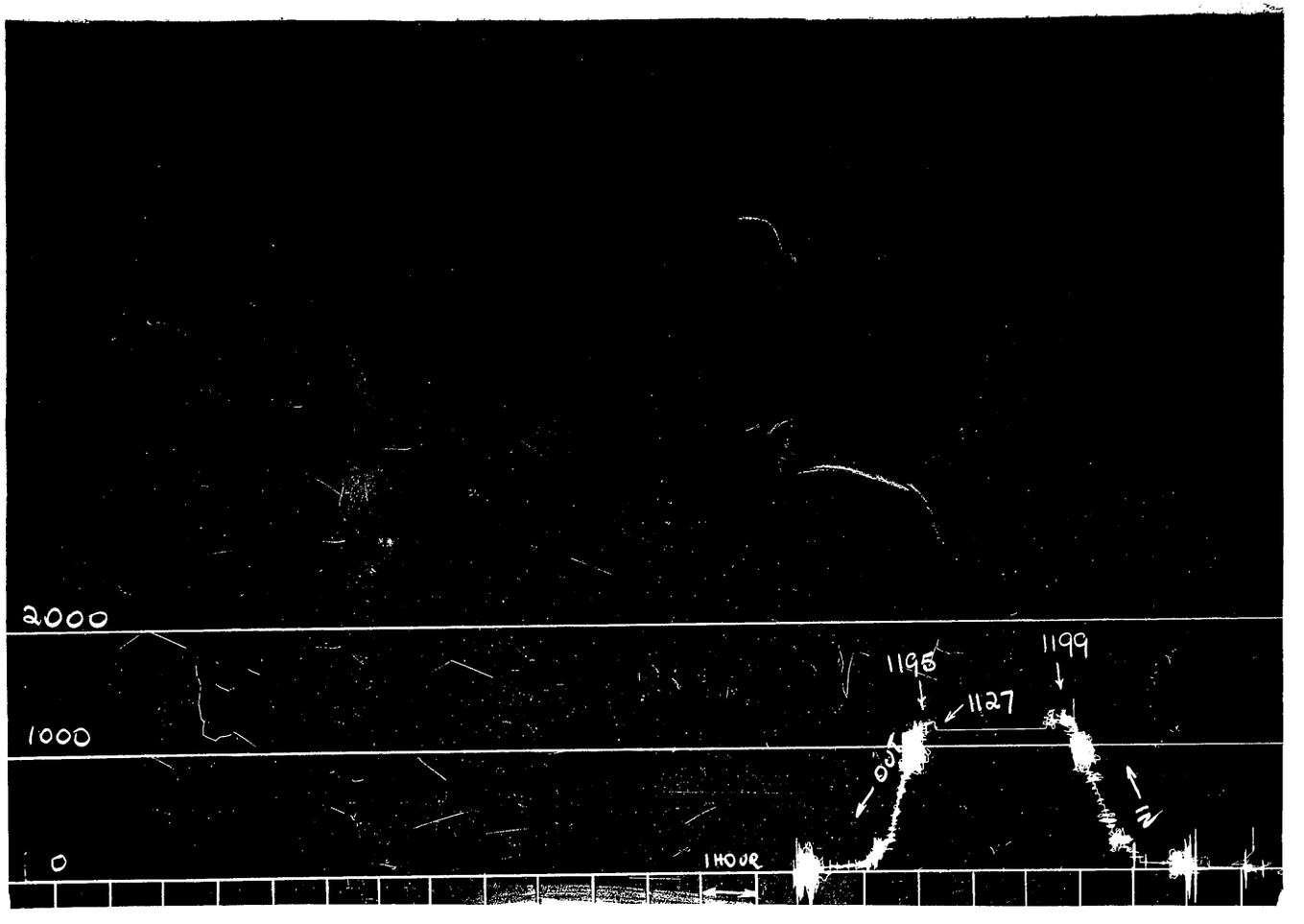
This is an enclosure indicator page.
The enclosure PE905554 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905554 has the following characteristics:

ITEM_BARCODE	= PE905554
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 3 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 2469'
DATE_CREATED	= 10/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 10, 1965 WOODSIDE SOUTH NO.1 TEST NO.3
RECORDER NO.2238 RECORDER DEPTH 2469'



PE905555

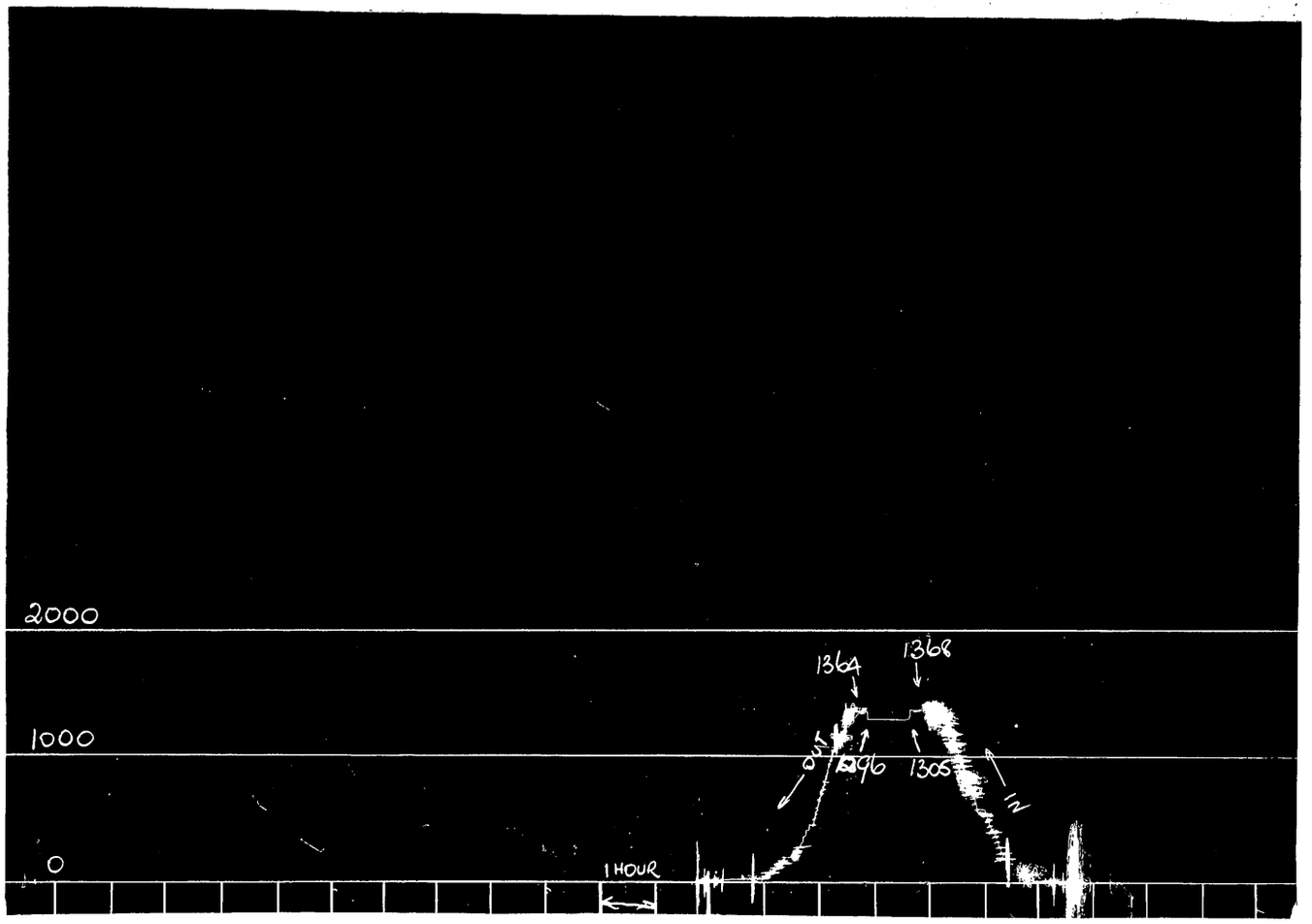
This is an enclosure indicator page.
The enclosure PE905555 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905555 has the following characteristics:

ITEM_BARCODE	= PE905555
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 4 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 2922'
DATE_CREATED	= 12/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 12, 1965 WOODSIDE SOUTH NO.1 TEST NO.4
RECORDER NO.2238 RECORDER DEPTH 2922'



PE905556

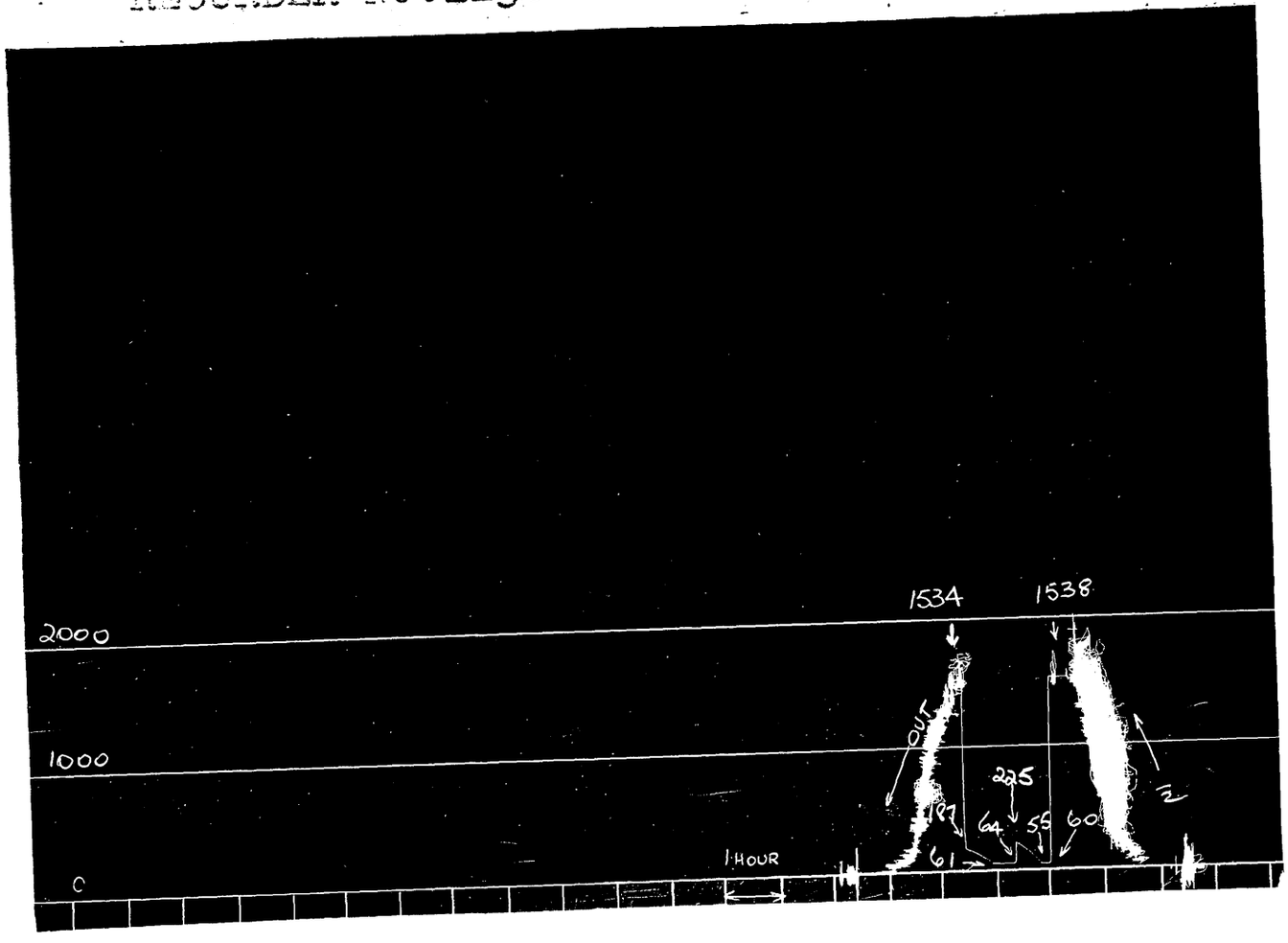
This is an enclosure indicator page.
The enclosure PE905556 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905556 has the following characteristics:

ITEM_BARCODE	= PE905556
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 5 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 3136'
DATE_CREATED	= 18/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 18, 1965 WOODSIDE SOUTH NO.1 TEST NO.5
RECORDER NO.2238 RECORDER DEPTH 3136'



PE905557

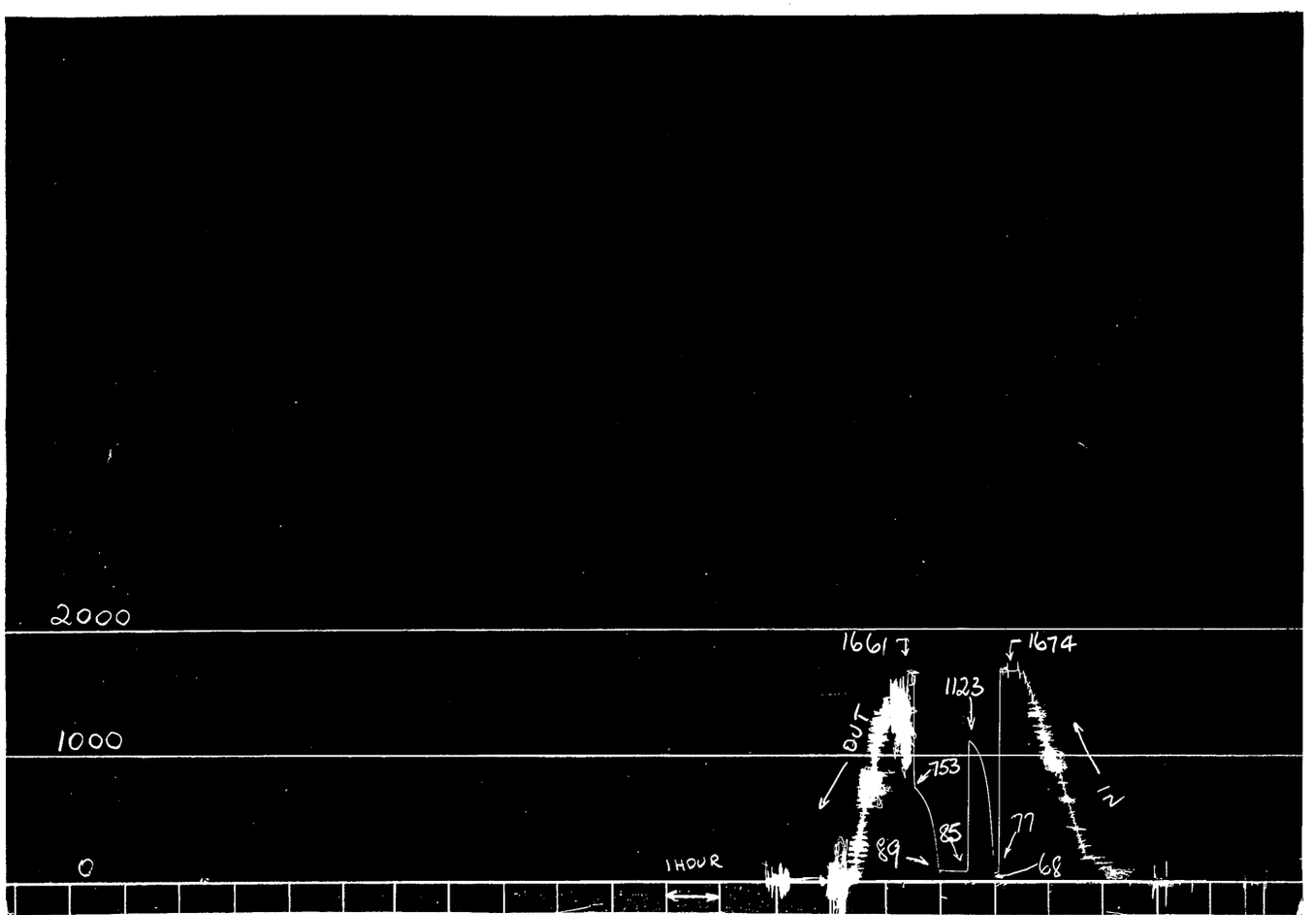
This is an enclosure indicator page.
The enclosure PE905557 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905557 has the following characteristics:

ITEM_BARCODE	= PE905557
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 6 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 3335'
DATE_CREATED	= 20/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.,
JUNE 20, 1965 WOODSIDE SOUTH NO.1 TEST NO.6
RECORDER NO.2238 RECORDER DEPTH 3335'



PE905558

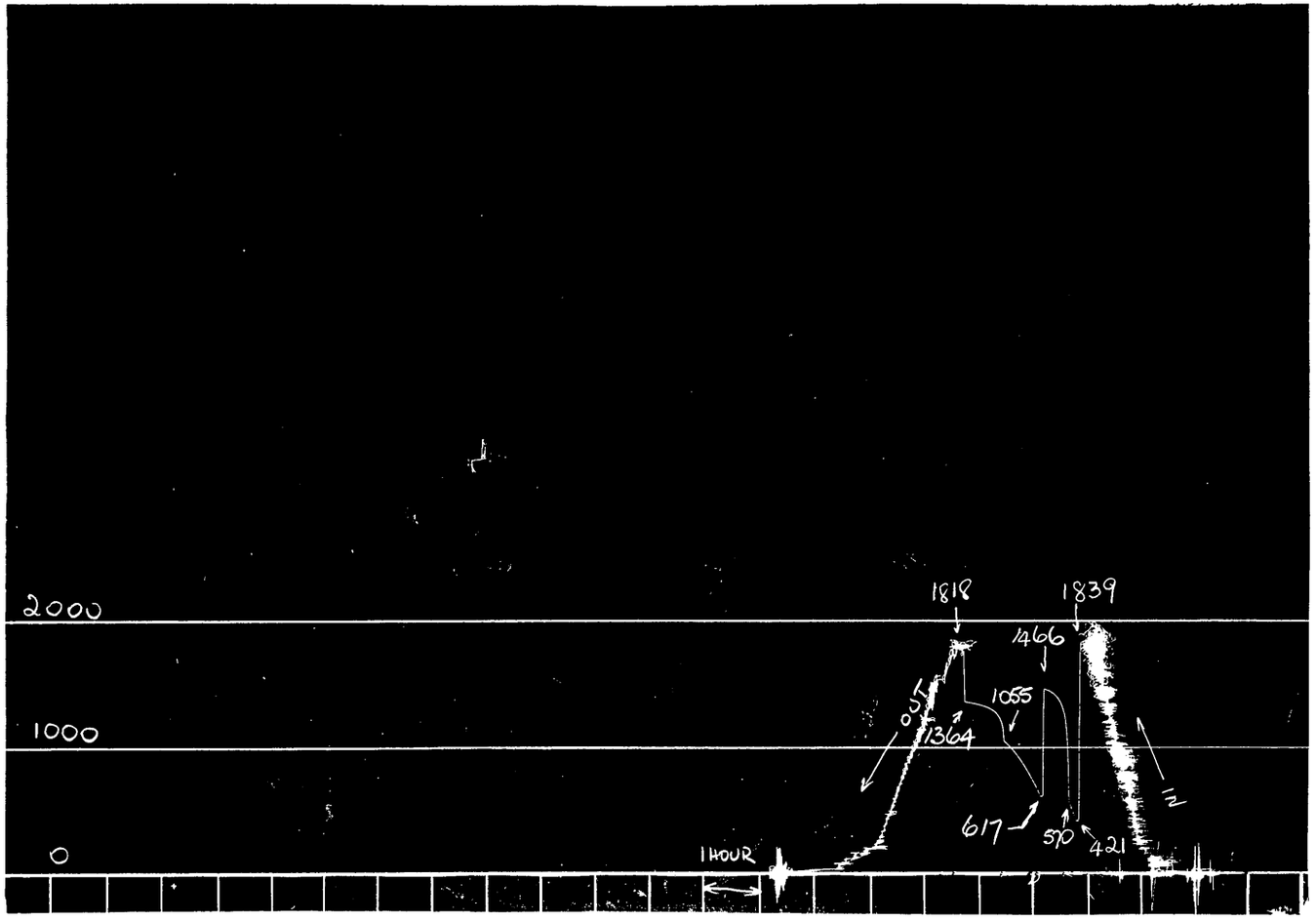
This is an enclosure indicator page.
The enclosure PE905558 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905558 has the following characteristics:

ITEM_BARCODE	= PE905558
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 7 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 3595'
DATE_CREATED	= 21/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKE ENTRANCE) OIL CO.
JUNE 21, 1965 WOODSIDE SOUTH NO.1 TEST NO.7
RECORDER NO.2238 RECORDER DEPTH 3595'



PE905559

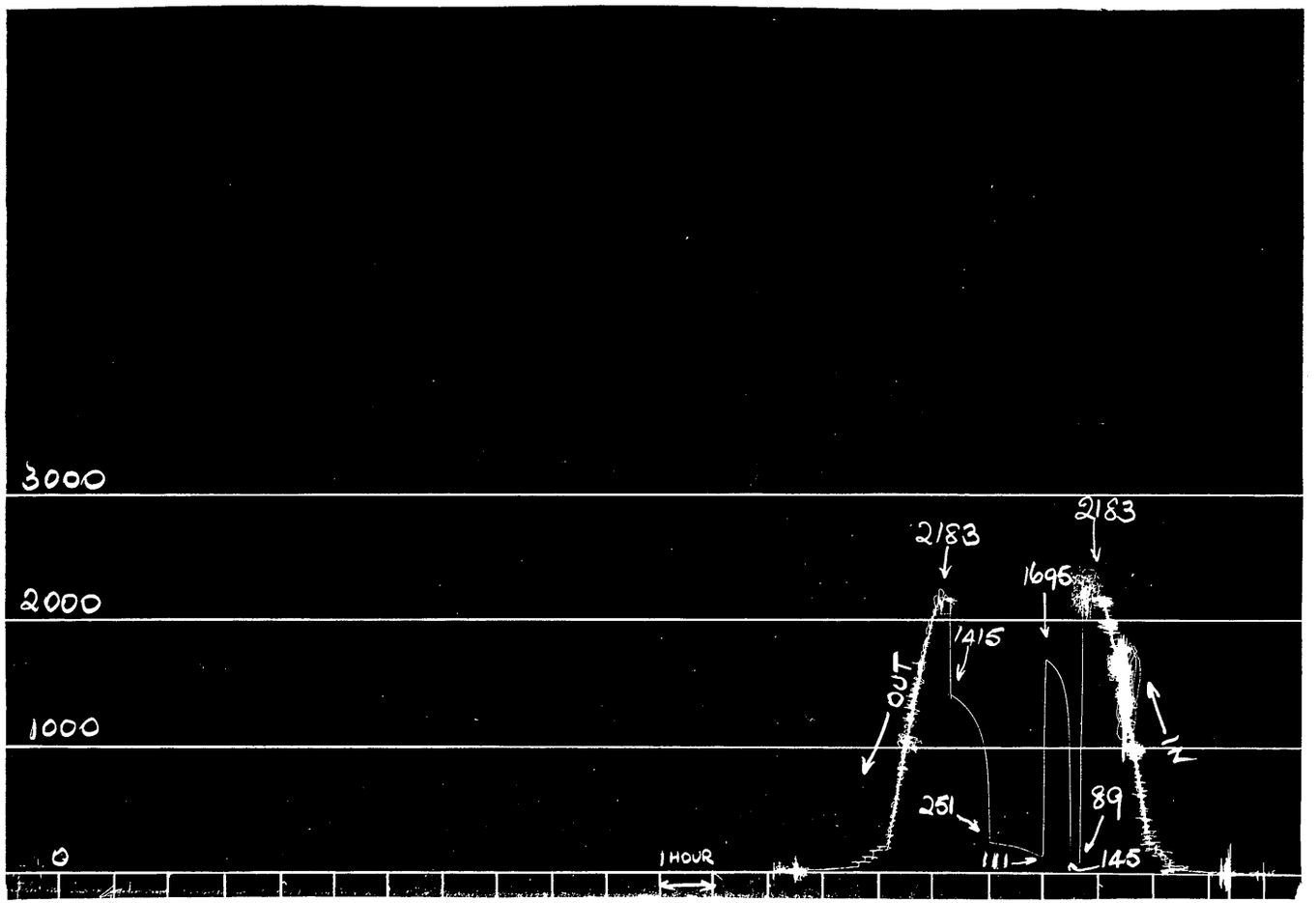
This is an enclosure indicator page.
The enclosure PE905559 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905559 has the following characteristics:

ITEM_BARCODE	= PE905559
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 8 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4169'
DATE_CREATED	= 25/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JUNE 25, 1965 WOODSIDE SOUTH NO.1 TEST NO.8
RECORDER NO.2238 RECORDER DEPTH 4169'



PE905560

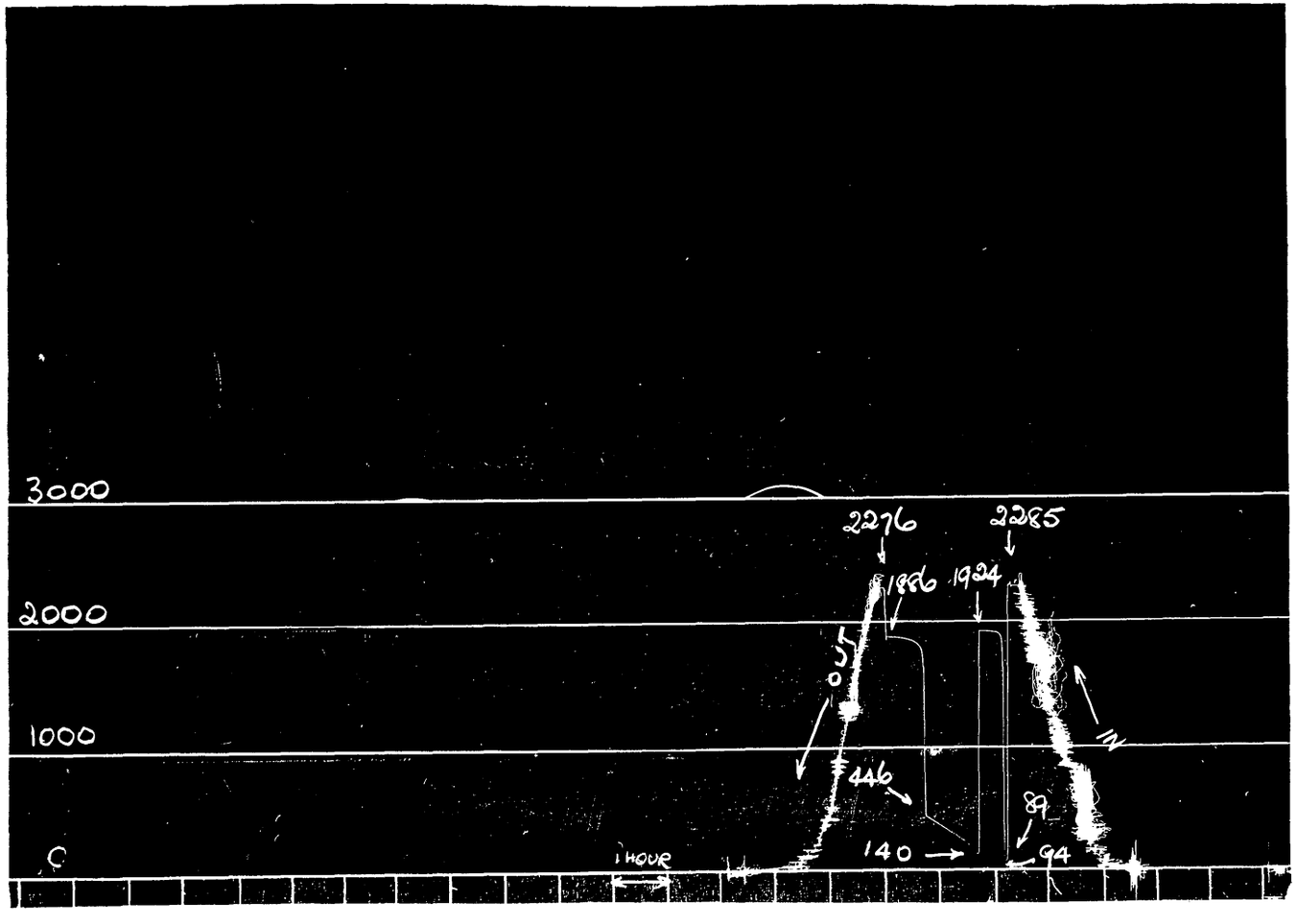
This is an enclosure indicator page.
The enclosure PE905560 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905560 has the following characteristics:

ITEM_BARCODE	= PE905560
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 9 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4387'
DATE_CREATED	= 27/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JUNE 27, 1965 WOODSIDE SOUTH NO.1 TEST NO.9
RECORDER NO.2238 RECORDER DEPTH 4387'



PE905561

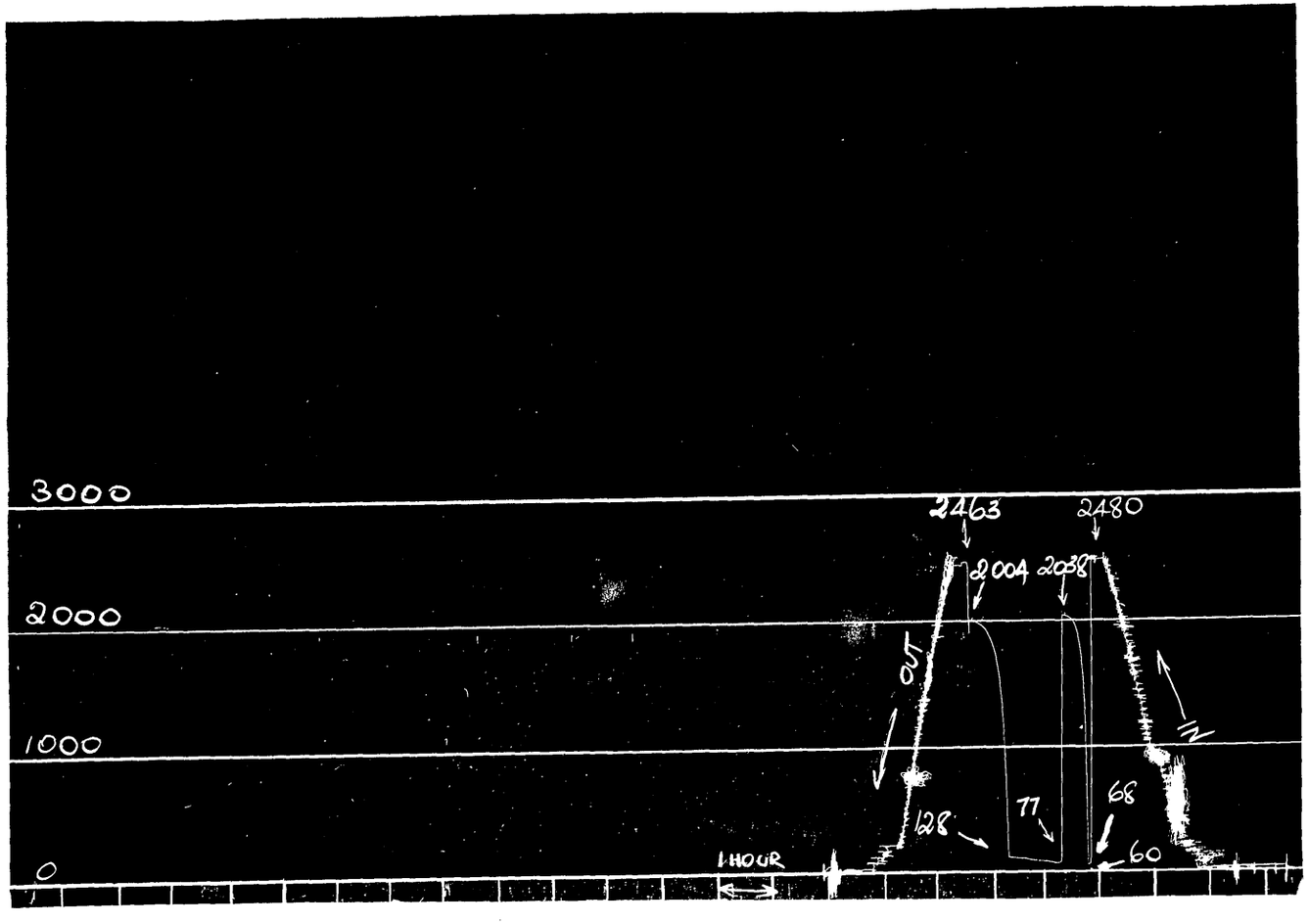
This is an enclosure indicator page.
The enclosure PE905561 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905561 has the following characteristics:

ITEM_BARCODE	= PE905561
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 10 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4622'
DATE_CREATED	= 29/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JUNE 29, 1965 WOODSIDE SOUTH NO.1 TEST NO.10
RECORDER NO.2238 RECORDER DEPTH 4622'



PE905562

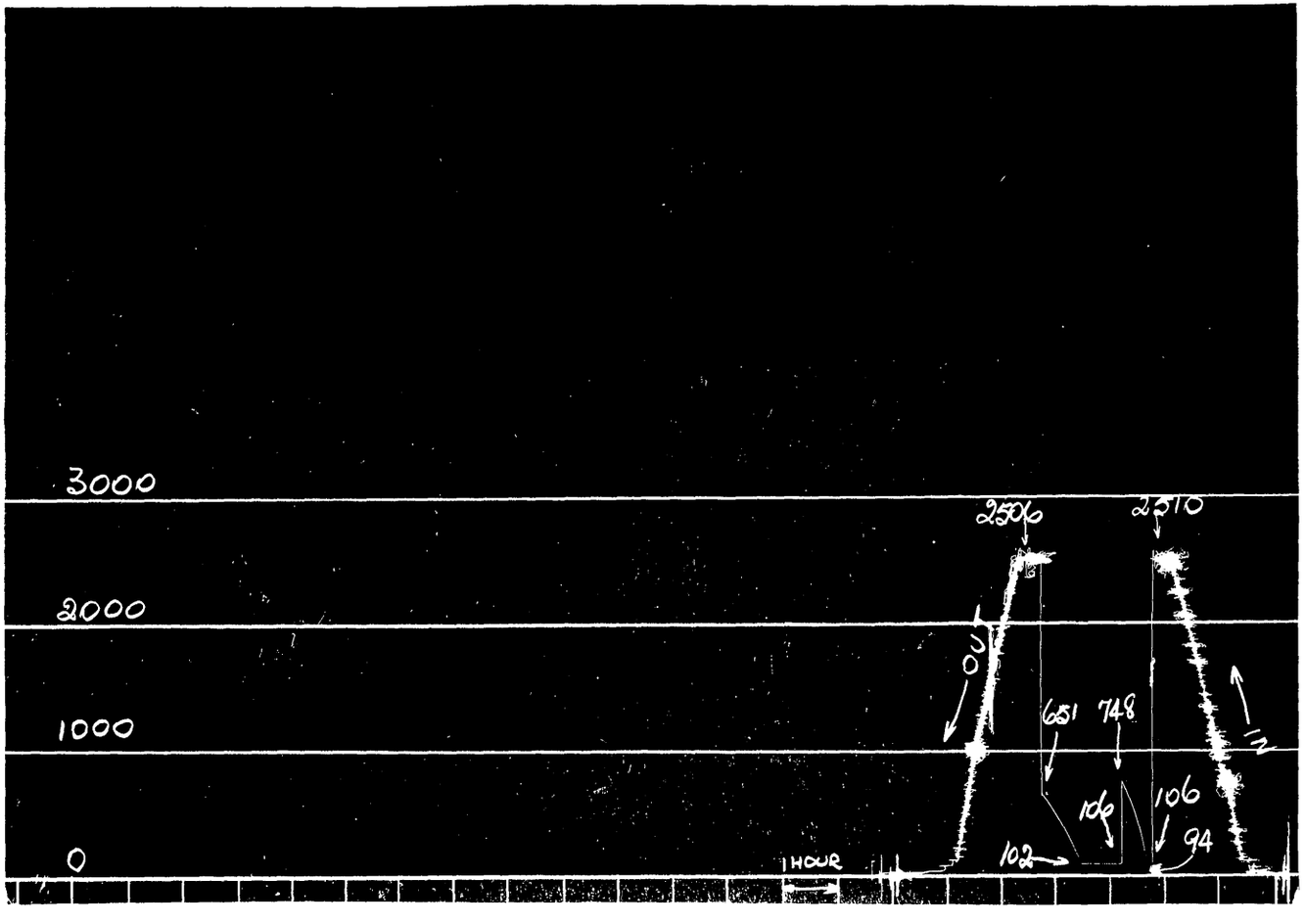
This is an enclosure indicator page.
The enclosure PE905562 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905562 has the following characteristics:

ITEM_BARCODE	= PE905562
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 11 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 4827'
DATE_CREATED	= 4/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JULY 4, 1965 WOODSIDE SOUTH NO.1 TEST NO.11
RECORDER NO.2238 RECORDER DEPTH 4827'



PE905563

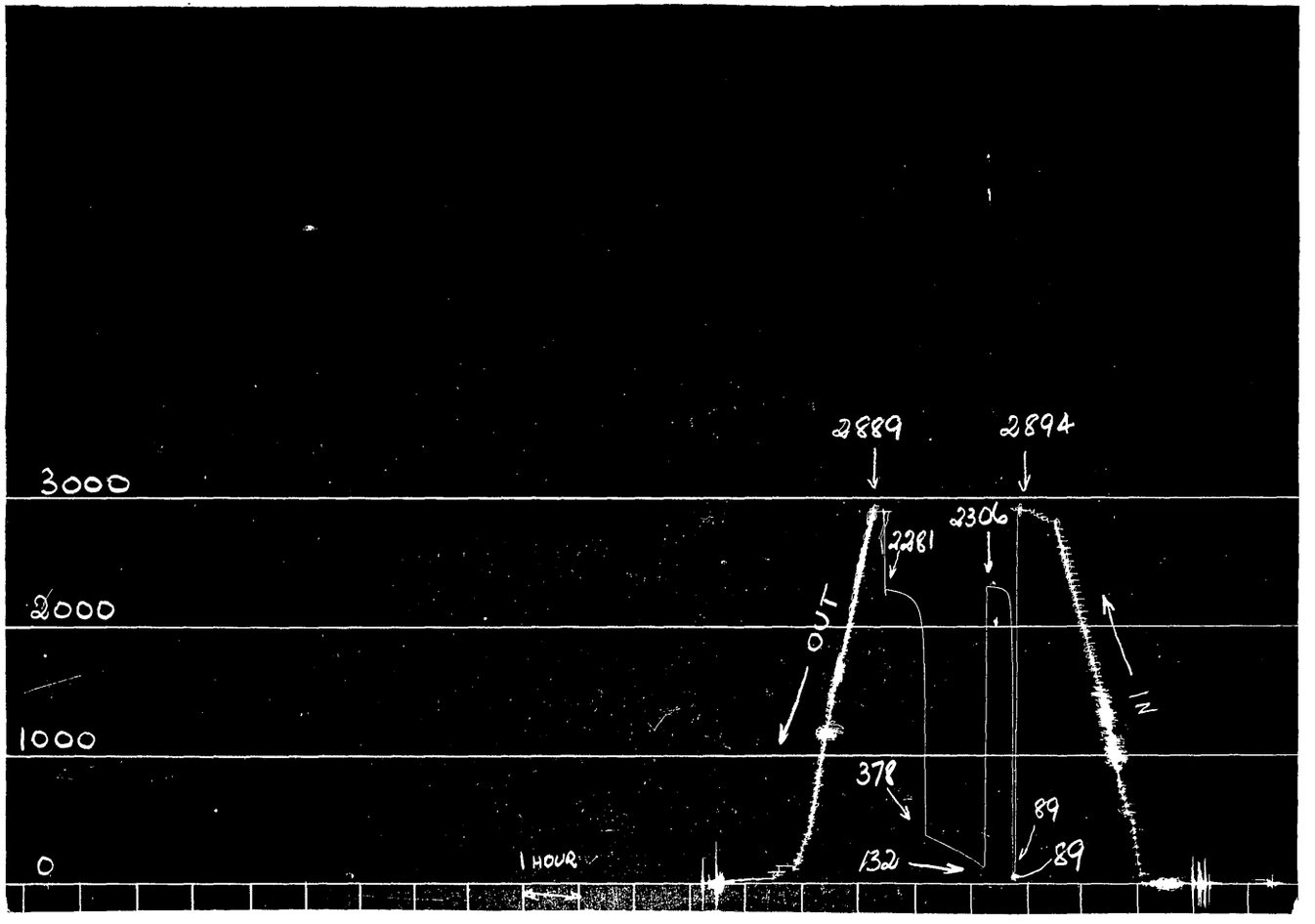
This is an enclosure indicator page.
The enclosure PE905563 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905563 has the following characteristics:

ITEM_BARCODE	= PE905563
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 12 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 5286'
DATE_CREATED	= 8/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JULY 8, 1965 WOODSIDE SOUTH NO.1 TEST NO.12
RECORDER NO.2238 RECORDER DEPTH 5286'



PE905564

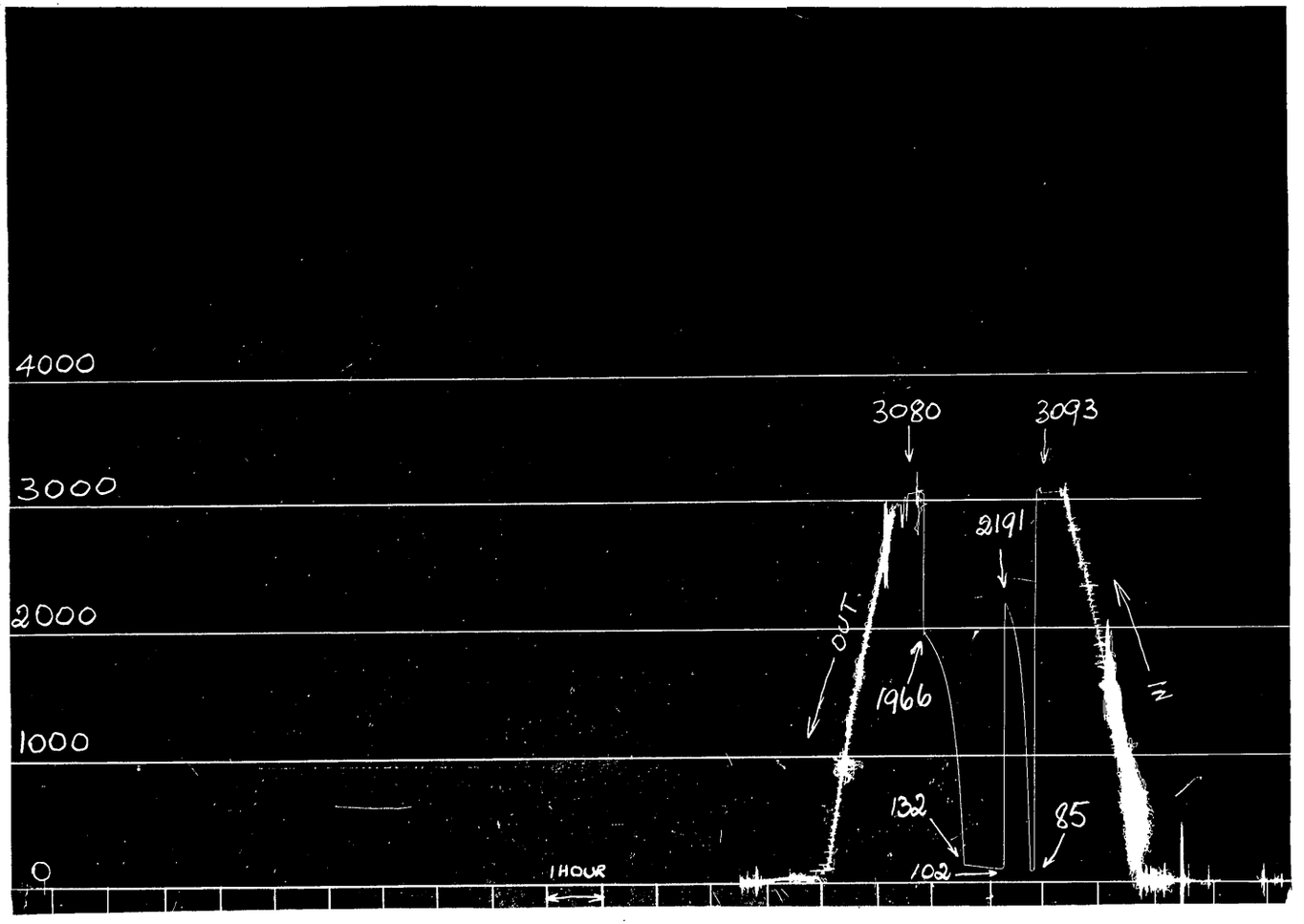
This is an enclosure indicator page.
The enclosure PE905564 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905564 has the following characteristics:

ITEM_BARCODE	= PE905564
CONTAINER_BARCODE	= PE902941
NAME	= Drill Stem Test Photograph
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= DST
DESCRIPTION	= Drill Stem Test Photograph, recorder no. 2238--test no. 13 (from WCR) for Woodside South-1
REMARKS	= Recorder depth 5632'
DATE_CREATED	= 11/06/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	=
CLIENT_OP_CO	=

(Inserted by DNRE - Vic Govt Mines Dept)

WOODSIDE (LAKES ENTRANCE) OIL CO. N.L.
JULY 11, 1965 WOODSIDE SOUTH NO.1 TEST NO.13
RECORDER NO.2238 RECORDER DEPTH 5632'



CHEMICAL BRANCH
MINES DEPARTMENT

JCK:SF

AR. MM/PE/30/5

9th November, 66

Report on sample No. 436/66

B.M.R.A. 4217

Sample : Mud from Oil Well

Locality : Parish : ~~Colquhoun~~ Balloong

Sender : Woodside (Lakes Entrance) Oil Co.N.L.,
792 Elizabeth Street,
Melbourne.

Particulars:	
No.	436
B.M.R.A.	4217
Bore	Woodside South No.1
Plant	-
Sample	L.S.T. No.1
Aquifer level (feet)	1944 to 2000
Owner	Woodside (L.E.)Oil Co.
Position	Woodside South
Remarks	Mud recovered at 120 (feet)

Results:		Parts per million
Total solids in solution		5060
Chloride	(Cl)	399
Sodium	(Na)	1924
Potassium	(K)	250
Iron-Soluble	(Fe)	150
pH		9.0

Comment

The black colour of the water and difficulty in obtaining a clear filtrate, limited the analysis to the above determinations.

John C. Kennedy

Senior Chemist,
Mines Department.

ORK.

2/10

CHEMICAL BRANCH
MINES DEPARTMENT

JCK:AP

An. 65/77/30/5

14th November, 65

Report on Sample No.437/65

U.W.&S. 4218

Sample : Water from oil well

Locality : Parish of ~~Salisbury~~ Ballong

Sender : The Manager,
Woodside(Lakes Entrance) Oil Company N.L.,
792 Elizabeth Street,
MELBOURNE.

Particulars:

No.	437
U.W.&S.	4218
Bore	Woodside South No.1
Sample	D.S.T. No.2
Aquifer level (feet)	2012 to 2213
Date	Not given
Owner	Woodside Oil Company
Position	Woodside South
Remarks	Water recovered at 270' mud, 1640' water

Results		Parts per million
Total solids in solution		770
Chloride	(Cl)	147
Carbonate	(CO_3)	35
Bicarbonate	(HCO_3)	400
Sulphate	(SO_4)	n.d.
Nitrate	(NO_3)	Nil
Calcium	(Ca)	25
Magnesium	(Mg)	11
Sodium	(Na)	241
Potassium	(K)	18
Iron-Soluble	(Fe)	0.8
Total Hardness (as $CaCO_3$)		108
pH		8.6

John C. Kennedy

Junior Chemist.
Mines Department.

3/10

JCK:SP

CHEMICAL BRANCH
MINES DEPARTMENT
14th November, 66

Am. MM/PP/30/5

Report on Sample No. 438/66

U.W.R.S. 4219

Sample : Water from oil well
Locality : Parish : ~~Colquhoun~~ Ballong
Sender : The Manager,
Woodside (Lakes Entrance) Oil Company Pty. Ltd.,
792 Elizabeth Street,
MELBOURNE.

Particulars:

No.	438
U.W.R.S.	4219
Bore	Woodside South No.1.
Sample	D.S.T. No.4
Aquifer level (feet)	2857 to 3035
Date	Not given
Owner	Woodside (L.E.) Oil Co.
Position	Woodside South
Remarks:	Water recovered at 940 feet.

Results:		Parts per million
Total solids in solution		1860
Chloride	(Cl)	195
Carbonate	(CO_3)	18
Bicarbonate	(HCO_3)	n.d.
Sulphate	(SO_4)	471
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	n.d.
Magnesium	(Mg)	n.d.
Sodium	(Na)	733
Potassium	(K)	64
Iron-Soluble	(Fe)	21
Total hardness (as $CaCO_3$)		n.d.
pH		8.9

Appearance etc.

When separated from the muddy residue by filtration, the water was almost black in colour and possessed an unpleasant smell. The volume of filtered water available for analysis, was small.

John C. Kennedy
Senior Chemist.
Mines Department.

4/10

JCK:SP
AN. PG/10/1 11th May, 66

Report on Sample No. 1129/66
U.V.H.S. 3954

Sample	:	Mud and Water from Oil Bore
Locality	:	Parish : Balloong
Sender	:	The Manager, Woodside (Lakes Entrance Oil Co., 792 Elizabeth Street, MELBOURNE.

Particulars:

No.	1129
U.V.H.S.	3954
Bore	Woodside South No.1
Drill Stem Test	No.5
Depth (feet)	3130- 3299
Remarks:	~~Received~~ 30 feet of mud J.K.K. 16/5/66

Results:		Parts per million
Total solids in solution (by conductivity(		n.d.
Chloride	(Cl)	700
Carbonate	(CO_3)	n.d.
Bicarbonate	(HCO_3)	n.d.
Sulphate	(SO_4)	1580
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	102
Magnesium	(Mg)	2
Iron-Soluble	(Fe)	n.d.
Silica-Soluble	(Fe)	n.d.
Total hardness (as $CaCO_3$)		264

John G. Kennedy
for PMS

Senior Chemist,
Mines Department.

5/10

JCK:SP

11th May, 66

An. PG/10/11

Report on Sample No. 1130/65

U.W.R.S. 3955

Sample : Mud and water from Oil Bore

Locality : Parish : Balloong

Sender : The Manager,
Woodside (Lakes Entrance)Oil Co.,
792 Elizabeth Street,
MELBOURNE.

Particulars:

No.	1130
U.W.R.S.	3955
Bore	Woodside South No.1
Drill Stem Test	No.6
Depth(feet)	3318-3509 JCK. 11/5/65
Remarks	Received 105 feet of mud.

Results:		Parts per million
Total solids in solution (by conductivity)		4900
Chloride	(Cl)	960
Carbonate	(CO_3)	Nil
Bicarbonate	(HCO_3)	168
Sulphate	(SO_4)	1368
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	104
Magnesium	(Mg)	1
Iron-Soluble	(Fe)	n.d.
Silica-Soluble	(SiO_2)	n.d.
Total hardness	(as $CaCO_3$)	264
pH		n.d.

John G. Kennedy

Senior Chemist,
Mines Department.

6/10

JCK:SP

An. P0/10/1

11th May, 65

Report on Sample No. 1131/65

U.S.B.S. 3956

Sample : Mud and water from Oil Bore

Locality : Parish of Balloong

Sender : The Manager,
Woodside (Lakes Entrance) Oil Co.,
792 Elizabeth Street,
MELB VIC.

Particulars:

No.	1131
U.S.B.S.	3956
Bore	Woodside South No.1
Drillstem Test	No.7
Depth (feet)	3560'-3760'
Remarks	Sample of salt-water above tool (rec. 540 feet mud, 1160 feet muddy water, 350' clear water.)

Results:		Parts per million
Total solids in solution (by conductivity)		19,750
Chloride	(Cl)	7,900
Carbonate	(CO_3)	Nil
Bicarbonate	(HCO_3)	122
Sulphate	(SO_4)	397
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	849
Magnesium	(Mg)	17
Iron-Soluble	(Fe)	n.d.
Silica-Soluble	(SiO_2)	n.d.
Total hardness (as $CaCO_3$)		2,190
pH		7.9

John C. Kennedy

Senior Chemist,
Mines Department.

7/10

JCK:SP

An. 70/ 10/1

12th May, 66

Report on Sample No. 1132/65

W.M.B.A. 3957

Sample	:	Mud and water from Oil Bore
Locality	:	Parish : Ballocng
Sender	:	The Manager, Woodside (Lakes Entrance) Oil Co., 79? Elizabeth Street MELBOURNE.

Particulars:

No.	1132
W.M.B.A.	3957
Bore	Woodside South No.1
Drill Stem Test	No.8
Depth (feet)	4152 - 435?
Remarks	Sample from above tool. Rec.3?0 feet mud.

Results:		Parts per million
Total solids in solution		n.d.
Chlorides	(Cl)	1320
Carbonate	(CO_3)	Nil
Bicarbonate	(HCO_3)	n.d.
Sulphate	(SO_4)	1304
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	134
Magnesium	(Mg)	3
Iron-Soluble	(Fe)	n.d.
Silica -Soluble	(SiO_2)	n.d.
Total hardness (as $CaCO_3$)		346
pH		n.d.

John G. Kennedy

Senior Chemist,
Mines Department.

8/10

JCK:JP

An. PG/10/1 12th May, 66

Report on Sample No. 1133/65

U.W.R.S. 3958

Sample	:	Mud and Water from Oil Bore
Locality	:	Parish : Balloong
Sender	:	The Manager, Woodside (Lakes Entrance)Oil Co., 792 Elizabeth Street, MELBOURNE.

Particulars :

No.	1133
U.W.R.S.	3958
Bore	Woodside South No.1
Drill Stem Test	No.9
Depth (feet)	4360 - 4570
Remarks	Sample from above tool. Rec. 85 feet mud.

Results:		Parts per million
Total solids in solution		n.d.
Chloride	(Cl)	1506
Carbonate	(CO_3)	Nil
Bicarbonate	(HCO_3)	n.d.
Sulphate	(SO_4)	1654
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	147
Magnesium	(Mg)	3
Iron-Total	(Fe)	n.d.
Silica-Soluble	(SiO_2)	n.d.
Total hardness (as $CaCO_3$)		379
pH		n.d.

Senior Chemist,
Mines Department.

9/10

JCK:SP

AM. P6/10/1

12th May, 66

Report on Sample No. 1134/65

G.W.R.S. 3959

Sample : Mud and Water from Oil Bore

Locality : Parish ; Balloong

Sender : The Manager,
Woodside (Lakes Entrance)Oil.Co.,
792 Elizabeth Street,
MELBOURNE.

Particulars:

No.	1134
G.W.R.S.	3959
Bore	Woodside South No.1
Drill Stem Test	No.10
Depth (feet)	4610 - 4787
Remarks	Rec.180 feet mud

Results:		Parts per million
Total solids in solution		n.d.
Chloride	(Cl)	4850
Carbonate	(CO_3)	n.d.
Bicarbonate	(HCO_3)	n.d.
Sulphate	(SO_4)	718
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	554
Magnesium	(Mg)	Nil
Iron-total	(Fe)	n.d.
Iron-Soluble	(Fe)	n.d.
Silica-Soluble	(SiO_2)	n.d.
Total hardness (as $CaCO_3$)		1385
pH		n.d.

John G. Kennedy

Senior Chemist,
Mines Department.

10/10

JCK:EP

12th May, 66

An. PG/10/1

Report on Sample No. 1135/65

U.W.R.S. 3960

Sample : Mud and Water from Oil Bore

Locality : Parish : Balloong

Sender : The Manager,
Woodside (Lakes Entrance)Oil Co.,
792 Elizabeth Street,
MELBOURNE.

Particulars :

No.	1135
U.W.R.S.	3960
Bore	Woodside South No.1
Drill Stem Test	No.12
Depth (feet)	5259 - 5469
Remarks	Sample from above tool Rec. 180 feet.mud, 530 feet muddy water

Results:		Parts per million
Total solids in solution (by conductivity)		14,500
Chloride	(Cl)	6,486
Carbonate	(CO_3)	n.d.
Bicarbonate	(HCO_3)	n.d.
Sulphate	(SO_4)	1,072
Nitrate	(NO_3)	n.d.
Calcium	(Ca)	1,352
Magnesium	(Mg)	3
Iron-Soluble	(Fe)	n.d.
Silica -Soluble	(SiO_2)	n.d.
Total hardness (as $CaCO_3$)		3,387
pH		n.d.

John C. Kennedy

Senior Chemist,
Mines Department.

PE603963

This is an enclosure indicator page.
The enclosure PE603963 is enclosed within the container PE902941 at this location in this document.

The enclosure PE603963 has the following characteristics:

ITEM_BARCODE	= PE603963
CONTAINER_BARCODE	= PE902941
NAME	= Continuous Dipmeter
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Continuous Dipmeter Log (from WCR) for Woodside South-1
REMARKS	=
DATE_CREATED	= 13/07/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	= SCHLUMBERGER
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX No. IV

SEISMIC SURVEY

The Vibroseis Seismic Survey was carried out on an extension to the subsidised Paynesville Seismic Survey 64/4573.

Briefly this survey was completed to examine in more detail the sedimentary attitudes occurring above the gravity anomalies (B.M.R. Map G93-23 Alberton) referred to in Page 12 (this report). A plate of this survey is enclosed in this report.

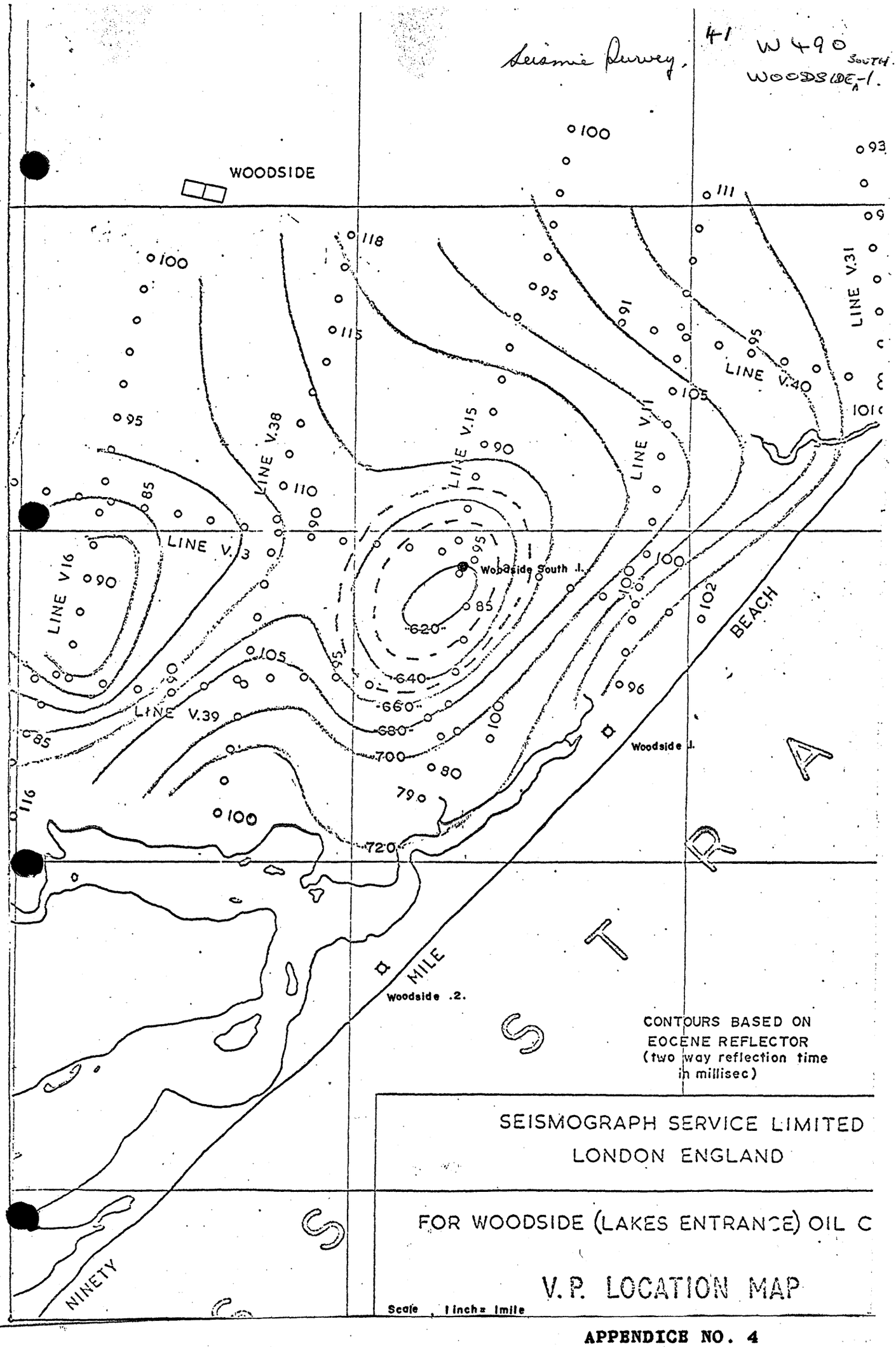
S. J. Watson (1965) has interpreted this survey and his results may be summarised thus :

Reflectors tentatively identified as lying within the Eocene can be mapped. Below this fair reflections representing sediments near the base of the Latrobe Valley Coal Measures show convergence and thinning over structure highs. Faint, unmappable reflections only are discernible in the pre-Tertiary sediments.

Closure based on the Eocene reflectors is indicated near common depth point 85 on traverse V.15. Indications are that this represents a vertical closure of at least 100'. The contours confirm that the residual gravity anomaly investigated has a structural expression in the Tertiary and that the E-W trend of the gravity ridge corresponds to a line of Post-Tertiary movement. Further the dip of the horizon towards the coast confirmed the presence of the Woodside embayment.

Because of the closure in the Eocene reflectors and probable closure in the lower Tertiary sands and gravels a test well was recommended to test the permeable Tertiary beds on structure.

Finally the weak reflectors from below the Tertiary give some indication of a Mesozoic high near the wellsite.



APPENDICE NO. 4

PE902942

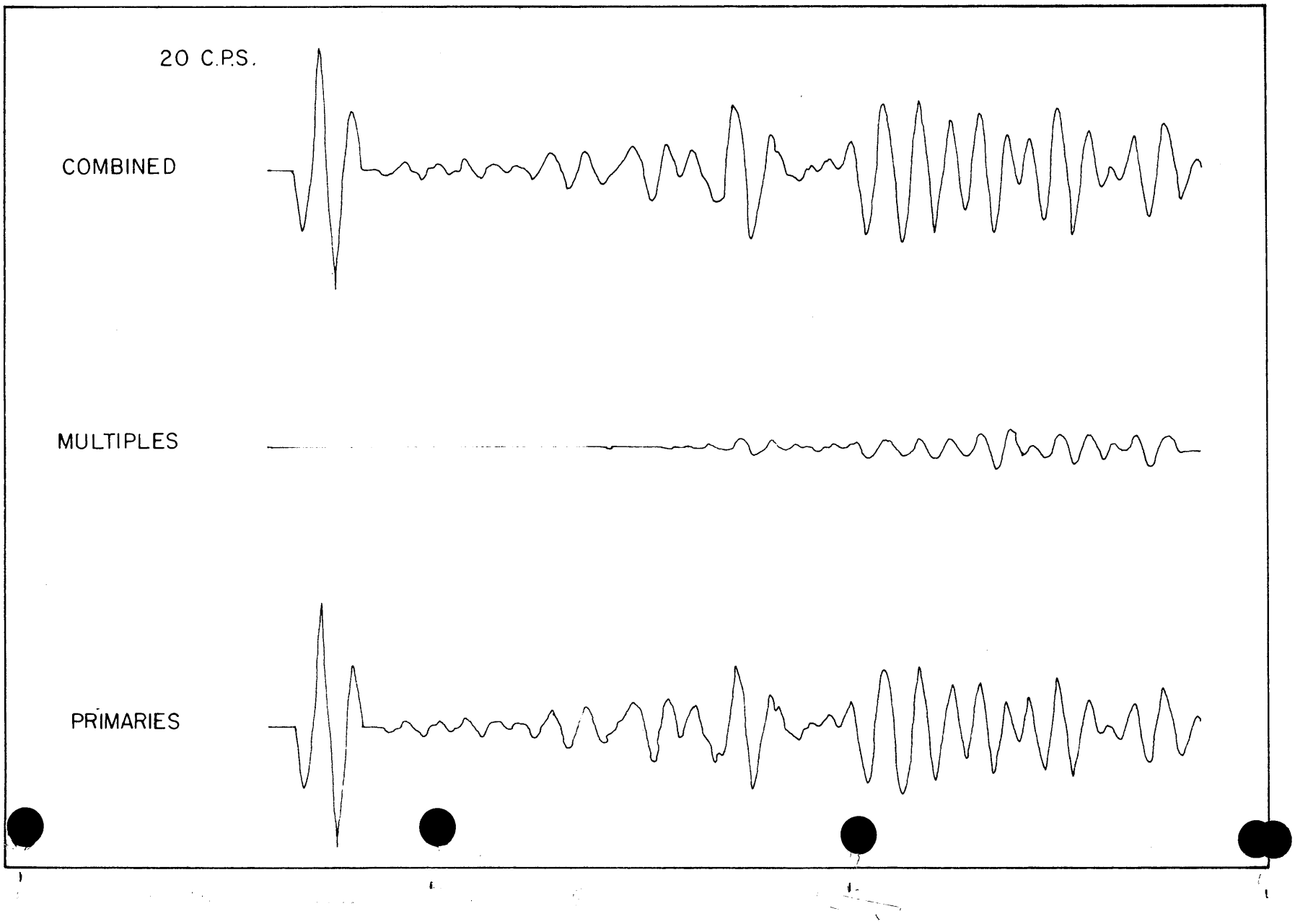
This is an enclosure indicator page.
The enclosure PE902942 is enclosed within the container PE902941 at this location in this document.

The enclosure PE902942 has the following characteristics:

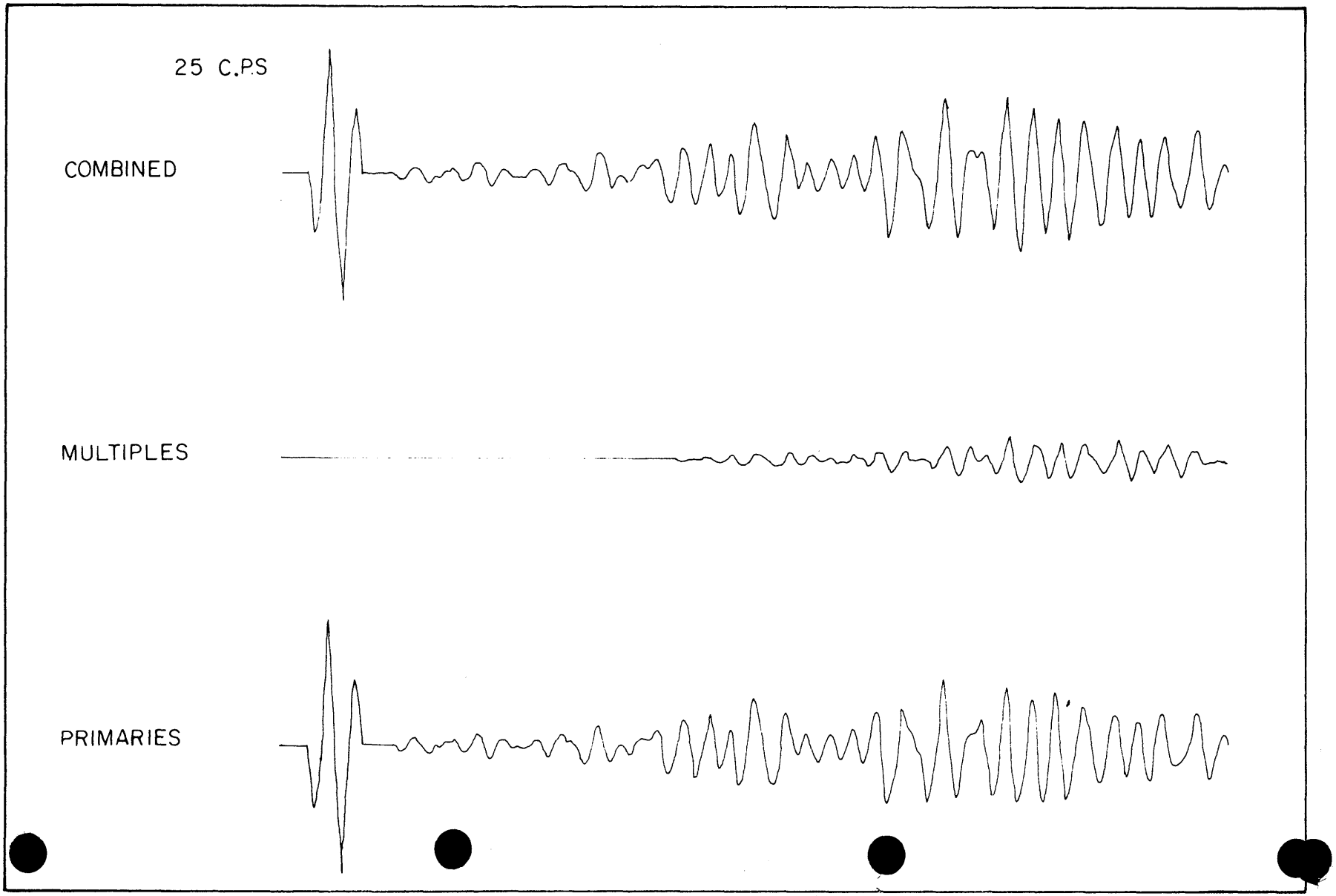
ITEM_BARCODE	= PE902942
CONTAINER_BARCODE	= PE902941
NAME	= Seismic Section
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= SEISMIC
SUBTYPE	= SECTION
DESCRIPTION	= Variable area Cross section Vibroseis for Woodside Oil Co NL, Paynesville Survey, (enclosure from WCR) for Woodside South-1
REMARKS	= This item is a Seismic Section with colour interpretation.
DATE_CREATED	= 23/03/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= Woodside South-1
CONTRACTOR	= Seismograph Service Ltd London, England
CLIENT_OP_CO	= Woodside Lakes Entrance Oil Co NL

(Inserted by DNRE - Vic Govt Mines Dept)

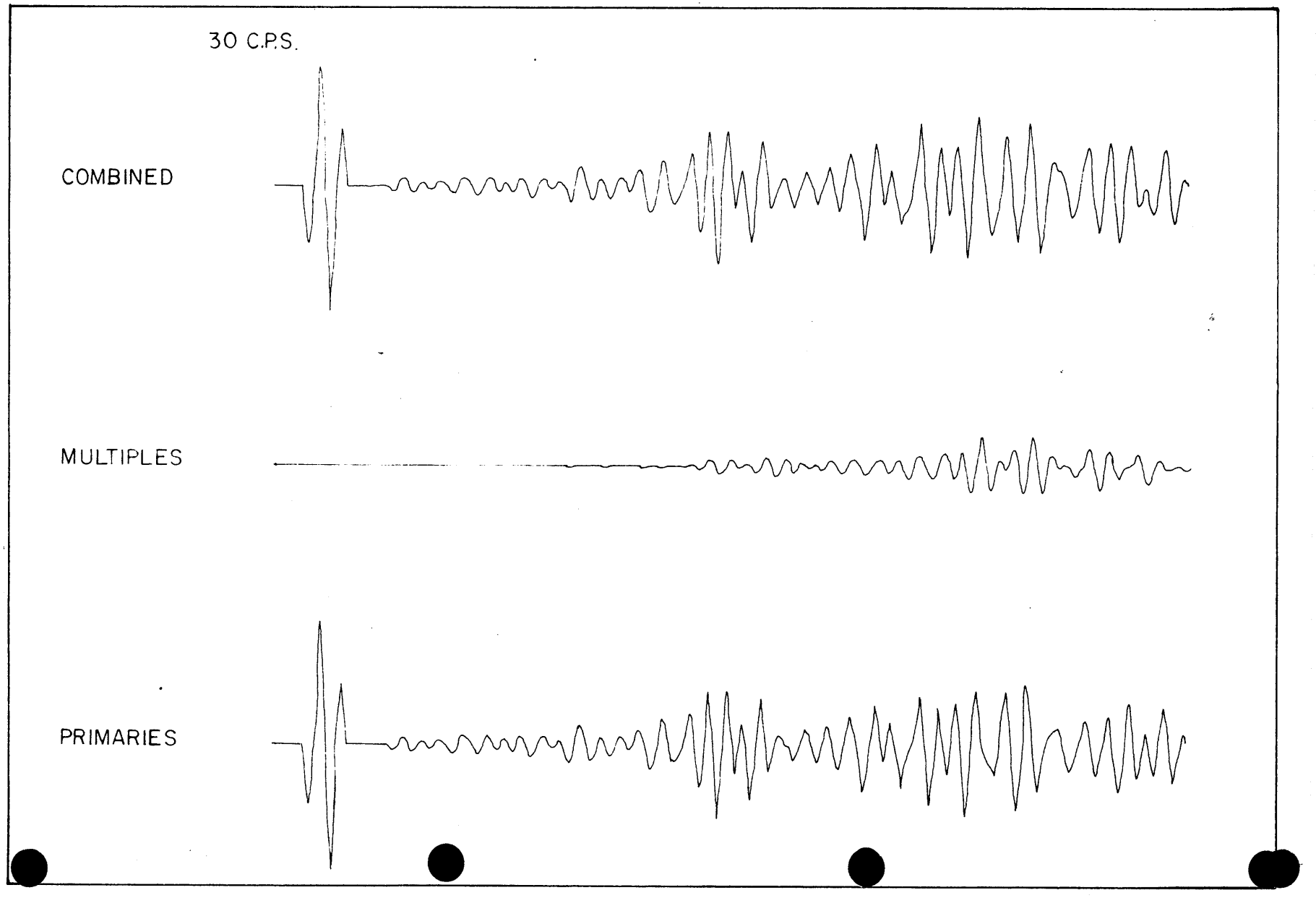
WOODSIDE SOUTH I BURMAH OIL



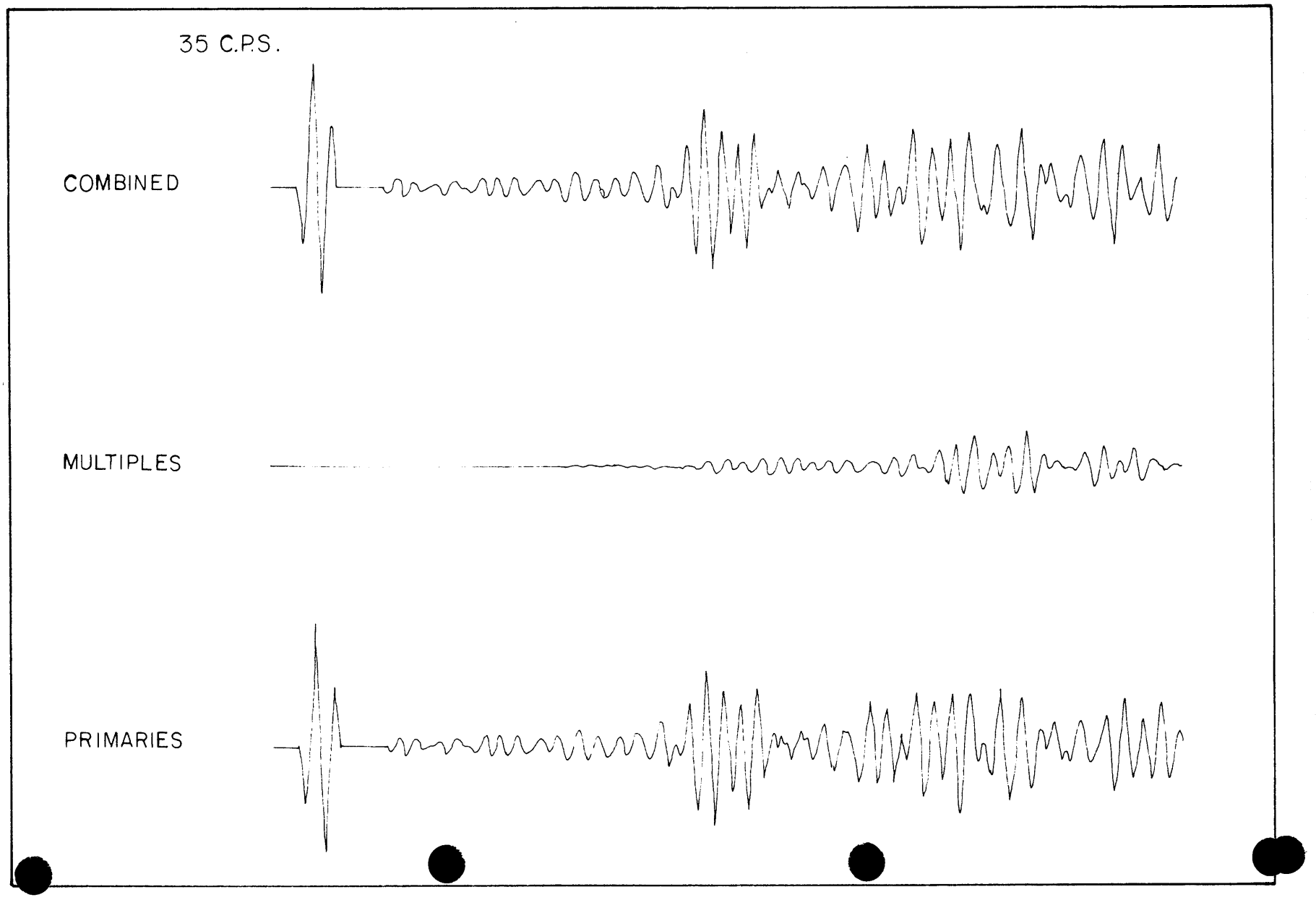
WOODSIDE SOUTH I BURMAH OIL



WOODSIDE SOUTH I BURMAH OIL



WOODSIDE SOUTH 1 BURMAH OIL



PE602042

This is an enclosure indicator page.
The enclosure PE602042 is enclosed within the container PE902941 at this location in this document.

The enclosure PE602042 has the following characteristics:

ITEM_BARCODE	= PE602042
CONTAINER_BARCODE	= PE902941
NAME	= Composite Well Log
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= COMPOSITE_LOG
DESCRIPTION	= Composite Well Log Woodside Lakes Entrance Oil Co, Part 1 of 2, (enclosure from WCR) for Woodside South-1
REMARKS	=
DATE_CREATED	= 15/07/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= Woodside South-1
CONTRACTOR	= Woodside Oil Co
CLIENT_OP_CO	= Woodside Lakes Entrance Oil Co NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE602041

This is an enclosure indicator page.
The enclosure PE602041 is enclosed within the container PE902941 at this location in this document.

The enclosure PE602041 has the following characteristics:

ITEM_BARCODE	= PE602041
CONTAINER_BARCODE	= PE902941
NAME	= Composite Well Log
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= COMPOSITE_LOG
DESCRIPTION	= Composite Well Log Woodside Lakes Entrance Oil Co, Part 2 of 2, (enclosure from WCR) for Woodside South-1
REMARKS	=
DATE_CREATED	= 15/07/65
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= Woodside South-1
CONTRACTOR	= Woodside Oil Co
CLIENT_OP_CO	= Woodside Lakes Entrance Oil Co NL

(Inserted by DNRE - Vic Govt Mines Dept)

PE905537

This is an enclosure indicator page.
The enclosure PE905537 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905537 has the following characteristics:

ITEM_BARCODE	= PE905537
CONTAINER_BARCODE	= PE902941
NAME	= Velocity Chart
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Velocity Chart (from WCR) for Woodside South-1
REMARKS	=
DATE_CREATED	= 31/08/69
DATE_RECEIVED	=
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	= DATA ANALYSIS PTY LTD
CLIENT_OP_CO	= BURMAH OIL

(Inserted by DNRE - Vic Govt Mines Dept)

PE905538

This is an enclosure indicator page.
The enclosure PE905538 is enclosed within the container PE902941 at this location in this document.

The enclosure PE905538 has the following characteristics:

ITEM_BARCODE	= PE905538
CONTAINER_BARCODE	= PE902941
NAME	= Time Depth Curve
BASIN	= GIPPSLAND
PERMIT	= PPL/157
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Time Depth Curve (from WCR) for Woodside South-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	= 31/07/86
W_NO	= W490
WELL_NAME	= WOODSIDE SOUTH-1
CONTRACTOR	= SCHLUMBERGER
CLIENT_OP_CO	= WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

(Inserted by DNRE - Vic Govt Mines Dept)