WCR VOL 1

TORSK-1

ESSO EXPLORATION AND PRODUCTION AUSTRALIA INC.

85. PAGES & 10 ENCLOSURES.

902179 002

WELL COMPLETION REPORT
TORSK-1
VOLUME 1
BASIC DATA

GIPPSLAND BASIN
VICTORIA

ESSO AUSTRALIA LIMITED

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TORSK-1

WELL COMPLETION REPORT

VOLUME 1: BASIC DATA

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ESSO AUSTRALIA LTD

1. WELL DATA RECORD

TORSK-1

LOCATION	:	Latitude : 38° 26' 48.96" South Longitude : 147° 29' 50.01" East X = 543,389mE Y = 5,744,463mN Map Projection: UTM Zone 55 Geographical Location: Bass Strait, Victoria Field: Torsk
PERMIT	:	Vic/P1
ELEVATION	:	21m
WATER DEPTH	:	43m
TOTAL DEPTH	:	2421m (Driller) 2423m (Logger)
PLUG BACK TYPE	:	Cement Plug
REASONS FOR PLUGGING BACK	:	Plug and Abandon
MOVE IN	:	20/10/88
SPUDDED	:	22/10/88
REACHED T.D.	:	10/11/88
RIG RELEASED	:	22/11/88
OPERATOR	:	Esso Exploration and Production Australia Inc.
PERMITTEE OR LICENCEE	:	BHP Petroleum (Australia) Pty. Ltd.
ESSO INTEREST	:	0%
OTHER INTEREST	:	BHP Petroleum (Australia) Pty. Ltd.:100%
CONTRACTOR	:	South Seas Drilling Company
RIG NAME	:	Southern Cross
EQUIPMENT TYPE	:	Semi Submersible
TOTAL RIG DAYS	:	33.13 Days
DRILLING AFE NO.	:	238004
TYPE COMPLETION	:	Plug and Abandon
WELL CLASSIFICATION	:	Before Drilling New Field Wildcat After Drilling New Field Discovery

ESSO AUSTRALIA LTD.
TORSK-1 FINAL WELL REPORT
2.Operations Summary

1. RIG INSPECTION

The rig acceptance inspection for the Southern Cross was conducted at Twofold Bay, Eden, N.S.W., Australia. The inspection began at 0600 hours October 4, 1988 and was completed at 0700 hours October 14. Prior to the acceptance inspection, a structural inspection was also conducted, in conjunction with the Lloyd's Special Periodical Survey of the vessel, during the period August 29 - September 4, 1988. Refer to the Southern Cross Rig Inspection Report for additional information.

After completing the acceptance inspection, the rig went off dayrate while final repairs were made and preparations were made to begin the tow. By 1000 hours October 16, the rig was prepared to tow; however, because of inclement weather, the tow was delayed. By 1525 hours October 17, the weather and forecast had improved; therefore, the tow vessel, Lady Caroline, retrieved anchor No. 5, thus committing to the tow.

2. MOVING/MOORING

Upon bolstering the final anchor at 2130 hours October 17, the tow from Twofold Bay to the Torsk-1 well location began. By about 1200 hours October 18 the tow had progressed approximately 33 nautical miles to an area near Gabo Island. At this time, prior to moving into the open waters of Bass Strait, the captain of the Lady Caroline elected to circle behind Gabo Island while sheltering from weather and waiting on a good forecast. After circling for about 6 hours, the tow continued without incident, with the rig arriving on location at 1230 hours October 20. The rig was towed a distance of 172 nautical miles in 63 hours at an average speed of 2.7 kts. Neglecting the 6 hours spent circling at Gabo Island, the average speed was 3.0 kts.

On approach to the location, two unsuccessful attempts were made to drop No. 1 anchor. Upon pulling No. 1 buoy onto the deck, it was discovered that No. 1 pendant line was wrapped around the flukes of No. 2 anchor. The pendant line was cut, a second approach to the location was made and No. 1 anchor was dropped, without a pendant or buoy, at 1915 hours October 20.

As the Lady Caroline held the rig on location, the workboat Eastern Tide ran anchors No. 8, 5 and 3. The Lady Caroline then released the two bridle and, after a $\pm$ 10.50 hour rest period for both boats, assisted the Eastern Tide in running the remaining anchors. After positioning the rig, all anchors were pretensioned to 200 kips, with the exception of anchor No. 2 which would not test. Upon retrieving the No. 2 mooring line it was discovered that the chain had parted about 20m from the wire-to-chain connector. A parted link was not recovered on either end of the chain.

While working on the No. 2 chain, the rig was ballasted down and the TGB was run and landed at a seafloor depth of 64m RKB.

The final rig position was determined to be 5.15m on a bearing 166.7° from the called location.

3. DRILLING OPERATIONS

a) 26" Hole/20" Casing

After setting the TGB, a 26" bit was made up below a 26" hole opener and a slick BHA was picked up. While picking up the BHA, anchor No. 2 was rerun. The drilling assembly was stabbed into the TGB and the Torsk-1 well was spudded at 2115 hours October 22. After drilling one single to 70.5m, the subsea TV was run to observe the stab into the TGB after making the connection. The TV malfunctioned and, because attempts to stab in

blind were unsuccessful, 2.75 hours of NPT were spent repairing the TV. After repairing the TV and stabbing in, an additional 4 hours of NPT were spent troubleshooting a problem with the SCR system.

As one SCR came back on line, drilling resumed with one mud pump from 70.5m to 92m, using seawater with hi-vis gel slugs on each connection. However, because of the low AV (20 ft/min), it was not possible to clean the hole properly, resulting in excessive reaming time and low ROP (3.4m/hr). From 92m to TD of the 26" hole at 198m another SCR came back on line, allowing both mud pumps to be run. This doubled the AV and resulted in an increase in ROP to 22m/hr. At TD, a 50 bbl hi-vis sweep was pumped and a Totco was dropped. After washing out 12m of fill following a wiper trip, the hole was displaced in two stages with a total of 350 bbls of hi-vis mud prior to pulling out to run casing.

Seven joints of 20", 94 ppf, X-56, JV casing, plus a crossover joint (129 ppf, JV x CC) and the 24" pile joint/18$^{3}/_{4}$" wellhead assembly were then run, with the 20" shoe at 181m. The casing was cemented to the seafloor, using a drill pipe stinger, with a lead slurry of 750sx of Class 'G' cement plus 2.2% prehydrated gel and a tail slurry of 350sx of Class 'G' neat cement.

After waiting on weather for 13.50 hours, the BOP stack was run and landed and the shear rams, collet connector and casing were tested to 500 psi. A total of 2.75 hours of NPT were recorded troubleshooting a problem with a leaking cylinder on the Regan ELR-2 connector, discovered when mating the stack to the LMRP on the surface. However, after functioning the connector several times, no problems could be found and the connector was deemed to be working properly.

b) <u>17$^{1}/_{2}$" Hole/13$^{3}/_{8}$" Casing</u>

A 17$^{1}/_{2}$" bit and pendulum BHA were then picked up and RIH to the TOC at 177m. An attempt was made to pump through the diverter lines; however, when both pumps were put on the hole, two SCR's were knocked off line. A total of 11 hours of NPT were then spent troubleshooting the problem.

As drilling resumed, the shoe was drilled and the rathole was cleaned out to 184m, where the bit was POOH because of partially plugged jets. After cleaning cement out of two jets, the bit was rerun. The rathole was cleaned out and drilling progressed to TD of the 17$^{1}/_{2}$" hole at 787m, at an average ROP of 20.5m/hr, using seawater with slugs of hi-vis gel mud. Lithology throughout this section was primarily limestone and calcareous shale (i.e., Gippsland Limestone); however, a sand section encountered from 600-650m caused some shaker screen blinding and mud losses. In general, the clays from the formation dissolved into the mud system, making dilution necessary to control weight and viscosity.

After reaching TD, a wiper trip was run, 6m of fill was cleaned out, and the hole was logged (BHC/GR/CAL).

A total of 59 joints of 13$^{3}/_{8}$", 54.5 ppf, K-55, BTC casing were then run and landed with the shoe at 772m. The casing was cemented in place with 1200 sx of Class 'G' neat cement. Cement volume was calculated to place the TOC at 272m (i.e., 500m above the shoe) based on an 18" average hole diameter as per the caliper log. The top plug was bumped and the pressure was increased to 1500 psi to test the casing. The 13$^{3}/_{8}$" seal assembly was then set and tested, along with the BOP stack, to 200/2000 psi. A Phase I PIT was run against the shear rams to 1500 psi and the choke manifold was tested to 200/5000 psi.

c) <u>12$^{1}/_{4}$" Hole</u>

A 12$^{1}/_{4}$" bit and pendulum BHA were then picked up and RIH. The float equipment and cement were drilled out to 790m, and a Phase II PIT was conducted to leak-off at 875 psi (15.6 ppg EMW).

After drilling to 1250m (± 100m above the expected Top of Latrobe), a planned trip was made to pick up the MWD tool. While drilling this section, the mud system was gradually conditioned and the mud weight increased to 9.5 ppg. Drilling detergent was also added to the mud system to help control "gumbo" related problems seen on offset wells in the Lakes Entrance formation, which was topped at 1120m. This section was drilled without incident at an average ROP of 15.6m/hr; however, tight spots were encountered at 950-1150m while POOH and RIH after the trip.

As drilling progressed, samples were circulated up for geologic evaluation from drilling breaks at 1350m and 1370m, where 340 units of gas were recorded and the mud weight was gas cut from 9.5 to 9.1 ppg. At this point, the bit was POOH to pick up the core barrel. On the trip out, tight spots were encountered intermittently from 1226m to 935m and the bit was found to be 1/8" undergauge after drilling only 120m at 9.2m/hr.

When RIH with the core barrel (full bore 8" x 5 1/4"), a tight spot was encountered at 1295m, possibly due to the previous undergauge bit. The interval 1290-1303m was reamed, then the assembly was RIH to 1361m, where reaming was required to reach bottom. After cutting Core No. 1 to 1374m, the barrel jammed and was POOH. Average ROP was 8.0m/hr, with a core recovery of 37%. The core barrel was redressed and RIH to 76m; however, orders were changed and the barrel was POOH. Based on mud log and core results the Top of Latrobe (Gurnard formation) was picked at 1328m, with the Top of Coarse Clastics at 1366m or 22m high to prognosis.

The drilling assembly was then picked back up and used to drill through Latrobe/Intra-Latrobe formations to the programmed TD of 2421m. Although samples were circulated up from drilling breaks on several occasions, no shows were found and the well was terminated at the programmed depth, as all geologic objectives had been met.

Three bit runs were required (2 x HP51A, 1 x HP53A) to drill this final 12 1/4" hole section, at an average ROP of 7.5m/hr. Lithology was predominantly massive sand with interbeds of siltstone and minor coal. Also, some volcanics were encountered near TD. Some problems with shaker screen blinding, resulting in surface mud losses, were encountered while drilling sand sections between 1600m and 1700m, while high torque was noted when drilling the coal stringers. Also, because of the permeability of the massive sand, significant downhole seepage losses (25-40 bbl/hr) were recorded, particularly below 1990m.

While drilling this section, the mud weight was gradually reduced to 9.0 ppg since the objective was not completely gas filled or as thick as anticipated. Although no major drilling problems were immediately evident, 900 units of trip gas were recorded from 1350m to 1400m after a bit trip from 2174m. Also, as has been encountered previously, some hole instability problems were experienced when tripping. Drag was frequently encountered when pulling through the Lakes Entrance formation and, because of filter cake build-up, tight hole and bridges were encountered intermittently throughout the Latrobe. Some reaming was also required due to undergauge bits. Most notably, the interval 1727-1770m required reaming after the previous bit pulled (Bit No. 5: HP51A) was found to be 3/8" undergauge.

After reaching TD and conditioning the mud, the drilling assembly was POOH to run logs. However, upon RIH with Log No. 1 (DLL/MSFL/LDL/CNL/BHC/SP/GR/CAL: Maxicombo), a bridge was tagged at 1133m (NOTE: Top of Lakes Entrance at 1120m), necessitating a wiper trip. While RIH, a ledge was hit at 1088m, then singles were reamed to 1398m. After RIH two stands to 1457m, the mud weight was increased to 9.6 ppg due to a large amount of cuttings observed over the shakers. Another wiper trip was made. Bridges were reamed at 1269m, 1377-1385m and 1447m, then 36m of fill was washed to TD. At this point, the mud weight was further increased to 10.2 ppg. While weighting up, downhole mud losses were estimated to average 5 bbl/hr. After another wiper trip, no drag was encountered when POOH and the log was successfully run. In total, 2.50 days of NPT were recorded prior to getting a successful log run. In general, the log showed the

Gippsland Limestone to be in gauge, the Lakes Entrance from 1120m to 1328m was predominantly offscale on the 23" caliper track, and the Latrobe was relatively in gauge, with intermittent out of gauge sections correlating with coal stringers.

Log No. 2 (RFT/GR) was then RIH; however, a bridge was again tagged at 1354m, resulting in an additional 22.50 hours of NPT. A wiper trip was made encountering bridges intermittently from 1359m to 1553m and 7m of fill was washed to TD. The mud was then conditioned, no drag was encountered while POOH and the log was successfully run.

After completing Log No. 2, Log No. 3 (Velocity Survey) was run without incident. Upon RIH with Log No. 4 (SHDT), a problem with the caliper resulted in 3.50 hours of NPT. After attempting to repair the caliper without success, the log was run without the caliper.

A bit was then RIH for a scheduled wiper trip. However, after RIH to the $13^{3}/_{8}$" casing shoe, operations were suspended for 37.50 hours while waiting on weather. Upon resuming operations, drag of up to 25 kips was encountered intermittently while RIH and 3m of fill was washed to TD. On bottoms up, 490 units of gas were recorded and the mud appeared black and thick. The mud was conditioned and the assembly was POOH. Three RFT sample runs were then made, followed by a 60 shot SWC gun.

4. PLUG & ABANDONMENT

After completing final logs, open-ended drill pipe was RIH to 2190m and a 100m balanced cement plug (P&A Plug No. 1) was set to cover a freshwater/saltwater transition zone, using 255sx of Class 'G' cement with 0.6% HR6L retarder mixed in freshwater. The pipe was then pulled up and 100m balanced cement plugs were set at 1700m and 1416m (P&A Plugs No. 2 & 3) to cover hydrocarbon zones, using 300sx and 700sx, respectively, of Class 'G' neat cement mixed in freshwater. The slurry volume for Plug No. 3 was based on an average hole diameter above the Top of Latrobe of 28", as the 23" caliper log was generally offscale in this section. However, the plug was later tagged with 15 kips at 1290m, indicating an average hole diameter of about $21^{1}/_{4}$". A 100m balanced cement plug (P&A Plug No. 4) was then set at 822m, across the $13^{3}/_{8}$" casing shoe, using 300 sx of Class 'G' neat cement mixed in seawater. The plug was pressure tested to 1500 psi and tagged at 723m with 15 kips. The hole was then displaced with seawater and the pipe was POOH.

Schlumberger was rigged up and a $13^{3}/_{8}$" EZSV bridge plug (P&A Plug No. 5) was set at 695m. The $13^{3}/_{8}$" casing was then cut at 150m using a Pengo explosive cutter. Schlumberger was rigged down, the wear bushing was retrieved and a spear was run. Seven joints of casing and a stub were then pulled and laid down.

Open-ended drill pipe was RIH, the EZSV was tagged and a 50m balanced cement plug (P&A Plug No. 6) was set using 125sx of Class 'G' neat cement mixed in seawater. The pipe was pulled up and a 80m balanced cement plug (P&A Plug No. 7) was set across the $13^{3}/_{8}$" casing stub, from 180m to 100m, using 360sx of Class 'G' neat cement mixed in seawater. While laying down drill pipe, Plug No. 7 was pressure tested to 500 psi.

After laying down the diverter, the inner barrel of the slip joint was pinned closed and the BOP stack and riser were pulled. Approximately 2 hours of NPT were spent attempting to pin the slip joint closed prior to laying down the diverter. The diverter, which was installed since the last operation, prevented the bolt holes on the slip joint from aligning properly.

Because of the shallow water depth at the location, it was not possible to explosively cut the wellhead. Therefore, a mechanical cutter was RIH and the 20" casing was cut at 73m RKB or 1m below the pile joint assembly CC connector. An $18^{3}/_{4}$" wellhead running tool was then run and the wellhead, PGB and TGB were retrieved and laid down.

5. PULLING ANCHORS

After deballasting the rig, the workboats Lady Penelope and Eastern Tide pulled the anchors in 15.50 hours. Under tow by the Lady Penelope, the rig departed for the Dolphin Soil Boring location at 2315 hours November 22, 1988.

While deballasting and pulling anchors, a seabed survey was done of the well location using the RCV which had been installed on the rig. One small "I" beam (8" x 6" x 24") was found and was successfully recovered using a magnet attached to the crane, under the guidance of the RCV.

3. Casing Data

Torsk-1

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TORSK-1 FINAL WELL REPORT
CASING DATA

OD (In.)	WEIGHT (LB/FT)	GRADE	CONNECTION	LENGTH (M)	SHOE DEPTH (M-RKB)	CENTRALIZER POSITION	REMARKS
20	94	X-56	JV	14.05	181	NONE	FLOAT SHOE JOINT
20	94	X-56	JV	82.33		NONE	6 INTERMEDIATE JOINTS
20	129	X-52	JV x CC	12.67		NONE	CROSSOVER JOINT
24	670	----	CC	10.28		NONE	PILE JOINT: EP7-1-2-3
				119.33			
13-3/8	54.5	K-55	BTC	12.57	772	1 W/ STOP RING	FLOAT SHOE JOINT
	54.5	K-55	BTC	11.60		1 ACROSS COLLAR	FLOAT JOINT
	54.5	K-55	BTC	12.53		1 W/ STOP RING	FLOAT COLLAR JOINT
	54.5	K-55	BTC	659.48		1 ACROSS FIRST THREE COLLARS	55 INTERMEDIATE JOINTS
	54.5	K-55	BTC	11.80		NONE	CASING HANGER JOINT -CSG HANGER: EHW 39 -SEAL ASSY: ESW 35
				707.98			

4. Cementing Data

Torsk-1

ESSO AUSTRALIA LTD.
TORSK-1 FINAL WELL REPORT
CEMENT DATA

DATE (1988)	TYPE JOB	INTERVAL (M-RKB)	TYPE CEMENT	VOLUME (SX)	SLURRY WEIGHT (PPG)	ADDITIVES	MIX WATER	REMARKS
24-OCT.	20" PRIMARY LEAD	181-64	CLASS "G"	750	13.2	2.2% PHG	FW	CEMENT THROUGH DP STINGER. CMT VOLUME AS PER PROGRAM TO PROVIDE 150% EXCESS ABOVE GAUGE HOLE VOLUME W/ TOC @ SEAFLOOR.
24-OCT.	20" PRIMARY TAIL		CLASS "G"	350	15.8	----	SW	
29-OCT.	13-3/8" PRIMARY	772-272	CLASS "G"	1200	15.8	----	SW	CMT VOLUME BASED ON 18" AVG. HOLE DIAMETER PER THE CALIPER LOG. BUMPED PLUG W/ 1500 PSI.
19-NOV.	P & A PLUG No. 1	2190-2090	CLASS "G"	255	15.8	0.6% HR6L	FW	SET TO COVER FRESHWATER/SALT-WATER TRANSITION ZONE @ +/- 2140m.
19-NOV.	P & A PLUG No. 2	1700-1600	CLASS "G"	300	15.8	----	FW	SET TO COVER HYDROCARBON ZONE @ 1650m.
19-NOV.	P & A PLUG No. 3	1416-1290	CLASS "G"	700	15.8	----	FW	SET TO COVER HYDROCARBON ZONE @ 1366m. TAGGED WITH 15 KIPS. SLURRY VOLUME BASED ON 28" AVG. HOLE DIA. ABOVE T.O.L., ACTUAL = 21-1/4" BASED ON DEPTH TAGGED.
19-NOV.	P & A PLUG No. 4	822-723	CLASS "G"	300	15.8	----	SW	SET ACROSS 13-3/8" CASING SHOE @ 722m. TESTED TO 1500 PSI, TAGGED WITH 15 KIPS.

4. Cementing Data

Torsk-1

ESSO AUSTRALIA LTD.
TORSK-1 FINAL WELL REPORT
CEMENT DATA

DATE (1988)	TYPE JOB	INTERVAL (M-RKB)	TYPE CEMENT	VOLUME (SX)	SLURRY WEIGHT (PPG)	ADDITIVES	MIX WATER	REMARKS
20-NOV.	P & A PLUG No. 6	695-645	CLASS "G"	125	15.8	----	SW	SET ABOVE EZSV BRIDGE PLUG (P & A PLUG No. 5) @ 695m.
20-NOV.	P & A PLUG No. 7	180-100	CLASS "G"	360	15.8	----	SW	SET ACROSS 13-3/8" CASING STUB @ 150m. TESTED TO 500 PSI.

5. SAMPLES, CONVENTIONAL CORES, SIDEWALL CORES

TORSK-1

INTERVAL (m)	TYPE
787 - 2421	Cutting samples - 3 sets of washed and oven dried and 1 set of bagged air dried cuttings. Sampled from 787m at 30m intervals. Sampled from 1270m at 5m intervals.
787 - 2421	Unwashed composite tinned samples for geochemistry collected at 30m/15m intervals.
1334 - 2401	CST, Shot 60, Recovered 45.
1370.5 - 1374.5m	Core No.1 cut 4m recovered 1.48m (37%)

6. WIRELINE LOGS AND SURVEYS

TORSK-1

TYPE AND SCALE		FROM	TO
	SUITE 1		
BHC-CAL-GR	1:200 1:500	781.5	64.0
	SUITE 2		
LDL-CNL-GR-AMS	1:200 1:500	2423.0 -	1250.0
DLL-MSFL-GR-SP	1:200 1:500	2423.0 -	730.0
BHC-GR-CAL	1:200 1:500	2423.0 -	730.0
HP GAUGE PRETESTS RUN 1	39 Points	1369.2 -	2160
WST (CHECKSHOT)		2422.0 -	772.0
SHDT-GR	1:200	2415.0 -	772.0
HP GAUGE SAMPLE (1 OF 3) RUN 2			1372.4
HP GAUGE SAMPLE (2 OF 3) RUN 3			1654.4
HP GAUGE SAMPLE (3 OF 3) RUN 4			1370.6
CST-GR (2 GUNS)		2401.0 -	1333.7

7. SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - TORSK-1

TEST & SEAT NO.	DEPTH (METRES) K.B.	CHAMBER	OIL	RECOVERY (LITRES) COND.	GAS	FORMATION WATER	MUD FILTRATE	HEWLETT-PACKARD FORMATION PRESSURE MPaa	Psia	HEWLETT-PACKARD HYDROSTATIC PRESSURE MPaa	Psia	REMARKS
		Litres	Litres	Litres	m^3	Litres	Litres					
1/1	2160.0	Pretest						21.05	3052.5	26.59	3855.88	Good
1/2	2155.0	Pretest						20.99	3044.61	26.51	3845.28	Good
1/3	2142.0	Pretest						20.87	3026.93	26.36	3823.21	Good
1/4	2125.5	Pretest						20.71	3004.24	26.15	3793.22	Good
1/5	2120.0	Pretest						20.66	2995.97	26.08	3783.00	Good
1/6	2001.2	Pretest						19.51	2829.73	24.64	3573.3	Good
1/7	1995.0	Pretest						19.45	2821.05	24.56	3562.42	Good
1/8	1977.0	Pretest						19.28	2796.1	24.34	3530.7	Good
1/9	1975.5	Pretest						19.26	2793.85	24.33	3528.1	Good
1/10	1974.0	Pretest						19.26	2793.85	24.31	3525.4	Super Charged
1/11	1965.0	Pretest						19.16	2778.82	24.19	3508.5	Good
1/12	1680.0	Pretest						16.38	2376.16	20.73	3007.33	Good
1/13	1665.0	Pretest										Tool not set
1/14	1665.0	Pretest										Seal failure
1/15	1664.0	Pretest						16.23	2353.95	20.54	2979.58	Good
1/16	1662.0	Pretest						16.21	2351.24	20.52	2975.7	Good
1/17	1655.5	Pretest						16.15	2342.24	20.43	2963.52	Good
1/18	1654.0	Pretest										Tool failure
1/19	1654.0	Pretest						16.14	2340.89	20.41	2960.89	Good
1/20	1653.0	Pretest						16.13	2339.74	20.40	2959.13	Good
1/21	1640.0	Pretest						15.99	2319.51	20.24	2936.03	Good
1/22	1630.5	Pretest						15.9	2306.28	20.13	2919.4	Good
1/23	1384.0	Pretest										Seal failure
1/24	1384.0	Pretest										Seal failure
1/25	1383.0	Pretest						13.48	1954.47	17.07	2475.46	Good
1/26	1377.0	Pretest						13.42	1946.05	16.99	2464.33	Good
1/27	1375.0	Pretest						13.40	1943.28	16.96	2459.78	Good
1/28	1373.5	Pretest						13.38	1941.08	16.93	2455.82	Good

7. SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - TORSK-1

TEST & SEAT NO.	DEPTH (METRES) K.B.	CHAMBER	RECOVERY (LITRES) OIL	COND.	GAS	FORMATION WATER	MUD FILTRATE	HEWLETT-PACKARD FORMATION PRESSURE MPaa	Psia	HEWLETT-PACKARD HYDROSTATIC PRESSURE MPaa	Psia	REMARKS
		Litres	Litres	Litres	m^3	Litres	Litres					
1/29	1371.0	Pretest										Seal failure
1/30	1371.0	Pretest								16.87	2447.25	Did not allow to build up
1/31	1371.2	Pretest										Seal failure
1/32	1371.1	Pretest								16.87	2447.25	Tight
1/33	1370.0	Pretest						13.41	1944.32			Super charged
1/34	1370.2	Pretest						13.48	1955.17	16.84	2442.42	Super charged
1/35	1370.4	Pretest						13.37	1939.08	16.84	2441.8	Super charged
1/36	1369.2	Pretest								16.81	2438.53	Tight
1/37	1369.3	Pretest								16.81	2437.82	Tight
1/38	1369.5	Pretest						13.36	1937.61	16.80	2436.48	Good
1/39	1370.6	Pretest						13.37	1938.62	16.81	2437.5	Good
2/40	1373.0	1. 22.8 2. 10.4	-	-	-	-	-	-	-	*17.29	2507.9	Tight
2/41	1373.0	1. 22.8 2. 10.4	-	-	-	-	-	-	-	17.29	2507.1	Tight
2/42	1373.5	1. 22.8 2. 10.4	-	-	-	-	-	13.44	1948.7	17.30	2509.0	Super charged
2/43	1373.6	1. 22.8 2. 10.4	-	-	-	-	-	14.53	2107.0	17.30	2509.8	Super charged
2/44	1373.7	1. 22.8 2. 10.4	-	-	-	-	-	15.29	2217.0	17.31	2510.0	Seal failure
2/45	1373.7	1. 22.8 2. 10.4	-	-	-	-	-	-	-	17.31	2510.3	Seal failure
2/46	1373.5	1. 22.8 2. 10.4	-	-	-	-	-	-	-	-		Seal failure
2/47	1373.5	1. 22.8 2. 10.4								17.30	2509.7	Super charged

7. SUMMARY OF WIRELINE FORMATION TEST PROGRAMME - TORSK-1

TEST & SEAT NO.	DEPTH (METRES) K.B.	CHAMBER	RECOVERY (LITRES) OIL	COND.	GAS	FORMATION WATER	MUD FILTRATE	HEWLETT-PACKARD FORMATION PRESSURE MPaa	Psia	HEWLETT-PACKARD HYDROSTATIC PRESSURE MPaa	Psia	REMARKS
		Litres	Litres	Litres	m^3	Litres	Litres					
2/48	1373.4	1. 22.8								17.30	2509.1	Super charged
		2. 10.4										
2/49	1372.3	1. 22.8								17.28	2506.7	Seal failure
		2. 10.4										
2/50	1372.4	1. 22.8	0	0	6.8	0	21.25	13.30	1928.6	17.28	2506.3	Good Tool retracted after 1st chamber sealed
2/51	1372.4	2. 10.4	0	0	3.7	0	9.75	13.34	1934.6	17.28	2506.0	Good
3/52	1654.4	1. 22.8	19.25	0	5.0	0	3.25	16.1	2335.0	20.99	3045	Good
		2. 10.4	Sample preserved for PVT analysis									
4/53	1370.4	1. 45.5										
		2. 10.4								17.24	2501	Seal failure
4/54	1370.6	1. 45.4	13.0	0	219.5	0	22.8	13.34	1935.0	17.28	2506	Good
		2. 10.4	Sample preserved for PVT analysis									

* RFT (strain gauge) pressure readings for sample points 40 -> 54.

8. TEMPERATURE RECORD - TORSK-1

LOGGING RUN	THERMOMETER DEPTH (m)	MAX. RECORDED TEMPERATURE (C°)	CIRCULATION TIME (t_k) (hours)	TIME AFTER CIRCULATION STOPPED (t)	HORNER TEMPERATURE (C°)	GEOTHERMAL GRADIENT (C°/km)
Suite 1						
BHC-CAL-GR	764.7	38.0	6.00	6.50		
Suite 2						
DLL-MSFL-LDL-CNL-BHC-GR-SP	2388.5	72.8	3.25	8.47		
RFT-GR (PRE-TEST)	2160.0	72.5	2.50	7.83)		
WSS	2422.0	83.3	2.50	23.75)	91.4	34.51
SHDT-GR	2415.0	84.8	2.50	25.67)		
CST's	2401.0	74.2	10.00	14.67		

902179 019

TABLE 2 : SUMMARY OF BASIC PALYNOLOGICAL DATA

TORSK-1

DIVERSITY - low medium high
S & P less than 10 10-30 greater than 30
D 1-3 3-10 10

SAMPLE NO.	DEPTH (m)	YIELD		DIVERSITY		PRESERVATION	LITHOLOGY	PYRIZATION	COMMENTS
		SPORE-POLLEN	DINOS	SPORE-POLLEN	DINOS				
SWC 60	1333.7	Medium	High	Medium	Medium	Good-Perfect	Clyst.	-	
SWC 57	1362.0	Medium	High	Medium	High	Moderate	Clyst.	Minor	
Core 1	1370.50-.57	High	Medium	High	Low	Good	Slst.	Minor	
Core 1	1370.59-.67	High	High	Low	Low	Good	Slst.	Minor	
Core 1	1372.02	Medium	High	Medium	Low	Good	Slst.	Minor	Pollen swollen
SWC 54	1372.4	Low	Low	Medium	Low	Good	Sst.		
SWC 53	1374.0	Low	Low	High	Low	Good	Sst.		Dinos caved
SWC 50	1375.5	High	Medium	High	Low	Moderate	Slst/sst.	Minor	
SWc 48	1404.0	Medium	-	High	-	Moderate	Slst.		Contaminated sample
SWC 47	1447.5	Low	-	Medium	-	Moderate	Slst.		
SWC 45	1514.0	Low	-	Medium	-	Moderate	Slst.		
SWC 42	1546.0	High	-	High	-	Moderate	Slst.		
SWC 41	1555.0	Low	-	Medium	-	Poor	Slst.		
SWC 39	1600.5	Medium	-	High	-	Good	Slst		
SWC 33	1743.5	Low	Low	High	Low	Good	Slst		

902179 020

TABLE 2: SUMMARY OF BASIC PALYNOLOGICAL DATA

TORSK-1

DIVERSITY -	low	medium	high
S & P	less than 10	10-30	greater than 30
D	1-3	3-10	10

SAMPLE NO.	DEPTH (m)	YIELD SPORE-POLLEN	YIELD DINOS	DIVERSITY SPORE-POLLEN	DIVERSITY DINOS	PRESERVATION	LITHOLOGY	PYRIZATION	COMMENTS
SWC 32	1778.5	Medium	-	High	-	Good	Slst.		
SWC 30	1818.5	Medium	-	Medium	-	Moderate	Sst.		
SWC 29	1848.0	Low	Low	Medium	Low	Moderate	Sst.	Minor	Dinos caved
SWC 28	1870.5	High	-	High	-	Good	Slst.		
SWC 27	1914.0	Medium	-	High	-	Good	Sst.		
SWC 26	1929.0	Low	Low	Medium	Low	Poor	Slst.		Dinos caved
SWC 25	1958.0	High	-	High	-	Moderate	Slst.		
SWC 23	1958.0	Medium	-	Medium	-	Moderate	Sst.		
SWC 22	2006.5	Low	-	Low	-	Good	Sst.		Caved spp. only
SWC	2044.0	Medium	-	High	-	Moderate	Sst.		
SWC 19	2081.0	Medium	-	Medium	-	Moderate	Sst		
SWC 16	2151.0	Low	-	Medium	-	Poor	Sst.		
SWC 15	2187.5	High	-	High	-	Good	Slst/coal		
SWC 12	2231.5	Low	-	High	-	Moderate	Slst.		
SWC 11	2255.5	Medium	-	High	-	Poor	Slst.		

902179 021

TABLE 2: SUMMARY OF BASIC PALYNOLOGICAL DATA

TORSK-1

DIVERSITY -	low	medium	high
S & P	less than 10	10-30	greater than 30
D	1-3	3-10	10

SAMPLE NO.	DEPTH (m)	YIELD		DIVERSITY		PRESERVATION	LITHOLOGY	PYRIZATION	COMMENTS
		SPORE-POLLEN	DINOS	SPORE-POLLEN	DINOS				
SWC 10	2275.3	High	-	High	-	Good	Slst.		
SWC 9	2288.5	High	-	High	-	Poor	Slst.		
SWC 8	2309.5	High	Low	High	Low	Good	Clyst.		Dinos lacustrine
SWC 7	2332.5	Medium	-	High	-	Poor	Slst., carb.		
SWC 6	2346.5	Medium	-	High	-	Moderate	Clyst.		
SWC 4	2376.0	Low	-	Low	-	Moderate	Volcanic		Caved spp. only
SWC 3	2381.5	Barren sample					Slst (volcanic?)		
SWC 1	2401.0	Low	-	High	-	Poor	Slst.		

FIGURES

TORSK-1
LOCALITY MAP

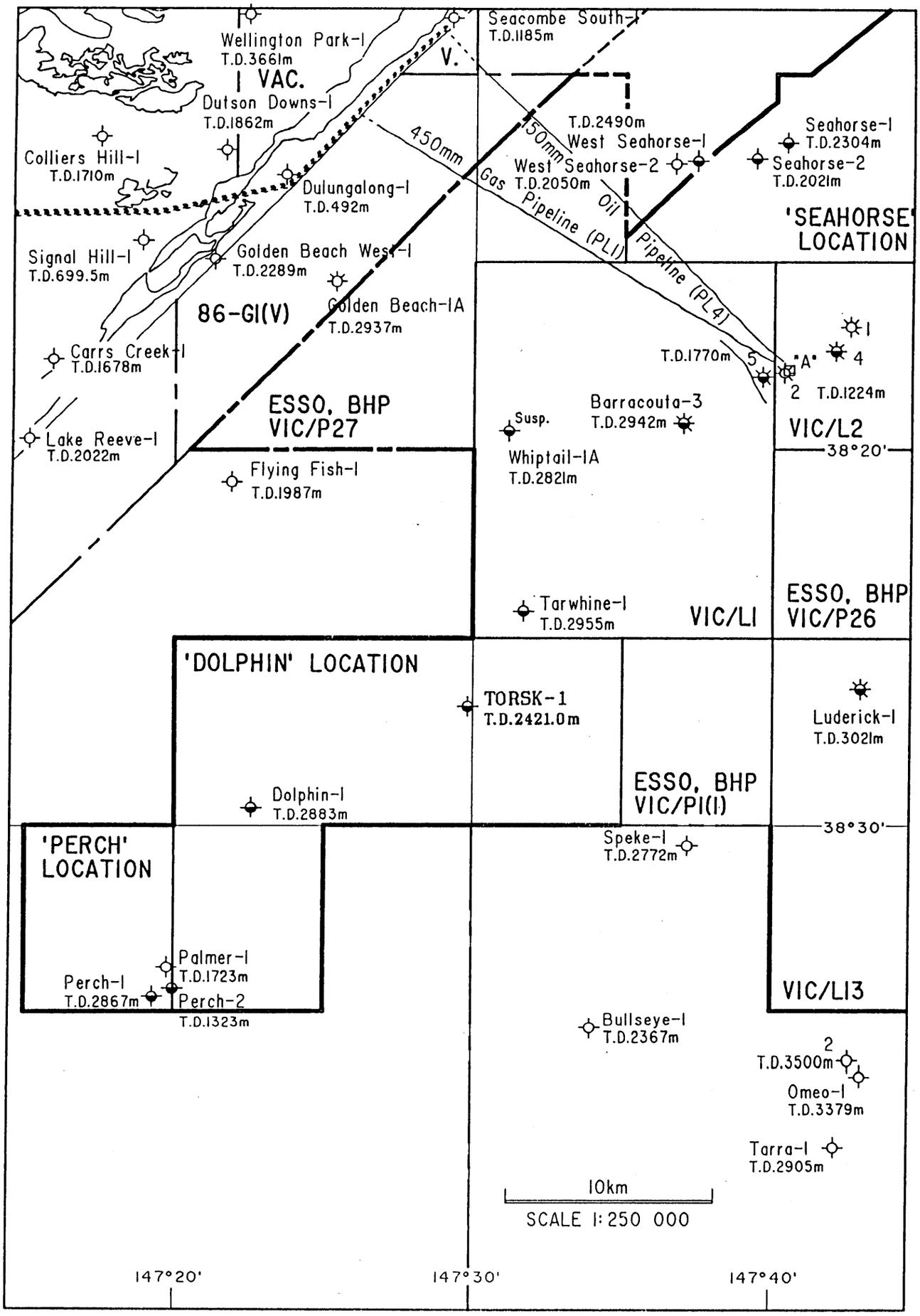

Figure 1.

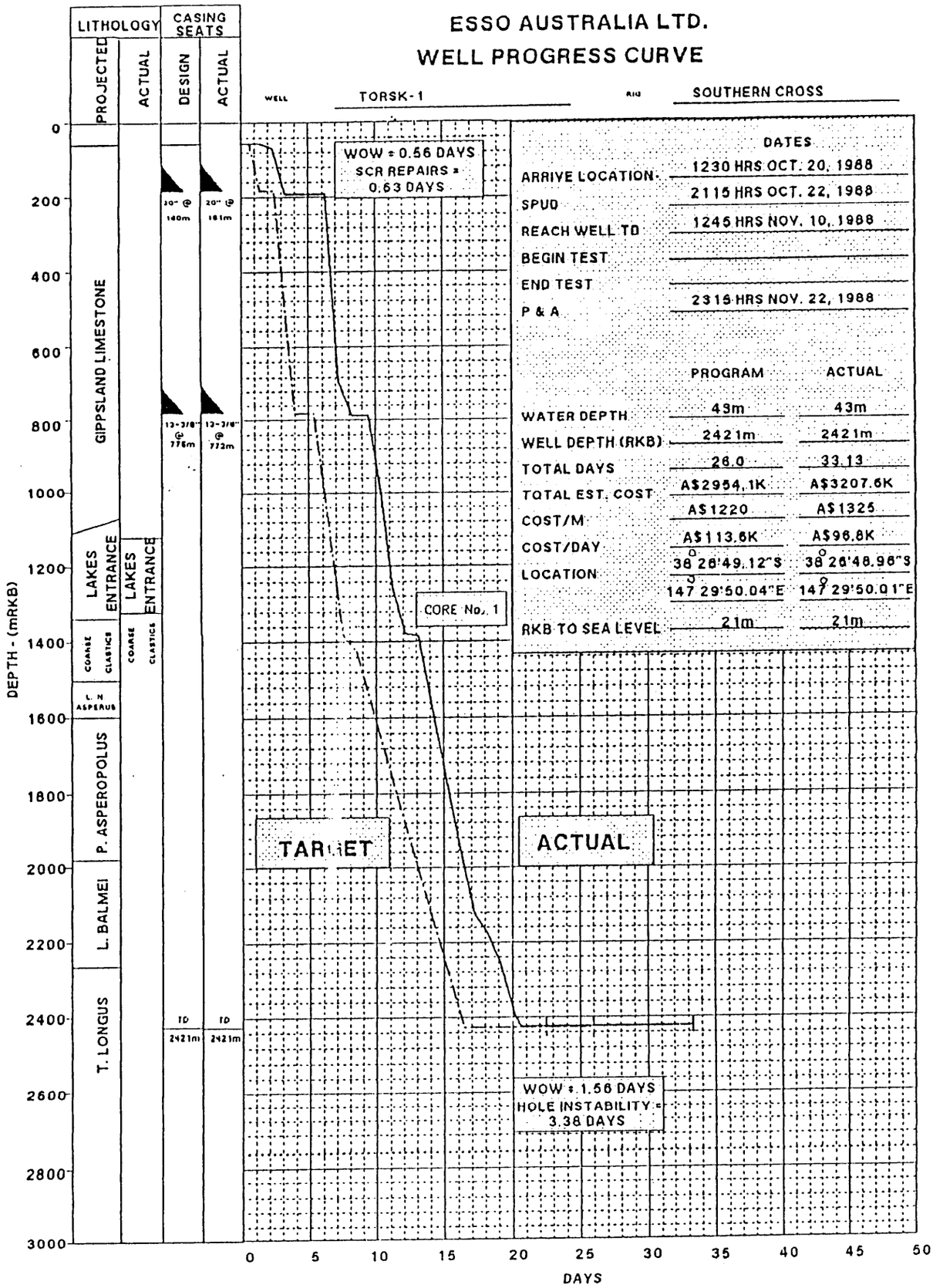
ESSO AUSTRALIA LTD.
WELL PROGRESS CURVE
WELL TORSK-1
RIG SOUTHERN CROSS
LITHOLOGY
CASING SEATS
PROJECTED
ACTUAL
DESIGN
ACTUAL
GIPPSLAND LIMESTONE
LAKES ENTRANCE
COARSE CLASTICS
L. N ASPERUS
P. ASPEROPOLUS
L. BALMEI
T. LONGUS
30" @ 140m
20" @ 161m
13-3/8" @ 776m
13-3/8" @ 772m
TD 2421m
TD 2421m
DEPTH - (mRKB)
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
0
5
10
15
20
25
30
35
40
45
50
DAYS
WOW = 0.56 DAYS
SCR REPAIRS = 0.63 DAYS
CORE No. 1
TARGET
ACTUAL
WOW = 1.56 DAYS
HOLE INSTABILITY = 3.38 DAYS
DATES
ARRIVE LOCATION 1230 HRS OCT. 20, 1988
SPUD 2115 HRS OCT. 22, 1988
REACH WELL TD 1245 HRS NOV. 10, 1988
BEGIN TEST
END TEST
P & A 2315 HRS NOV. 22, 1988
PROGRAM
ACTUAL
WATER DEPTH 43m 43m
WELL DEPTH (RKB) 2421m 2421m
TOTAL DAYS 26.0 33.13
TOTAL EST. COST A$2954.1K A$3207.6K
COST/M A$1220 A$1325
COST/DAY A$113.6K A$96.8K
LOCATION 38° 26'49.12"S 38° 26'48.96"S
147° 29'50.04"E 147° 29'50.01"E
RKB TO SEA LEVEL 21m 21m

Fig 2

ESSO AUSTRALIA LTD.
TORSK-1 FINAL WELL REPORT
WELLBORE SCHEMATIC

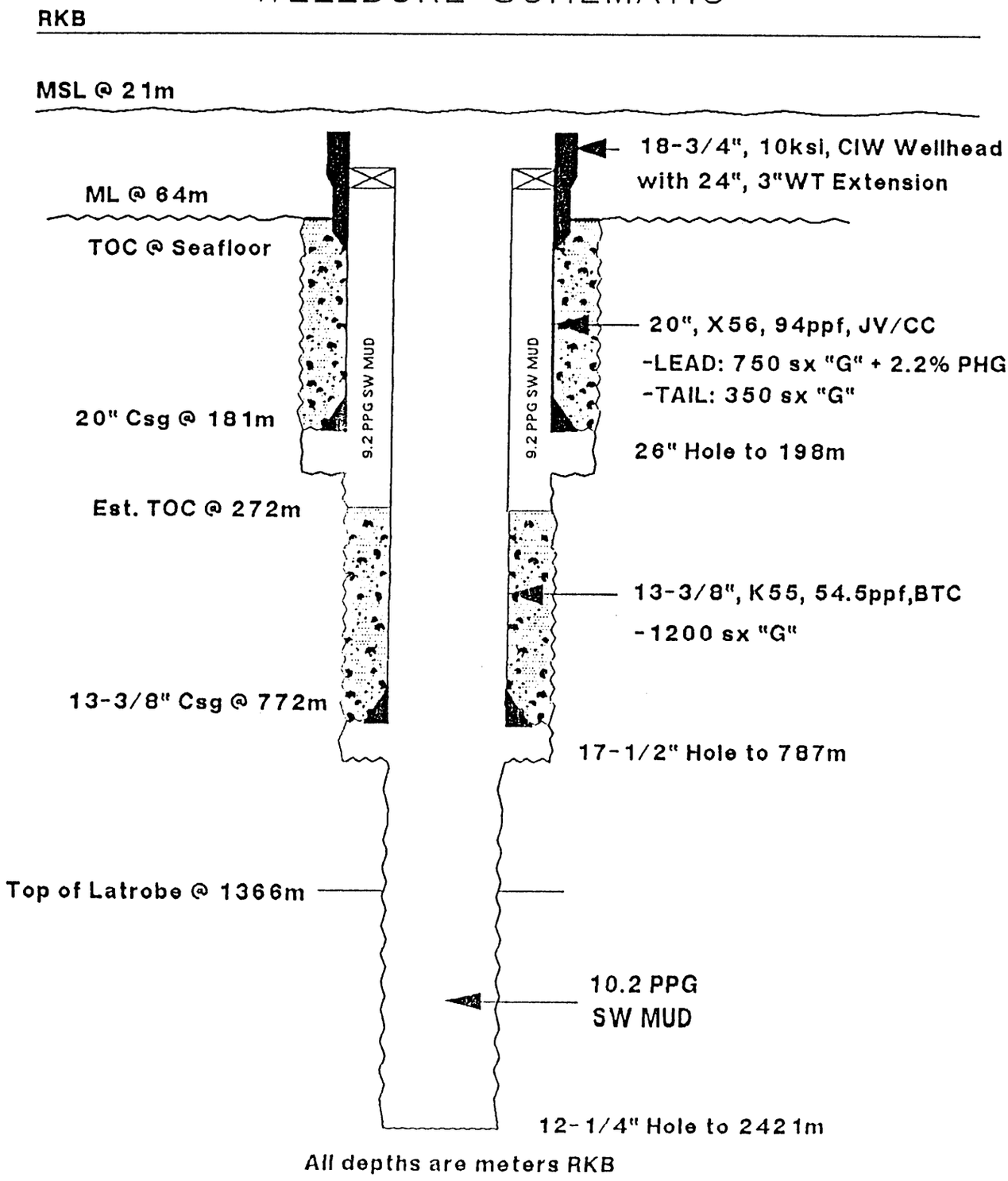

Fig 3

ESSO AUSTRALIA LTD.
TORSK-1 FINAL WELL REPORT
WELLBORE ABANDONMENT SCHEMATIC

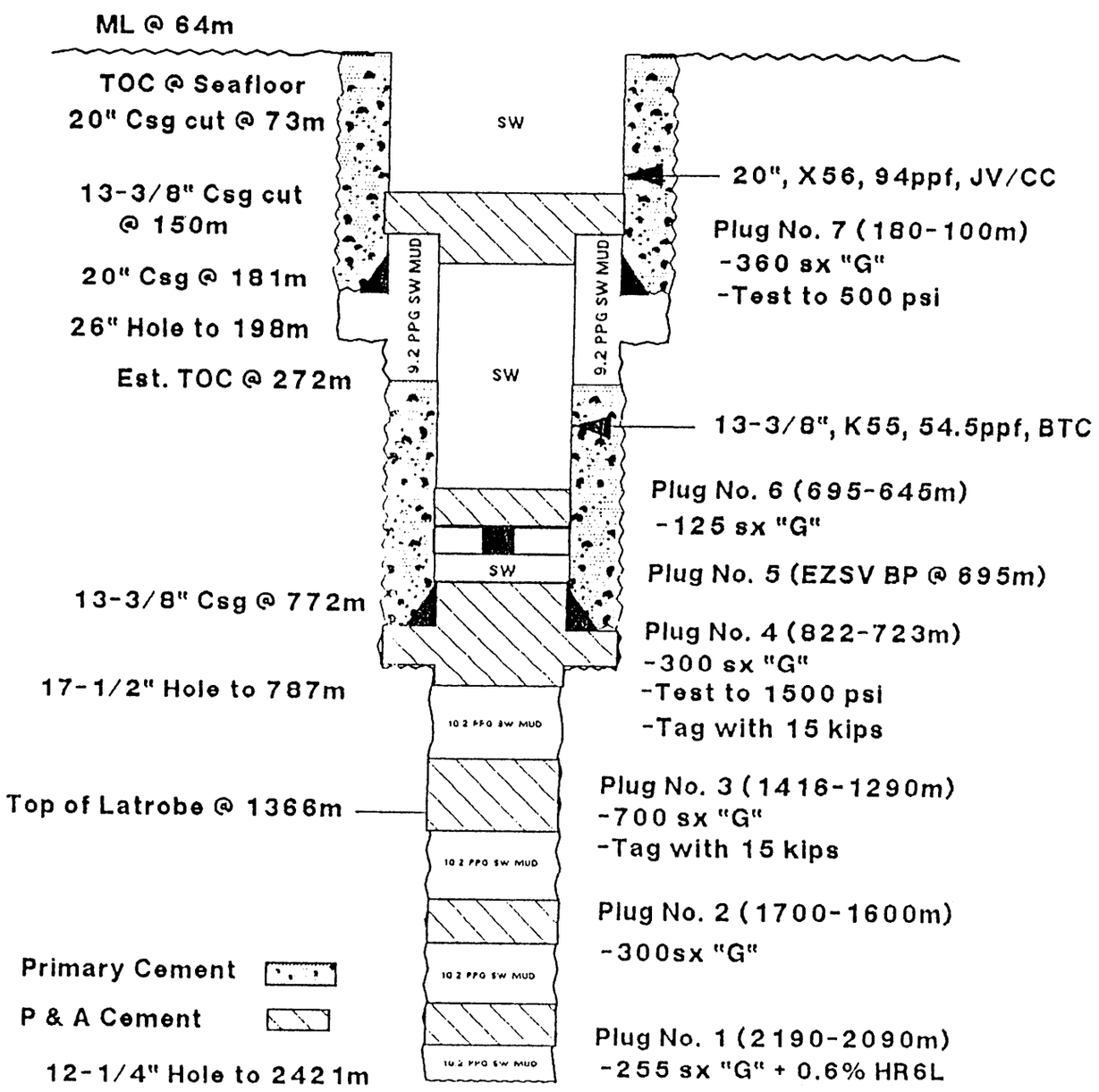

Fig 4

TORSK-1

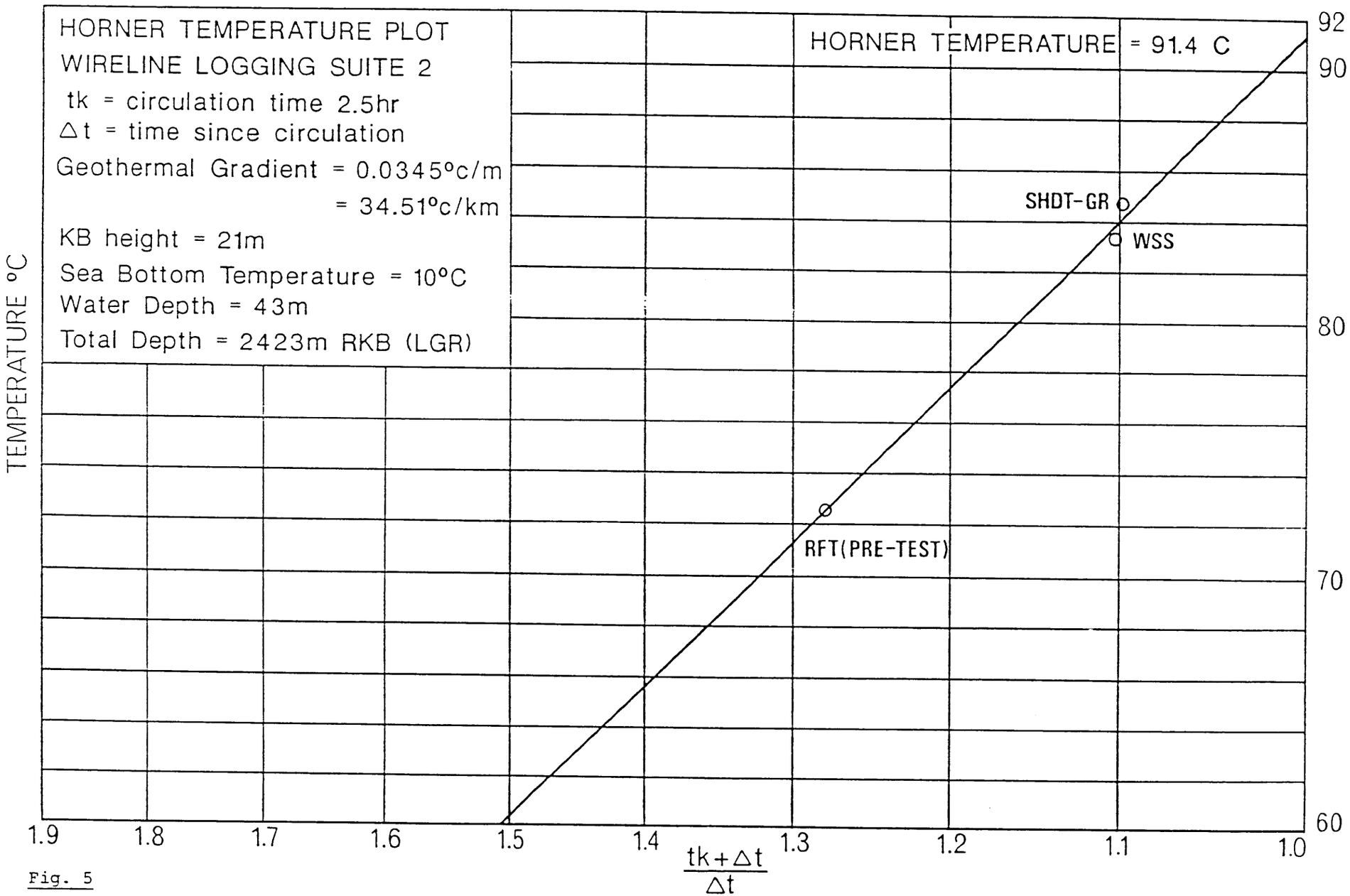

Fig. 5

Dwg. 2418/OP/1

APPENDIX 1

Torsk-1

Lithology Descriptions

902179 029

Depth	%	Description
		$13^3/8$" shoe at 771.5mkb. $17^1/2$" hole to 787m.
787 - 820m	90	LIMESTONE: light to occasionally medium dark grey. Predominantly calcarenite with white, frosted, very fine to medium carbonate grains set in micritic matrix. Grain supported. Common macrofossils, including bryozoan fragments, coral and shell fragments. Very slightly argillaceous in parts. Soft rounded cuttings. 90%, moderately bright yellow to white mineral fluorescence. No shows. (Packstone: Dunham).
	10	SILTSTONE: Medium to dark grey, sandy, very calcareous, soft rounded cuttings. Argillaceous.
	Tr	SANDSTONE: Rare loose, medium to coarse, moderately well rounded quartz grains.
	Tr	CEMENT: Phenolpthalein positive.
820 - 850	90	LIMESTONE: Fossil rich packstone as above.
	10	SILTSTONE: As above.
		- Note: abundant light grey clay rich "gumbo" across shakers - probably more argillaceous siltstone/claystone downhole than in washed sample description:-
850 - 880	90	LIMESTONE: Generally as above becoming dominantly medium to occasionally dark grey, becoming moderately argillaceous, common macro fossil fragments. 40-60% mineral fluorescence.
	10	SILTSTONE: As above
880 - 910	100	LIMESTONE: Very light grey to off white, calcarenite, grains are dominantly fine to medium, grain supported, in a white argillaceous matrix, common macro fossil fragments, including gastropods and cephalopods. trace medium to coarse, angular bit fractured quartz grains = packstone. Limestone generally very clean.
910 - 940	80	LIMESTONE: Dominantly medium to dark grey. Occasionally light grey in parts, dominantly calcarenite grading to calcilutite in part. dominantly grain supported with a very micritic matrix, common fossil fragments, dominantly bryozoan fragments. 40% mineral fluorescence, dark yellow green. (DUNHAM = PACKSTONE, FOLK = SPARCE BIOMICRITE).

Lithology Descriptions

Depth	%	Description
910 - 940 (contd)	20	SILTSTONE: Medium to dark grey, slightly arenaceous with abundant calcareous grains and fragments, argillaceous, soft to firm, blocky, slightly swelling.
940 - 970	90	LIMESTONE: Very light grey to off white, calcarenite, grain supported, fine to medium calcareous grains, subangular, moderately sorted, minor white to light grey micritic matrix, common fossil fragments, dominantly bryozoans and corals.
	10	SILTSTONE: As above.
970 - 1000	100	LIMESTONE: As above.
1000 - 1030	70	LIMESTONE: Light to occasionally medium and dark grey, predominantly calcarenite, grading to calcisiltite as per siltstone description. Fine to medium grained detrital carbonate grains set in micritic matrix. Partly recrystallized in parts. Minor pyrite and rare glauconite. Soft to moderately hard, brittle cuttings. No show.
	30	SILTSTONE: Light to medium grey, arenaceous in part grading to calcarenite, slightly to moderately calcareous, argillaceous with abundant grey clay gumbo across shakers suggesting higher downhole percentage claystone than described in washed sample.
	Tr	SANDSTONE: Rare loose, medium, well rounded quartz grains.
1030 - 1060	55	LIMESTONE: As above.
	45	SILTSTONE: As above.
1060 - 1090	60	SILTSTONE: As above.
	40	LIMESTONE: As above.
1090 - 1120	50	LIMESTONE: As above with less macro fossils, slightly more recrystallization.
	50	SILTSTONE: Calcisiltite as above.
1120 - 1150	80	SILTSTONE: Medium grey, soft to firm cuttings, moderately to very calcareous, argillaceous, minor opaque flecks (carbonaceous flecks?), slightly arenaceous in part grading to calcarenite.
	20	LIMESTONE: Light to medium grey, firm to moderately hard cuttings, grain supported, fine to medium grained detrital calcarenite with micritic matrix. Partly recrystallized in parts.

Torsk-1

Lithology Descriptions

Depth	%	Description
1150 - 1180	80	SILTSTONE: Calcareous, very argillaceous, light to medium and dark grey. Soft to firm, minor carbonaceous flecky laminae, arenaceous in part, grading to calcarenite. Blocky to occasionally sub-fissile cuttings.
	20	LIMESTONE: As above. Minor forams.
	Tr	SANDSTONE: Loose, medium to coarse, well rounded quartz grains.
1180 - 1210	90	SILTSTONE: Medium to dark grey, occasionally light grey, very calcareous, occasionally slightly mottled texture, becoming very argillaceous, minor carbonate detrital grains and fossils, soft to firm, subfissile to blocky.
	10	LIMESTONE: Generally as above. Minor fossils.
1210 - 1240	65	SILTSTONE: As above becoming very argillaceous, tending towards calcareous mudstone or calcilutite in part.
	35	MUDSTONE: Light to medium grey, very calcareous, soft, blocky cuttings, minor carbonaceous flecks, rare glauconite grains.
1240 - 1250	80	SILTSTONE: As above.
	20	MUDSTONE: As above.
1250 - 1270	80	SILTSTONE: Light to medium grey, soft, blocky to occasionally subfissile, very calcareous and in parts very argillaceous, minor carbonaceous flecks, rare pyrite and glauconite. Sandy in part grading to calcarenite as per limestone description.
	20	LIMESTONE: Light to medium grey Calcarenite with fine to medium grained detrital carbonates set in micritic matrix. Argillaceous and silty in part, grading to siltstone. Rare carbonaceous flecks and glauconite.
1270 - 1275	90	SILTSTONE: As above. Slightly more glauconite.
	10	LIMESTONE: As above.
1275 - 1280	90	SILTSTONE: As above.
	10	LIMESTONE: As above.
1280 - 1285	100	SILTSTONE: As above.

Torsk-1

Lithology Descriptions

Depth	%	Description
1285 - 1290	95	SILTSTONE: As above.
	5	LIMESTONE: As above.
1290 - 1295	95	SILTSTONE: As above with rare mustard yellow, moderately hard, non-calcareous cuttings, minor glauconite.
	5	LIMESTONE: As above.
1295 - 1300	95	SILTSTONE: As above.
	5	LIMESTONE: As above.
1300 - 1305	90	SILTSTONE: As above. Minor glauconite.
	10	CLAYSTONE: Light to medium grey, calcareous, subfissile, "waxy" texture, soft to firm cuttings. Silty, grading to calcisiltite/siltstone as above.
1305 - 1310	95	SILTSTONE: As above.
	5	CLAYSTONE: As above.
1310 - 1315	95	SILTSTONE: As above.
	5	CLAYSTONE: As above.
1315 - 1320	100	SILTSTONE: As above becoming slightly more glauconitic.
1320 - 1325	100	SILTSTONE: Light to medium and dark grey, occasionally light olive grey, soft to firm, subangular to blocky cuttings, occasionally sub-fissile. Very argillaceous and calcareous, minor microfossils (forams, gastropods). Approximately 5% of cuttings are very glauconitic, minor pyrite. 5% moderately bright yellow to white mineral fluorescence associated with clean micritic calcisiltite cuttings.
1325 - 1330	100	SILTSTONE: As above. 5-10% of cuttings have abundant glauconite.
1330 - 1335	100	SILTSTONE: As above. 5-10% of cuttings with abundant glauconite.
1335 - 1340	100	SILTSTONE: As above. 5-10% glauconitic cuttings.
1340 - 1345	100	SILTSTONE: As above. 30% glauconitic cuttings.
1345 - 1349.5	100	SILTSTONE: Light to medium grey, medium grey/brown, occasionally dark grey, very argillaceous, very calcareous with minor fossil fragments, common glauconite (= 10%), minor disseminated pyrite, slightly arenaceous, firm to occasionally moderately hard, blocky to occasionally subfissile.

Lithology Descriptions

Depth	%	Description
1349.5 - 1355	100	SILTSTONE: As above with abundant glauconite (= 20%). Common pyrite.
1355 - 1360	100	SILTSTONE: Dominantly as above, predominantly light to medium grey, becoming very argillaceous in parts. Abundant glauconite and pyrite (both disseminated and nodular).
1360 - 1365	100	SILTSTONE: As above with trace medium to fine loose quartz grains, common glauconite and pyrite, as above.
1365 - 1370.5	60	SANDSTONE: Clear to translucent, clean and unconsolidated sand, fine to dominantly medium grained, poorly to moderately well sorted, subangular to subrounded, occasionally rounded, no cement/matrix, excellent inferred porosity. FLUOR: 1365-1370.5(T.D.) 25-30% moderately bright yellow fluorescence (in minor aggregates), spotted to even distribution, no direct cut, very weak, pale yellow, diffuse crush cut, faint, pale yellow residue ring.
	40	SILTSTONE: Dominantly medium brown, occasionally light to medium grey, becoming very arenaceous, slightly argillaceous, very calcareous, firm, blocky.
1370.5 - 1374.5		CORE 1; See Core Description
1374.5 - 1380	100	SANDSTONE: Clear to translucent medium to very coarse, dominantly very coarse grained, common bit fractured milky coarse quartz grains, moderately sorted, subrounded to angular, loose with no cement/matrix, very good to excellent inferred porosity, trace yellow calcite mineral fluorescence with no cut.
	Tr	SILTSTONE: Medium grey to medium grey/brown, very arenaceous, common carbonaceous flecks, micromicaceous, firm to moderately hard, blocky.
1380 - 1385	95	SANDSTONE: As above. No fluorescence.
	5	SILTSTONE: As above.
1385 - 1390	100	SANDSTONE: As above. No fluorescence.
1390 - 1395	75	SANDSTONE: As above. Predominantly fine to medium grained with weak sucrosic silica cement. No shows. Moderate visual porosity.
	20	SILTSTONE: As above.
	5	COAL: Black, vitreous lustre, blocky cuttings, moderately hard, slightly silty/argillaceous in part.

Torsk-1

Lithology Descriptions

Depth	%	Description
1395 - 1400	50	COAL: As above.
	30	SILTSTONE: As above.
	20	SANDSTONE: As above. Very fine to fine grained, silty and argillaceous, poor visual porosity, no shows.
1400 - 1405	40	COAL: As above. Silty in part grading to very carbonaceous siltstone.
	30	SILTSTONE: As above.
	30	SANDSTONE: As above, predominantly medium to coarse loose grains, minor silica cemented, fine to medium grained aggregates with detrital mica and carbonaceous flecks. Trace dull yellow hydrocarbon fluorescence, slow milky white streaming cut, moderate milky white crush cut with yellow to white residue ring - probably cavings from Top Latrobe shows.
1405 - 1410	90	SANDSTONE: Clear to translucent, quartzose, predominantly loose fine to coarse subangular grains, minor weak sucrosic silica cemented fine grained aggregates. Very good inferred porosity in loose grains, fair to good visual porosity in aggregates. Rare, pyrite cemented, very fine to fine grained aggregates. No fluorescence. No cut.
	5	SILTSTONE: Light to medium grey, soft to firm, argillaceous, common carbonaceous flecks and laminae, grading to silty coal in parts. Blocky cuttings.
	5	COAL: Black to greyish black, hard, blocky cuttings, subvitreous to vitreous lustre, occasionally conchoidal fracturing. Silty in part.
1410 - 1415	95	SANDSTONE: As above. No shows, 1 cutting containing light brown lignite gives slow bright yellow streaming cut and light brown oil residue ring. - Kerogen.
	5	COAL: As above.
1415 - 1420	95	SANDSTONE: As above. No shows.
	5	COAL: As above.
1420 - 1425	95	SANDSTONE: As above. No shows.
	5	COAL: As above.
1425 - 1430	100	SANDSTONE: As above. No shows.
	Tr	COAL: As above.

Torsk-1

Lithology Descriptions

Depth	%	Description
1430 - 1435	100	SANDSTONE: As above. No shows.
	Tr	COAL: As above.
	Tr	SILTSTONE: As above.
1435 - 1440	95	SANDSTONE: As above. No shows.
	5	SILTSTONE: As above.
	Tr	COAL: As above.
1440 - 1445	80	SANDSTONE: Light grey, clear to translucent, fine to coarse, occasionally very coarse grained, moderately sorted, subrounded to rounded, trace calcareous cement. Clean and loose. Trace carbonaceous flecks. Good inferred porosity. Slight trace, dull orange mineral fluorescence. No cut.
	10	SILTSTONE: Light grey to medium brown, arenaceous, micromicaceous, commonly carbonaceous, slightly calcareous in parts (? cavings), grades to silty coal in parts, blocky to subfissile, firm.
	10	COAL: Dark brown to black, subvitreous, blocky to subfissile, commonly very silty, firm to hard.
1445 - 1450	70	SANDSTONE: As above, no fluorescence.
	10	SILTSTONE: As above; plus buff to cream, arenaceous, micromicaceous, subfissile, firm.
	20	COAL: As above, vitreous in parts, trace pyrite.
1450 - 1455	80	SANDSTONE: As above, white to clear, predominantly coarse grained, very good visual porosity, no fluorescence.
	Tr	SILTSTONE: As above.
	20	COAL: Black, subbitumenous, vitreous, subconchoidal, hackly to blocky. Brittle, firm to hard.
1455 - 1460	90	SANDSTONE: As above, fine to coarse, predominantly medium grained, very good inferred porosity, no fluorescence. Trace bitumen staining.
	10	SILTSTONE: Medium brown to grey, as above.
1460 - 1465	90	SANDSTONE: As above, trace muscovite flakes, predominantly coarse grained, trace pyrite. Very good inferred porosity, slight trace yellow fluorescence, (? cavings).

Torsk-1

Lithology Descriptions

Depth	%	Description
1460 - 1465 (contd)	10	SILTSTONE: As above, medium brown arenaceous.
	Tr	COAL: As above.
1465 - 1470	100	SANDSTONE: As above, coarse to very coarse grained, trace mica. Clean and loose. Excellent inferred porosity. Slight trace mineral (calcareous) fluorescence.
	Tr	SILTSTONE: Medium brown, arenaceous to micaceous, as above.
	Tr	COAL: As above. (? cavings).
1470 - 1475	100	SANDSTONE: As above, very good to excellent inferred porosity, no fluorescence.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1475 - 1480	40	SANDSTONE: As above, no fluorescence.
	60	COAL: Black, subbituminous, subconchoidal, blocky. Slightly silty, slightly pyritic, brittle, firm to hard.
	Tr	SILTSTONE: As above.
1480 - 1485	80	SANDSTONE: As above, medium to very coarse grained, moderately sorted. Angular to rounded, very good inferred porosity, no fluorescence.
	10	SILTSTONE: Medium brown, as above, carbonaceous flecks and laminae in parts. Micromicaceous in parts.
	10	COAL: As above.
1485 - 1490	100	SANDSTONE: As above, predominantly coarse grained, very good to excellent inferred porosity, no fluorescence.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1490 -1495	100	SANDSTONE: Translucent, occasionally clear and milky, medium to very coarse, with dominantly bit fractured coarse to very coarse grains, poorly to moderately sorted, subangular to angular, minor subrounded, generally clean and loose, with minor trace silica cement, no matrix, very good inferred porosity, no fluorescence.
	Tr	COAL: As above.

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Lithology Descriptions

Depth	%	Description
1495 - 1500	100	SANDSTONE: As above.
	Tr	COAL: As above.
1500 - 1505	90	SANDSTONE: As above.
	10	COAL: As above.
1505 - 1510	70	SANDSTONE: Medium to coarse grained, angular, poorly sorted, generally as above.
	20	COAL: Black to occasionally dark brown/black, subvitreous to vitreous lustre, uneven to subconchoidal fracture, commonly silty, firm, brittle.
	10	SILTSTONE: Light to medium grey, very argillaceous, grading to claystone, non calcareous, general amorphous texture, firm, subfissile.
1510 - 1515	100	SANDSTONE: As above, coarse to very coarse, angular shards (bit fractured), very good inferred porosity, no fluorescence.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1515 - 1520	60	SANDSTONE: Generally as above. No fluorescence.
	40	COAL: As above.
1520 - 1525	100	SANDSTONE: As above, very coarse grained, common pyrite and rare pyrite cemented fine grained sandstone. Excellent visual porosity. No fluorescence.
	Tr	SILTSTONE: Medium brown, as above.
1525 - 1530	100	SANDSTONE: As above, very coarse shards (bit fractured), no pyrite, excellent inferred porosity, no fluorescence.
	Tr	SILTSTONE: As above.
1530 - 1535	90	SANDSTONE: As above. No fluorescence.
	10	SILTSTONE: Medium brown, arenaceous with argillaceous matrix, micaceous, trace siderite nodules. Blocky to fissile, firm to hard.
1535 - 1540	70	SANDSTONE: As above, becoming dominantly translucent to milky, occasionally clear and smoky, coarse to very coarse bit fractured grains, occasionally medium grained, poorly sorted, angular to subangular.

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Lithology Descriptions

Depth	%	Description
1535 - 1540 (contd)	30	SILTSTONE: As above plus buff and light grey.
	Tr	COAL: As above.
1540 - 1545	80	SANDSTONE: Light grey, clear to translucent, medium to very coarse grained, moderately sorted, angular to subrounded, trace calcareous cement, clean and loose, excellent inferred porosity, no fluorescence
	20	SILTSTONE: Interlaminated (0.5-2mm) brown carbonaceous and cream arenaceous, micromicaceous in parts, subfissile, firm.
	Tr	COAL: Black, vitreous, as above.
1545 - 1550	90	SANDSTONE: Translucent to clear, predominantly coarse to very coarse, occasionally medium grained, poorly sorted, angular to subangular, very weak calcareous cement, no matrix, very clean, loose, very good inferred porosity. No fluorescence.
	10	SILTSTONE: Medium to dark brown, mottled, becoming arenaceous, slightly argillaceous, commonly micromicaceous, common very thin carbonaceous laminae, firm, subfissile, blocky.
1550 - 1555	95	SANDSTONE: As above. No fluorescence.
	5	SILTSTONE: As above.
1555 - 1560	95	SANDSTONE: As above.
	5	SILTSTONE: Generally as above, grading to very fine grained sandstone, also occasionally light grey to light grey/green, slightly argillaceous, very arenaceous, firm, subfissile to blocky.
1560 - 1565	5	COAL: Black, subvitreous, as above.
	10	SILTSTONE: As above, becoming very arenaceous, grading to very fine grained dirty sandstone.
	85	SANDSTONE: As above.
1565 - 1570	90	SANDSTONE: As above.
	5	SILTSTONE: As above.
	5	COAL: As above.
1570 - 1575	90	SANDSTONE: As above, dominantly translucent to milky, medium to very coarse, dominantly medium grained, poorly sorted, angular to subangular. No fluorescence.

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Lithology Descriptions

Depth	%	Description
1570 - 1575 (contd)	10	SILTSTONE: Tan to medium brown, occasionally medium grey/brown, very arenaceous, slightly argillaceous, micromicaceous, minor carbonaceous flecks, firm to moderately hard, blocky.
1575 - 1580	100	SANDSTONE: Translucent to milky, commonly clear, medium to coarse, grading to very coarse grained, poorly sorted, angular to subangular (fractured grains, - inferred subangular to subrounded), weak silica cement, generally clean with no matrix evident, (washing out?), loose, inferred good to excellent porosity, no fluorescence.
	Tr	SILTSTONE: As above.
1580 - 1585	90	SANDSTONE: As above trace carbonate mineral fluorescence.
	10	SILTSTONE: Buff to medium brown, occasionally medium grey, very finely laminated, arenaceous, slightly argillaceous, very micromicaceous, carbonaceous flecks, minor carbonaceous laminae, firm to moderately hard, subfissile.
1585 - 1590	100	SANDSTONE: As above, (minor pyrite cement/matrix on grains) weak silica cement with minor quartz overgrowths.
	Tr	SILTSTONE: As above.
1590 - 1595	100	SANDSTONE: As above.
	Tr	SILTSTONE: Trace as above.
	Tr	COAL: Trace as above.
1595 - 1600	80	SANDSTONE: As above.
	20	SILTSTONE: Buff to tan, occasionally light to medium brown, very arenaceous and grades to very fine sandstone, slightly argillaceous, abundant micromica, lithic fragments, trace carbonaceous specks, firm to moderately hard, blocky.
1600 - 1605	70	SANDSTONE: Translucent to milky, occasionally clear, fine to very coarse, dominantly medium to coarse grained, very poorly sorted, angular to subangular, (bit fractured), weak silica cement in part, trace pyrite cement/matrix, trace white to light grey argillaceous matrix, dominantly loose, good inferred porosity, no show.
	30	SILTSTONE: Buff to light brown, light grey, occasionally medium grey, very arenaceous, argillaceous, abundant micromicaceous flecks, common carbonaceous and pyritic laminae, sucrosic texture, grading to very fine grained argillaceous sandstone, firm to moderately hard, blocky.

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Lithology Descriptions

Depth	%	Description
1605 - 1610	100	SANDSTONE: As above, clean, no matrix, coarse to very coarse grained, no fluorescence.
	Tr	SILTSTONE: As above. (trace to 5%).
1610 - 1615	100	SANDSTONE: As above. No fluorescence.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1615 - 1620	100	SANDSTONE: As above with weak to occasionally moderately hard sucrosic and crystalline silica cements. Trace mineral fluorescence associated with minor calcite cement. No shows.
1620 - 1625	100	SANDSTONE: Clear to translucent, medium to coarse grained, generally as above.
	Tr	SILTSTONE: Predominantly medium grey, occasionally light to medium brown, becoming very argillaceous in part, arenaceous, minor carbonaceous specks, firm, subfissile, blocky.
	Tr	COAL: As above.
1625 - 1630	95	SANDSTONE: As above.
	5	SILTSTONE: As above homogeneous texture, smooth.
1630 - 1635	100	SANDSTONE: As above. No fluorescence.
	Tr	SILTSTONE: As above.
1635 - 1640	100	SANDSTONE: Clear to translucent, fine to coarse grained, poorly sorted, angular to subrounded, common hard quartz overgrowths and minor weak sucrosic silica cement, rare orange fluorescing dolomite cement. Fair visual porosity in cemented aggregates, very good inferred porosity in loose grains. No fluorescence. No cut.
	Tr	SILTSTONE: Light grey to medium dark grey. Soft to firm, argillaceous and micromicaceous in part. Minor carbonaceous flecks and laminae.
	Tr	COAL: Black to greyish black, brittle, subvitreous.
1640 - 1645	90	SANDSTONE: As above. No fluorescence.
	10	SILTSTONE: As above.
	Tr	COAL: As above.

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Lithology Descriptions

Depth	%	Description
1645 - 1650	70	SANDSTONE: As above. No shows.
	25	SILTSTONE: As above.
	5	COAL: As above.
1650 - 1655	65	SANDSTONE: As above with more fine grained, silty cemented aggregates.
	30	COAL: As above with slow, bright canary yellow streaming fluorescent cut from kerogen within 2 coal cuttings.
	5	SILTSTONE: As above.
1655 - 1660	75	SANDSTONE: As above. No shows.
	15	SILTSTONE: As above.
	10	COAL: As above.
1660 - 1665	90	SANDSTONE: Light grey, clear to translucent, rare white, medium to coarse grained, moderately sorted, angular to subrounded, trace silica cement, predominantly clean and loose, trace mica, rare pyrite, very good inferred porosity, no fluorescence.
	5	SILTSTONE: Light brown to buff, arenaceous, micromicaceous, thinly laminated (0.5 to 2mm), subfissile, firm.
	5	COAL: Black, vitreous, subconchoidal, blocky, brittle, firm to hard.
1665 - 1670	100	SANDSTONE: As above, predominantly coarse grained, rare pyrite, very good inferred porosity, no fluorescence.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1670 - 1675	100	SANDSTONE: As above, no fluorescence.
1675 - 1680	100	SANDSTONE: As above, medium to very coarse, excellent inferred porosity, no fluorescence.
1680 - 1685	85	SANDSTONE: As above, slightly calcareous, common mica, very good inferred porosity, very dull orange mineral fluorescence.
	15	SILTSTONE: Cream, argillaceous (kaolinitic) blocky to amorphous, soft to firm.
1685 - 1690	85	SANDSTONE: As above, very good inferred porosity, common mica, no fluorescence.
	10	SILTSTONE: Cream to buff, as above.
	5	COAL: Black, vitreous, silty, blocky to subfissile, brittle, moderately hard.

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Lithology Descriptions

Depth	%	Description
1690 - 1695	100	SANDSTONE: As above, predominantly very coarse grained, excellent visual porosity, no fluorescence.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1695 - 1700	100	SANDSTONE: As above, very good inferred porosity, no fluorescence.
	Tr	SILTSTONE: As above.
1700 - 1705	100	SANDSTONE: As above, no fluorescence.
	Tr	SILTSTONE: As above.
1705 - 1710	100	SANDSTONE: As above, no fluorescence.
	Tr	SILTSTONE: As above.
1710 - 1715	100	SANDSTONE: As above, no fluorescence.
	Tr	SILTSTONE: Trace as above.
	Tr	COAL: As above.
1715 - 1720	100	SANDSTONE: As above.
	Tr	SILTSTONE: As above.
1720 - 1725	100	SANDSTONE: Light grey, translucent, medium to very coarse grained, moderately sorted, subangular to subrounded, clean and loose, trace pyrite, very good inferred porosity, no fluorescence.
1725 - 1730	100	SANDSTONE: As above, no fluorescence.
	Tr	SILTSTONE: As above.
1730 - 1735	100	SANDSTONE: As above, no fluorescence.
1735 - 1740	100	SANDSTONE: As above, no fluorescence.
Torqueing up 1741 (Spot Sample)	100	SANDSTONE: As above, no fluorescence, (no significant lithological change to explain high and erratic bit torque).
1740 - 1745	100	SANDSTONE: As above, no fluorescence.
	Tr	SILTSTONE: Medium to light brown, arenaceous with argillaceous matrix, micromicaceous, blocky, firm to soft.
1745 - 1750	100	SANDSTONE: As above, no fluorescence.
1750 - 1755	100	SANDSTONE: As above, no fluorescence.

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Lithology Descriptions

Depth	%	Description
1755 - 1760	100	SANDSTONE: Clear to translucent, medium to very coarse, predominantly coarse grained, poorly to moderately sorted, subangular, angular to subrounded in part, weak silica cement with minor quartz overgrowths, no matrix, clean, loose, very good inferred porosity, no fluorescence.
1760 - 1765	90	SANDSTONE: As above. Trace mica, trace calcareous cement and very dull orange mineral fluorescence.
	5	SILTSTONE: As above. Occasional carbonaceous laminae.
	5	COAL: Black to dark brown, silty, subvitreous, blocky to subfissile, firm to hard.
1765 - 1770	90	SANDSTONE: As above.
	10	SILTSTONE: Buff to light brown, occasionally medium brown, very arenaceous, slightly argillaceous, minor carbonaceous specks and laminae, slightly micaceous, firm to moderately hard, blocky.
1770 - 1775 (10-15% cavings in sample)	70	SANDSTONE: White to translucent, fine to medium grained, poorly sorted, predominantly loose subangular quartz grains, minor sucrosic silica and carbonate cemented aggregates which are micromicaceous and argillaceous in part. Good visual porosity in loose grains, fair to poor visual porosity in aggregates. Minor dull yellow and dull orange mineral fluorescence associated with dolomite/calcite cements.
	30	SILTSTONE: Light grey to medium dark grey and brown, argillaceous, sandy and micromicaceous in part, minor carbonaceous flecks/laminae.
	Tr	COAL: Black and greyish black, subvitreous, blocky, brittle cuttings.
1775 - 1780	95	SANDSTONE: As above, no fluorescence.
	5	SILTSTONE: As above.
1780 - 1785	60	SANDSTONE: As above, no shows.
	35	COAL: As above.
	5	SILTSTONE: As above.
1785 - 1790	100	SANDSTONE: Light grey, clear to translucent, coarse to very coarse, predominantly very coarse shards, inferred moderately sorted, loose and clean, trace to rare pyrite, excellent inferred porosity, no fluorescence.

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Lithology Descriptions

Depth	%	Description
1790 - 1795	80	SANDSTONE: As above, (shards), excellent inferred porosity, no fluorescence.
	20	COAL: Blocky, vitreous, silty in part, resinous infilled cleats brittle, hackly, hard.
1795 - 1800	80	SANDSTONE: As above, excellent inferred porosity, no fluorescence.
	10	COAL: As above.
	10	SILTSTONE: Light to medium brown, arenaceous, carbonaceous flecks and laminae, micromicaceous in part, blocky to subfissile, firm.
1800 - 1805	60	SANDSTONE: As above, excellent inferred porosity, no fluorescence.
	30	SILTSTONE: As above.
	10	COAL: As above.
1805 - 1810	50	SANDSTONE: As above, no fluorescence.
	45	SILTSTONE: As above.
	5	COAL: As above.
1810 - 1815	20	SANDSTONE: As above, medium to very coarse grained, very good visual porosity, no fluorescence.
	80	SILTSTONE: Buff to medium brown, argillaceous in part, common carbonaceous flecks and laminae (leaf fragments?), slightly calcareous, blocky to subfissile, firm to moderately hard.
	Tr	COAL: As above.
1815 - 1820	10	SANDSTONE: As above, predominantly medium grained, good inferred porosity, no fluorescence.
	85	SILTSTONE: As above.
	5	COAL: As above.
1820 - 1825	55	SANDSTONE: As above, good inferred porosity, no fluorescence.
	45	SILTSTONE: As above.
1825 - 1830	75	SANDSTONE: As above, predominantly very coarse grained, excellent inferred porosity, no fluorescence.
	25	SILTSTONE: As above.

Lithology Descriptions

Depth	%	Description
1830 - 1835	60	SANDSTONE: Translucent to light grey, occasionally clear, medium to coarse, occasionally very coarse, predominantly bit fractured angular grains (shards), minor strong silica cement, minor quartz overgrowths, clean with no matrix, loose, minor pyrite, good inferred porosity, no fluorescence.
	10	SILTSTONE: Light to medium brown, generally as above.
	30	COAL: Black, dull to subvitreous, uneven to subconchoidal fracture, very silty, grading to carbonaceous siltstone in part, firm to moderately hard, brittle.
1835 - 1840	80	SANDSTONE: As above.
	10	SILTSTONE: As above.
	10	COAL: As above.
1840 - 1845	100	SANDSTONE: As above, trace dull, spotted, yellow mineral fluorescence.
	Tr	COAL: As above.
	Tr	SILTSTONE: As above.
1845 - 1850	100	SANDSTONE: As above, medium to coarse, rarely very coarse grained, mineral fluorescence as above, good inferred porosity.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1850 - 1855	100	SANDSTONE: As above.
	Tr	SILTSTONE: As above, medium to dark brown, slightly carbonaceous, firm.
	Tr	COAL: Trace as above.
1855 - 1860	40	SANDSTONE: As above.
	40	SILTSTONE: Light to medium brown, occasionally dark brown, light grey, very arenaceous, moderately argillaceous, very carbonaceous in part, grading to carbonaceous siltstone, very fine laminae, commonly micromicaceous, firm to moderately hard, subfissile to blocky.
	20	COAL: As above.
1860 - 1865	70	SANDSTONE: As above, (coarse, bit fractured shards).
	25	SILTSTONE: As above, carbonaceous in part.
	5	COAL: As above.

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Lithology Descriptions

Depth	%	Description
1865 - 1870	20	SANDSTONE: Light grey, clear to translucent, occasionally white, medium to very coarse, predominately coarse grained, clean and loose, slight trace calcareous cement and very dull orange mineral fluorescence, very good inferred porosity.
	80	SILTSTONE: As above.
1870 - 1875	40	SANDSTONE: As above, occasionally fine to medium grained aggregates, poor to fair visual porosity, no fluorescence
	60	SILTSTONE: Cream to light brown, occasionally light grey and medium brown, rare dark brown/black, very arenaceous grading to very fine grained argillaceous sandstone, trace carbonaceous specks and laminae, trace pyrite, moderately micaceous, firm to hard, blocky to subfissile.
	Tr	COAL: As above.
1875 - 1880	100	SANDSTONE: Translucent to clear, occasionally milky, coarse to very coarse, occasionally medium grained, poorly sorted, very angular to angular, (dominantly bit fractured grains, inferred conglomerate), strong silica cement with quartz overgrowths, clean, no matrix, loose, good inferred porosity, trace dull yellow mineral (calcite) fluorescence.
1880 - 1885	90	SANDSTONE: As above.
	10	SILTSTONE: As above.
1885 - 1890	100	SANDSTONE: As above.
1890 - 1895	100	SANDSTONE: As above.
	Tr	SILTSTONE: As above.
1895 - 1900	100	SANDSTONE: As above.
1900 - 1905	100	SANDSTONE: Coarse to very coarse, angular, poorly sorted, weak to moderate silica cement. Good inferred porosity, no show.
	Tr	SILTSTONE: As above, micaceous in parts.
1905 - 1910	60	SANDSTONE: As above.
	Tr	SILTSTONE: As above.
	40	COAL: Black to very dark brown, dull, woody texture, very silty, grading to carbonaceous siltstone, uneven to subconchoidal fracture, laminated, hard, brittle.

Lithology Descriptions

Depth	%	Description
1910 - 1915	100	SANDSTONE: As above, also minor white to light grey, fine to medium grained, moderately sorted, subangular, weak silica cement, minor white argillaceous matrix, friable to firm, fair visual porosity, no fluorescence.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
1915 - 1920	100	SANDSTONE: As above, predominantly medium to coarse grained, grains have a dark brown staining, (bitumen staining?), no fluorescence.
	Tr	COAL:
1920 - 1925	100	SANDSTONE: As above, trace bitumen staining as above.
	Tr	SILTSTONE: As above.
1925 - 1930	40	SANDSTONE: As above.
	60	SILTSTONE: Medium grey/brown, off white to light grey, very arenaceous, commonly micromicaceous, common carbonaceous specks and microlaminae, firm to moderately hard, blocky.
	Tr	COAL: As above.
1930 - 1935	90	SANDSTONE: Translucent to light grey, occasionally clear, coarse to very coarse grained, as above, loose, good inferred porosity, no show, trace, very dull, yellow/orange mineral fluorescence.
	10	SILTSTONE: As above.
1935 - 1940	100	SANDSTONE: Translucent to clear, medium to coarse grained, good to very good inferred porosity, no fluorescence.
1940 - 1945	100	SANDSTONE: As above.
1945 - 1950	90	SANDSTONE: Light grey to off white, translucent to milky, occasionally dark green, medium to very coarse grained, poorly sorted, angular, minor strong silica cement, clean with no visible matrix, loose, trace pyrite, good to very good inferred porosity, no fluorescence.
	10	SILTSTONE: Light to medium brown, buff, very arenaceous, abundant mica flakes, slightly carbonaceous and argillaceous, firm to moderately hard, blocky.
1950 - 1955	100	SANDSTONE: As above.

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Lithology Descriptions

Depth	%	Description
1955 - 1960	40	SANDSTONE: As above.
	30	SILTSTONE: As above, predominantly dark brown to medium brown, occasionally buff.
	30	COAL: As above.
1960 - 1965	90	SANDSTONE: As above.
	10	SILTSTONE: As above.
1965 - 1970	50	SANDSTONE: As above.
	40	SILTSTONE: As above.
	10	COAL: Very silty, grading to carbonaceous siltstone.
1970 - 1975	50	SANDSTONE: 2 types (1) as above becoming predominant (2) light grey to off white, occasionally light brown, fine to predominantly medium, poorly to moderately sorted, subangular to subrounded, weak silica cement, minor white to light brown argillaceous matrix, trace carbonaceous specks, firm to friable, poor to fair visual porosity.
	40	SILTSTONE: As above.
	10	COAL: As above, trace to 5% bright blue/white fluorescence with bright blue/white cut from amber.
1975 - 1980	60	SANDSTONE: As above, type (1), predominantly coarse to medium grained.
	40	SILTSTONE: As above.
1980 - 1985	30	SANDSTONE:
	60	SILTSTONE: As above.
	10	COAL: As above.
1985 - 1990	90	SILTSTONE: Light to medium grey and brown, buff, very arenaceous with a sucrosic texture, grading to very fine argillaceous sandstone, moderately argillaceous, commonly micromicaceous, trace carbonaceous flecks and laminae, moderately hard to firm, brittle in part, blocky to subfissile.
	10	SANDSTONE: As above.
	Tr	COAL:
1990 - 1995	70	SANDSTONE: As above, no shows
	30	SILTSTONE: As above.
	Tr	COAL: As above.

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Lithology Descriptions

Depth	%	Description
1995 - 2000	95	SANDSTONE: As above, no shows
	5	SILTSTONE: As above.
	Tr	COAL: As above.
2000 - 2005	70	SANDSTONE: Light grey, clear to translucent, medium to very coarse grained, moderately sorted, subangular to subrounded, slight trace calcareous cement, predominantly clean and loose, common pyrite, good inferred porosity, no fluorescence.
	30	SILTSTONE: Buff to cream, arenaceous to argillaceous (?kaolinite) matrix, as above.
2005 - 2010	90	SANDSTONE: As above, predominantly very coarse grained, excellent inferred porosity, no fluorescence.
	10	SILTSTONE: As above.
2010-2015	95	SANDSTONE: Fine to occasionally very coarse grained, loose, subangular to subrounded, white to translucent quartz grains. Predominantly uncemented but some moderately hard silica and orange to dull yellow to green fluorescing dolomite/calcite cemented aggregates. Poor to fair visual porosity in cemented aggregates, good visual porosity in loose grains. Minor, pyrite cemented, very fine grained aggregates. No shows.
	5	SILTSTONE: Light to medium dark grey and brown, argillaceous, carbonaceous and micromicaceous in parts. Firm, blocky cuttings.
	Tr	COAL: Black to greyish black, brittle, subvitreous, minor conchoidal fracture.
2015 -2020	100	SANDSTONE: As above, medium to very coarse, excellent inferred porosity, trace pyrite, no fluorescence.
	Tr	SILTSTONE: As above.
2020 - 2025	100	SANDSTONE: As above, no shows.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
2025 - 2030	95	SANDSTONE: As above, no shows.
	5	SILTSTONE: As above.
	Tr	COAL: As above.
2030 - 2035	90	SANDSTONE: As above, no shows.
	10	SILTSTONE: As above.

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Lithology Descriptions

Depth	%	Description
2035 - 2040	100	SANDSTONE: As above, no shows.
	Tr	SILTSTONE: As above.
	Tr	COAL: As above.
2040 -2045	90	SANDSTONE: As above, common grey translucent grains, coarse to very coarse grained, excellent inferred porosity, no fluorescence, trace quartz overgrowths.
	10	SILTSTONE: Medium brown to buff, as above.
2045 - 2050	85	SANDSTONE: As above, weak silica cement in part, trace quartz overgrowths, good inferred porosity, no fluorescence.
	15	SILTSTONE: As above.
2050 - 2055	60	SANDSTONE: As above, no fluorescence.
	40	SILTSTONE: Cream to brown, arenaceous, as above.
2055 - 2060	30	SANDSTONE: As above, no fluorescence.
	70	SILTSTONE: As above.
2060 - 2065	100	SANDSTONE: As above.
	Tr	SILTSTONE: As above.
2065 - 2070	100	SANDSTONE: As above, medium to very coarse grained, good inferred porosity, no fluorescence.
	Tr	SILTSTONE: As above
2070 - 2075	90	SANDSTONE: As above.
	10	SILTSTONE: As above.
2075 - 2080	50	SANDSTONE: As above. Rare ilmenitic inclusions, excellent inferred porosity, no fluorescence.
	50	SILTSTONE: Cream to buff arenaceous as above.
2080 - 2085	90	SANDSTONE: Coarse to very coarse grained as above, no fluorescence.
	10	SILTSTONE: As above, becoming predominantly light grey with depth.
2085 - 2090	90	SANDSTONE: As above.
	10	SILTSTONE: Light grey, arenaceous with argillaceous matrix, rare disseminated pyrite, blocky, firm to moderately hard.

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Lithology Descriptions

Depth	%	Description
2090 - 2095	90	SANDSTONE: Translucent to milky, minor clear grains, coarse to very coarse grained, with minor fine to medium light grey aggregates, overall poorly sorted, angular to subangular fractured quartz fragments, inferred moderate silica cement as evidenced by common quartz overgrowths, minor white argillaceous matrix in fine grained aggregates, trace pyrite cement and nodules, trace mica flakes, aggregates are firm to friable, generally loose and clean grains, good inferred, fair visual porosity, no fluorescence.
	10	SILTSTONE: As above.
2095 - 2100	90	SANDSTONE: As above.
	10	SILTSTONE: As above.
2100 - 2105	100	SANDSTONE: As above, medium to very coarse, predominantly coarse grained, poorly to moderately sorted, no fluorescence.
2105 - 2110	100	SANDSTONE: As above.
	Tr	SILTSTONE: As above.
2110 - 2115	80	SANDSTONE: As above.
	20	SILTSTONE: As above.
2115 - 2120	70	SANDSTONE: As above with common fine to medium grained aggregates, which are moderately sorted, subrounded to subangular, weak to moderate silica cement, minor white argillaceous matrix, trace carbonaceous specks, moderately hard to firm, fair visual porosity, no fluorescence.
	30	SILTSTONE: Medium grey/brown occasionally light grey and brown, arenaceous, slightly argillaceous, common carbonaceous specks and fine carbonaceous laminae, firm to moderately hard, blocky, subfissile.
2120 - 2125	70	SANDSTONE: As above becoming predominately fine grained, moderately to well sorted, minor coarse to very coarse grained fragments, weak to moderate silica cement, minor white argillaceous matrix, trace pyrite, common brown staining on grains (bitumen?). Fluorescence: trace, mod[illegible] bright, pin point yellow, no cut to [illegible] weak, pale, crush cut, no to very [illegible] residue.
	30	SILTSTONE: As above, very arenaceous, sucrosic texture in part, grading to very fine sandstone.
	Tr	COAL: Black, occasionally very dull brown/black, silty in part, generally subvitreous lustre, uneven to subconchoidal fracture, brittle, moderately hard.

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Lithology Descriptions

Depth	%	Description
2125 - 2130	30	SANDSTONE: As above, no fluorescence.
	70	SILTSTONE: Becoming very argillaceous, grading to claystone, predominantly light grey to off white, micromicaceous, trace pyrite, firm, subfissile.
2130 - 2135	10	SANDSTONE: As above with common coarse to very coarse loose grains, no fluorescence.
	90	SILTSTONE: Light to medium grey, occasionally medium brown, very argillaceous, slightly arenaceous, smooth texture, soft to moderately firm, subfissile to blocky.
	Tr	COAL: Black, occasionally very dull brown/black, silty in part, generally subvitreous lustre, uneven to subconchoidal fracture, brittle, moderately hard.
2135 - 2140	90	SILTSTONE: As above.
	10	SANDSTONE: As above, no shows.
2140 - 2142 Circulate Bottoms Up	80	SANDSTONE: Medium to predominantly coarse grained, subangular to subrounded, poorly to moderately sorted, good to very good visual porosity. Minor silica and orange fluorescing dolomite cement. No hydrocarbon fluorescence or cut.
	20	SILTSTONE: As above.
2142 - 2145	85	SANDSTONE: As above. No show, trace dull yellow and orange mineral fluorescence.
	15	SILTSTONE: As above.
2145 - 2150 SAMPLES UNREPRESENTATIVE: PROBABLY MORE SANDY	95	SILTSTONE: Faint green colouring in some cuttings, very argillaceous grading to claystone in part.
	5	SANDSTONE: As above, no shows.
2150 - 2155	90	SANDSTONE: As above, predominantly coarse grained, very good inferred porosity, no fluorescence.
	10	SILTSTONE: Medium green grey, as above grading to claystone.
2155 - 2160	70	SANDSTONE: As above, common bitumen stained grains. Trace calcareous cement, very good inferred porosity, no fluorescence.
	30	SILTSTONE: Medium grey, argillaceous, grading to claystone, fossiliferous, kaolinitic specks, blocky, firm.

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Lithology Descriptions

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Depth	%	Description
2160 - 2165	70	SILTSTONE: Green to grey, light grey to medium to dark grey and light brown, sandy in parts, very argillaceous in parts grading to claystone.
	30	SANDSTONE: As above, no shows.
2165 - 2170	20	SANDSTONE: As above, no fluorescence.
	80	SILTSTONE: Medium grey green, argillaceous, trace pyrite, trace microfossils, as above.
2170 -2175	60	SILTSTONE: As above.
	40	SANDSTONE: Medium to coarse grained, loose. Trace dull yellow to green fluorescence with moderately fast streaming cut, faint yellow to green ring residue. Probably contamination in possum-belly and shakers from free oil swabbed on trip.
2175 - 2180	60	SILTSTONE: As above. Commonly light green with chlorite/glauconite staining.
	40	SANDSTONE: As above, no shows.
2180 - 2185	50	SILTSTONE: As above.
	50	COAL: Black, vitreous, conchoidal fracture, brittle.
	Tr	SANDSTONE: As above, no shows.
2185 - 2190	60	SILTSTONE: Light grey to medium dark grey and light to medium brown. Argillaceous, carbonaceous and micromicaceous in parts. Firm, blocky cuttings. Slightly sandy in parts.
	40	COAL: Black, hard, brittle, vitreous lustre, conchoidal fracture.
2190 - 2195	80	SANDSTONE: Medium to coarse grained, clear to translucent, angular to subangular, moderately well sorted, loose quartz grains. Minor white sucrosic silica cement, weak to occasionally moderately strong. No fluorescence. No cut, good visual porosity.
	10	SILTSTONE: Light green grey to medium grey and light to medium brown. Argillaceous, carbonaceous and micromicaceous in parts. Firm, blocky cuttings.
	10	COAL: Black, vitreous, lustre, conchoidal fracture, hard.
2195 - 2200	80	SANDSTONE: As above. No shows.
	20	SILTSTONE: As above.
	Tr	COAL: As above.

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Lithology Descriptions

Depth	%	Description
2200 - 2205	40	SANDSTONE: As above. No shows.
	30	COAL: As above.
	30	SILTSTONE: As above.
2205 - 2210	50	SANDSTONE: As above. No shows.
	50	SILTSTONE: As above.
	Tr	COAL: As above.
2210 - 2215	80	SANDSTONE: As above. No shows.
	15	COAL: As above.
	5	SILTSTONE: As above.
2215 - 2220	70	SANDSTONE: As above. No shows.
	25	SILTSTONE: As above.
	5	COAL: As above.
2220 - 2225	85	SILTSTONE: Light to medium grey and brown, moderately arenaceous, slightly to moderately argillaceous, grading in part to very fine grained sandstone, trace carbonaceous specks and laminae, slightly sucrosic texture, moderately hard, occasionally firm, blocky to subfissile.
	10	SANDSTONE: Translucent to milky loose grains, occasionally light grey fine to medium grained aggregates, predominantly loose coarse angular bit fractured fragments which are poorly sorted, aggregates are poorly to moderately sorted, subrounded to subangular with a moderate silica cement and quartz overgrowth development, abundant pyrite cement/matrix, sucrosic white silica matrix, aggregates are firm to moderately hard with poor to occasionally fair visual porosity, predominantly loose grains with good inferred porosity, no fluorescence (tr calcite mineral fluor).
	5	COAL: As above.
2225 - 2230	90	SILTSTONE: As above.
	10	SANDSTONE: As above.
2230 - 2235	80	SANDSTONE: As above, no fluorescence.
	15	SILTSTONE: As above.
	5	COAL: As above.

Torsk-1

Lithology Descriptions

Depth	%	Description
2235 - 2240	95	SANDSTONE: As above, common black metallic mineral (?ilmenite) inclusions, trace medium grey, coarse subrounded grains.
	5	SILTSTONE: As above.
2240 - 2245	70	SANDSTONE: As above, trace calcareous and moderate silica cements.
	30	SILTSTONE: Predominantly medium brown, arenaceous, carbonaceous flecks and laminae, occasionally micaceous.
2245 - 2250	80	SANDSTONE: As above, becoming predominantly medium grained, occasional fine grained silica cemented aggregates, abundant carbonaceous flecks and laminae, poor to good visual porosity, no fluorescence.
	20	SILTSTONE: As above.
2250 - 2255	20	SANDSTONE: As above.
	80	SILTSTONE: As above.
2255 - 2260	95	SILTSTONE: Light to medium grey and medium brown, very argillaceous grading to claystone in parts, slightly arenaceous, minor carbonaceous specks and laminae, slightly to moderately calcareous, soft to firm.
	5	SANDSTONE: Medium to coarse loose quartz grains, no fluorescence.
2260 - 2265	100	SANDSTONE: Translucent to white, occasionally clear, medium to very coarse, poorly sorted, angular quartz fragments, minor weak silica cement and very fine sucrosic recrystallized quartz on grains, no matrix, clean, trace pyrite, trace to good inferred porosity. FLUOR: Tr dull orange/yellow mineral fluorescence, no cut, no crush cut, no residue.
2265 - 2270	10	SANDSTONE: As above, trace dull roange mineral fluorescence, no cut.
	90	SILTSTONE: Predominantly medium brown, argillaceous, carbonaceous, common arenaceous laminae.
2270 - 2275	50	SANDSTONE: As above, slight trace fluorescence as above.
	50	SILTSTONE: As above.
2275 - 2280	30	SANDSTONE: As above. No fluorescence.
	70	SILTSTONE: As above.

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Lithology Descriptions

Depth	%	Description
2280 - 2285	60	SANDSTONE: Predominantly coarse to very coarse grained as above, no fluorescence.
	40	SILTSTONE: As above.
2285 - 2290	50	SANDSTONE: As above. No fluorescence.
	45	SILTSTONE: Medium brown, as above, carbonaceous.
	5	COAL: Black to dark brown, silty, grading to carbonaceous siltstone, subvitreous to vitreous, blocky to subfissile, moderately hard to hard.
2290 - 2295	90	SILTSTONE: Light green grey, medium to dark grey and light to medium brown, argillaceous, carbonaceous and micromicaceous in part. Slightly calcareous in parts. Firm, blocky cuttings.
	10	SANDSTONE: Very fine to occasionally coarse grained, loose, and weakly silica and calcite cemented aggregates. Poor visual porosity in aggregates, good inferred porosity in loose grains. No shows. Trace, orange and dull yellow, mineral fluorescence associated with calcareous cement.
	Tr	COAL: Black, hard, brittle cuttings, vitreous, conchoidal fracture.
2295 - 2300	90	SILTSTONE: As above.
	10	SANDSTONE: As above. No shows.
2300 - 2305	70	SILTSTONE: As above.
	30	SANDSTONE: As above. No shows.
2305 - 2310	90	SILTSTONE: As above.
	10	SANDSTONE: As above. No shows.
2310 - 2315	60	SANDSTONE: Fine to medium, occasionally coarse grained, angular to subrounded in parts. Weak to moderately strong sucrosic silica and minor carbonate cemented aggregates, predominantly loose grains. Good visual porosity in loose grains, poor visual porosity in cemented aggregates. Trace mineral fluorescence (dull orange and yellow) in some cemented aggregates. No shows.
	35	SILTSTONE: Light green to grey, medium dark grey and brown, argillaceous, carbonaceous and micromicaceous in parts. Firm, blocky to occasionally subfissile cuttings.
	5	COAL: Black, hard, brittle, subvitreous to vitreous, conchoidal fracture.

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Lithology Descriptions

Depth	%	Description
2315 - 2320	90	SANDSTONE: As above. Rare pinkish translucent rose quartz.
	10	SILTSTONE: As above.
	Tr	COAL: As above.
2320 - 2325	80	SANDSTONE: As above. Predominantly coarse grained angular fragments. No shows.
	10	SILTSTONE: As above.
	10	COAL: As above.
2325 - 2330	50	COAL: As above.
	45	SILTSTONE: As above.
	5	SANDSTONE: As above. No shows.
2330 - 2335	80	SANDSTONE: Predominantly medium to coarse, angular fragments. No shows. Minor pyrite cemented aggregates.
	15	SILTSTONE: As above, glauconitic in parts.
	5	COAL: As above.
2335 - 2340	50	SANDSTONE: As above. No shows.
	45	SILTSTONE: As above glauconitic in parts.
	5	COAL: As above.
2340 - 2345	55	SILTSTONE: As above
	40	SANDSTONE: As above. No shows.
	5	COAL: As above.
2345 - 2350	60	SANDSTONE: Predominantly medium to coarse, angular fragments, as above, moderately calcareous and strong silica cement, trace to common dull orange mineral fluorescence. No hydrocarbon fluorescence.
	40	SILTSTONE: Medium brown, carbonaceous, kerogenous, disseminated coarse subangular bitumen stained grains, blocky to subfissile, firm to moderately hard.

Lithology Descriptions

Depth	%	Description
2350 - 2355	60	SANDSTONE: As above, and common green/grey quartz grains.
	40	SILTSTONE: Green/grey, argillaceous, moderately calcareous, trace micro fossils, blocky, firm to soft.
2355 - 2360	75	SANDSTONE: As above, slightly calcareous, no fluorescence.
	25	SILTSTONE: As above.
2360 - 2365	90	SANDSTONE: As above, slightly calcareous, no fluorescence.
	10	SILTSTONE: As above.
2365 - 2370	90	SANDSTONE: As above, no fluorescence.
	10	SILTSTONE: As above.
2370 - 2375	40	SANDSTONE: As above, no fluorescence.
	30	SILTSTONE: Light to medium grey, as above.
TOP MAY BE REWORKED AS LITHIC SST	30	RHYOLITE: Mottled grey green, occasionally brick red, moderately weathered, commonly spherulitic with cream to red and emerald green spherules, red potassic feldspars generally partially altered to clay, sucrosic texture, Soft (weathered) to very hard, calcite replacement of ?feldspars (Rhombs), green chloritic alteration.
2375 - 2380	10	SANDSTONE: As above. (?cavings).
	10	SILTSTONE: Medium brown arenaceous, grading to very fine sandstone, carbonaceous flecks, slightly calcareous, sucrosic, firm to hard.
	80	RHYOLITE: As above.
2380 - 2385	Tr	SANDSTONE: As above.
	80	SILTSTONE: Light to medium brown, argillaceous, carbonaceous, arenaceous in part, trace disseminated quartz grains, blocky, firm.
	10	COAL: Black, vitreous, hackly to blocky, subconchoidal to conchoidal, brittle, ha[illegible]

occasionally clear, coarse to very coarse, occasionally medium, predominantly bit fractured grains, angular, poorly sorted, abundant quartz overgrowths inferring a moderate to strong silica cement, generally clean with no matrix visible, loose, inferred poor to fair porosity, trace bitumen staining giving a moderately bright to dull yellow fluorescence, no cut, no crush cut, no residue.

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Lithology Descriptions

Depth	%	Description
2385 - 2390 (contd)	10	SILTSTONE: As above.
2390- 2395	50	SANDSTONE: As above, no fluorescence.
	40	SILTSTONE: As above.
	10	COAL: As above.
2395 - 2400	50	SANDSTONE: As above, no fluorescence.
	50	SILTSTONE: As above.
2400 - 2405	5	SANDSTONE: As above (?cavings).
	95	SILTSTONE: Medium grey, argillaceous, calcareous, blocky, firm, plus medium brown carbonaceous, blocky, firm to hard.
2405 - 2410	90	SILTSTONE: As above, common forams (?cavings).
	5	SANDSTONE: As above, no shows.
	5	VOLCANICS: As above.
2410 - 2415	90	SILTSTONE: As above.
	10	SANDSTONE: As above. Predominantly coarse to medium grained, angular fragments, minor sucrosic silica cemented aggregates. No shows. Poor to good visual porosity.
2415 - 2421	60	SANDSTONE: Clear to milky white, quartzose, moderately hard, angular
TD = 2421mRKB		fragments of silica cemented sandstone. Common shattered grains. Original sandstone fine to coarse grained, poorly sorted, subrounded to subangular. Minor sucrosic silica cemented, fine grained aggregates. Poor to occasionally fair visual porosity in some aggregates. Trace dull yellow to green mineral fluorescence from several aggregates. No shows.
	40	SILTSTONE: Light green to grey to medium dark grey, minor brown, argillaceous, carbonaceous and micromicaceous in parts, firm to occasionally moderately hard, blocky to rarely subfissile.
	Tr	VOLCANICS: Mottled white/grey/green/red, common K feldspars, red and emerald green spherules. Minor calcite replacement and clay weathering to kaolinite and chlorite (probably cavings).

APPENDIX 2

CORE DESCRIPTION

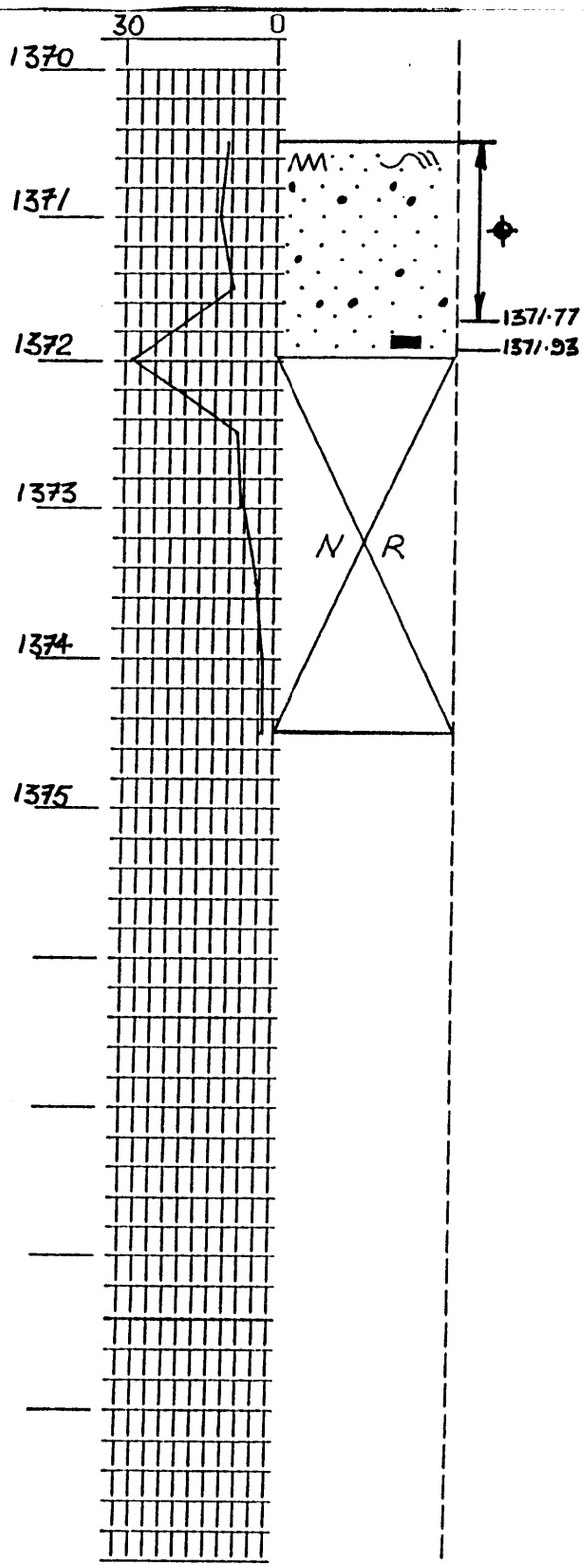
Core No. 1

Well : TORSK-1

Interval Cored : 1370.5-1374.5m
Cut : 4.0m
Bit Type : RC 444
Described by : G. Smith

Recovered : 1.48m (37%)
Bit Size : 12 1/4
Date : 2/11/88

Int. (m)	Depth & ROP (m/hr)	Graphic	Shows	Descriptive Lithology



1370.5-1370.7m: Sandstone with minor fine interlaminated current rippled siltstone.
SANDSTONE: Light grey, clear to translucent grains, fine to occasionally medium, poor to moderately sorted, subangular, weak calcareous cement, common light brown argillaceous matrix, friable, exhibiting common oil staining, micaceous, very good visual porosity, FLUOR: 60-70% dull to moderate bright yellow, instant yellow blooming cut.
SILTSTONE: Medium brown, arenaceous, common argillaceous, very calcareous, micro-micaceous, firm, blocky.

1370.7-1370.93m: Massive sandstone.
SANDSTONE: Light brown, clear to translucent grains, fine to coarse, dominantly medium to coarse, moderately sorted, subangular to subrounded, dominantly subangular, weak to moderate calcareous cement, light brown argillaceous matrix, trace mica, friable, trace bitumen staining on grains, good visual porosity,
FLUOR: 30% dull to moderately bright yellow fluorescence, instant pale yellow blooming cut, thin film residue.

1370.93-1371.23: Generally massive sandstone with minor carbonaceous laminae.

SANDSTONE: Light grey, clear to translucent grains, very fine to fine, with minor medium grains, poor to moderately sorted, subangular, weak calcareous cement, light brown/grey argillaceous matrix, friable, common oil staining, micaceous, very good visual porosity.
FLUOR: 60-70% dull to moderately bright yellow even fluorescence, instant yellow blooming cut, patchy thick film residue.

Int. (m)	Depth & ROP (m/hr)	Graphic	Shows	Descriptive Lithology
				1371.23-1371.77: Massive coarse grained sandstone. SANDSTONE: Medium brown, clear to translucent grains, fine to very coarse, dominantly coarse, poorly sorted, angular to subrounded, slight trace calcareous cement, common brown argillaceous matrix, very friable and loose, excellent visual porosity, abundant oil staining on grains. FLUOR: 100%, moderately bright yellow with even fluorescence, instant bright yellow blooming cut, bright yellow film residue, giving a strong odor and sweet taste. FREE OIL NOTED BLEEDING FROM CORE. 1371.77-1371.98: Predominantly sandstone with minor carbonaceous laminae towards the base. SANDSTONE: Light grey to light brown, clear to translucent grains, very fine to dominantly medium, poor to moderately sorted, angular to subrounded, moderately calcareous cement decreasing with depth, fair visual porosity, weak siliceous cement towards the base, common buff argillaceous matrix, minor carbonaceous flecks and laminae, friable, becoming firm with depth,common mica and altered feldspars. FLUOR: 60% decreasing to 0% at base, moderately bright to dull yellow, patchy, slow to moderately fast blooming yellow cut, thin film residue. PROBABLE OWC LIES BETWEEN 1371.77m (60% FLUOR) 1771.93m (0% FLUOR) - Chip sample from 1771.93m has 12-15% porosity (moderately well connected intergranular pore space visible with no shows).

APPENDIX 3

SIDEWALL CORE DESCRIPTIONS

NO.	Depth (m)	Rec. (mm)	Rock Type	Description
1	2401	5	SILTSTONE	Light brown/grey, moderately argillaceous, very arenaceous with common very fine grained sand, slightly micromicaceous, trace carbonaceous specks, hard, blocky. GAS: None detected.
2	2384.6	/	/	Mud and rock chips, not representative. GAS: 60 ppm methane.
3	2381.5	35	SILTSTONE	(Volcanic?) light to medium grey/green, mottled, very argillaceous, common fine to very fine quartz grains, chloritic(?), soft to firm, crumbly. GAS: 155/19/7*
4	2376	15	RHYOLITE	Mottled red/green, red potassic feldspar, abundant chlorite, feldspar altered to clay, moderately hard to hard, blocky; sample broken. GAS: 154/15/14
5	2362	10	SANDSTONE	Off white, friable, medium to very coarse grained, moderately sorted, subangular, slightly micromicaceous, non-calcareous. FLUOR: 70%, even dull yellow/green, no cut, no residue. GAS: 180/7
6	2346.5	20	CLAYSTONE	Very dark brown/black, slightly silty, very homogeneous, slightly micromicaceous, moderately hard, blocky to sub-fissile. GAS: 1137/170/105/15
7	2332.5	25	CARBONACEOUS SILTSTONE	Very dark brown, abundant carbonaceous flecks and micro laminae, very argillaceous, slightly micromicaceous, firm to moderately hard, sub-fissile. GAS: 2123/926/280/77
8	2309.5	18	CLAYSTONE	Light brown, very argillaceous, common carbonaceous flecks and minor plant remains, generally homogeneous, slightly sticky, soft, crumbly. GAS: 2280/172/35
9	2288.5	14	SILTSTONE	Medium grey, very argillaceous and arenaceous, grading to very fine sandstone in part, abundant micromica, trace carbonaceous flecks, firm, blocky. GAS: 950/68/28

* ppm C1/C2/C3 etc

10	2275.3	22	SILTSTONE	Medium grey, argillaceous, arenaceous, grading to very fine grained sandstone in part, micromicaceous, soft, blocky, non-calcareous. GAS: 820/102/35
11	2255.5	20	SILTSTONE	Brown grey, very argillaceous, arenaceous grading to fine grained sandstone in part, slightly micromicaceous, soft, blocky, trace carbonaceous flecks. GAS: 811/152/105/Tr
12	2231.5	14	SILTSTONE	Light grey, common carbonaceous flecks, very slightly argillaceous, minor micromica, soft, blocky. GAS: 482/68/38
13	2215.0	21	SANDSTONE	Light grey, soft, fine to medium grained, moderately sorted, angular to subangular, light grey kaolinite matrix. No fluorescence. GAS: 285/17/15
14	2205.0	NR	SHOT OFF	NO RECOVERY
15	2187.5	24	SILTSTONE/ COAL	Light brown, grey to black, large coal fragments, siltstone slightly argillaceous and micromicaceous, soft, blocky. GAS: 463/85/42
16	2151.0	31	SANDSTONE	Light grey, soft, very fine to fine grained, moderately sorted, subangular to subrounded; non calcareous, silty, kaolinite matrix, poor to fair visual porosity. No fluorescence. GAS: 218/68/35
17	2132.5	30	CLAYSTONE	Light grey, kaolinitic, firm, sub-fissile, non-calcareous, very slight micromicaceous. GAS: 91/18/12
18	2095.5	16	SANDSTONE	Light grey, soft, very fine to fine grained, moderate sorted, subangular to subrounded; silty, slightly carbonaceous, kaolinite matrix, poor visual porosity. No fluorescence. GAS: 171/51/16
19	2081.0	26	SANDSTONE	Light grey, soft, very fine grained, well sorted, angular to subrounded; silty, very poor visual porosity. No fluorescence. GAS: Trace C1
20	2064.5	30	SANDSTONE	Light grey, soft, medium to coarse grained, moderately sorted, angular to subrounded; minor carbonaceous flecks, good visual porosity. FLUOR: 100%, dull, even, orange, no cut, no residue. GAS: Trace C1.

21	2044.0	16	SANDSTONE	Light brown, soft, very fine to fine grained, moderately sorted, angular to subrounded; abundant carbonaceous flecks, micromicaceous, slightly argillaceous, poor visual porosity. FLUOR: 70%, very dull, even, orange, trace, dull yellow crush cut, trace residue. GAS: 114/55/34/Tr
22	2006.5	20	SANDSTONE	Light grey, soft, very fine grained, well sorted, angular to subrounded; silty, slightly carbonaceous, very poor visual porosity. No fluorescence. GAS: 133/58/39/Tr
23	1985.0	15	SANDSTONE	Light grey, soft, very fine to fine grained, moderately sorted, angular; silty, slightly carbonaceous, poor visual porosity. No fluorescence. GAS: 95/12/9
24	1974.0	34	SANDSTONE	Light grey, soft, fine to medium grained, moderately sorted, angular to subrounded; slightly carbonaceous, very slightly calcareous, fair to good visual porosity. FLUOR: 30%, dull, pinpoint, yellow, no cut, no residue. GAS: 62/6/Tr
25	1958.0	37	SILTSTONE	Light brown, very micromicaceous, slightly argillaceous, arenaceous in part, grading to very fine grained sandstone, firm, blocky, non-calcareous. GAS: 171/68/34/Tr
26	1929.5	23	SILTSTONE	Light brown to black laminae (carbonaceous), moderately argillaceous, arenaceous in part, grading to very fine grained sandstone, firm, very slightly calcareous. GAS: 209/94/85/35
27	1914.0	22	SANDSTONE	Light grey, soft, fine to medium grained, well sorted, subangular to subrounded; light grey kaolinitic matrix, very slightly calcareous, poor visual porosity. No fluorescence. GAS: 70/20/Tr
28	1870.5	12	SILTSTONE	Light grey/brown, argillaceous, slightly micromicaceous, arenaceous in part, grading to fine grained sandstone, carbonaceous flecks, soft, sticky, H_2O sensitive. GAS: 202/63/42/Tr
29	1848.0	19	SANDSTONE	Light grey, moderately hard, fine to occasionally medium grained, well sorted, subangular to subrounded; slightly carbonaceous, very slightly calcareous, fair visual porosity. FLUOR: 30%, very dull, even, yellow with very weak yellow crush cut and trace residue. GAS: 80/30/15

30	1818.5	19	SANDSTONE	Light grey, soft, fine to medium grained, moderately sorted, subrounded; kaolinitic matrix, H_2O sensitive, good visual porosity. No fluorescence. GAS: Trace C1
31	1807.5	NR		Lost bullet: Retaining wire intact.
32	1778.5	17	SILTSTONE	Very light grey, clean silt size silica, minor kaolinitic matrix, soft, very slightly micromicaceous, FLUOR: 100% even, dull, orange, with moderate, bright yellow, crush cut. GAS: 38/Tr/Tr
33	1743.5	26	SILTSTONE/ COAL	Light brown, argillaceous, micromicaceous, slightly carbonaceous, with 2-5mm coal laminae, arenaceous, grading to very fine grained sandstone, FLUOR: None visible. Moderate, yellow, crush cut, thin ring residue. GAS: 159/Tr/Tr
34	1713.5	20	SANDSTONE	White, soft, very fine grained, well sorted, subangular to subrounded; minor kaolinitic matrix, poor visual porosity. FLUOR: 70%, very dull, patchy, yellow/orange, with weak, yellow, crush cut, faint ring residue. GAS: None detected.
35	1685.0	NR		Lost bullet: Retaining wire intact.
36	1659.0	34	SANDSTONE	Clear to translucent, firm, fine grained, well sorted, angular to subrounded; sucrosic silica cement, fair visual porosity. No fluorescence. GAS: 68/Tr/Tr
37	1645.3	NR		Lost bullet: Retaining wire intact.
38	1615.0	35	SANDSTONE	White, firm, fine grained, well sorted, subangular to subround; fine grained, sucrosic silica cement, fair to good visual porosity. FLUOR: 60%, very dull, patchy, orange with very weak yellow crush cut. GAS: 72/Tr/Tr
39	1600.5	35	SILTSTONE	Medium brown, slightly argillaceous, very arenaceous, grading to fine grained sandstone, sucrosic silica cement, minor lithics, up to fair visual porosity in sandy laminae. FLUOR: None visible, very weak, yellow, crush cut. GAS: 110/Tr/Tr
40	1575.0	NR	MISFIRE	NO RECOVERY
41	1555.0	36	SANDSTONE	White to light brown, firm, fine grained, well sorted, angular to subangular; sucrosic silica cement, poor visual porosity. No fluorescence, no cut. GAS: 323/Tr/Tr

42	1546.0	29	SILTSTONE	Dark brown with black, carbonaceous laminae, very argillaceous, slightly micromicaceous, firm FLUOR: None visible. Moderate, yellow, crush cut, bright yellow ring residue. GAS: 178/Tr/Tr
43	1543.0	NR	MISFIRE	NO RECOVERY
44	1535.0	45	SANDSTONE	Very light brown, firm, fine grained, very poorly sorted, angular to subrounded; weak silica cement, strong hydrocarbon odour, light brown oil staining. FLUOR: 30%, moderately bright, patchy, yellow, with a weak, diffuse, yellow streaming cut, milky yellow crush cut, yellow ring residue. GAS: 1482/36/22/79/142/162*
45	1514.0	22	SILTSTONE	Light grey, minor kaolinitic, soft, slightly micromicaceous, non-calcareous. GAS: 58/Tr/Tr
46	1484.2	NR	MISFIRE	NO RECOVERY
47	1447.5	24	SILTSTONE	Light grey, abundant kaolin, very slightly micromicaceous, non-calcareous, very argillaceous, grading to claystone. GAS: 83/Tr
48	1404.0	34	SILTSTONE	Light grey, brown with black carbonaceous laminae, minor sandy laminae, grading to very fine grained sandstone, argillaceous, micromicaceous. FLUOR: None visible, faint yellow crush cut. GAS: 308/25/19/Tr
49	1398.0	NR	MISFIRE	NO RECOVERY
50	1375.5	35	SILTSTONE/ SANDSTONE	White to light brown, interlaminated very fine grained to silt size silica, weak sucrosic silica cement, argillaceous, slightly carbonaceous, slightly micromicaceous, low energy current ripples; very poor visual porosity in sandy lenses. No fluorescence, no cut. GAS: 1083/288/490/385/488/210
51	1375.0	NR		Lost bullet: retaining wire intact.
52	1374.5	NR	MISFIRE	NO RECOVERY
53	1374.0	54	SANDSTONE	Light brown, friable, fine to coarse grained, very poorly sorted, angular to subrounded, weak silica cement, good visual porosity, strong petroleum odour, light brown oil staining, waxy texture, ?Biodegraded oil. FLUOR: None visible, weak, yellow, crush cut. GAS: 570/170/420/2002/3003/1956*

* ppm C1/C2/C3/IC4/NC4/C5

54	1372.4	48	SANDSTONE	Light grey, friable very fine to fine grained, well sorted, subrounded to rounded, very weak silica cement, slightly argillaceous. FLUOR: 100%, solid, moderately bright to bright, yellow, with instant bright yellow blooming cut and moderately thick ring residue. GAS: 418/98/3150/10000/15600/13600
55	1368.5	NR	MISFIRE	NO RECOVERY
56	1367.6	NR		Lost bullet: retaining wire intact.
57	1362.0	58	CLAYSTONE	Medium brown/grey, abundant glauconite grains, abundant pyrite grains (disseminated and bedded), slightly micromicaceous, non-calcareous, swelling, soft, crumbly. GAS: 2052/105/700/208/183/810
58	1356.6	NR	MISFIRE	NO RECOVERY
59	1340.5	NR	-	Lost bullet: broken wire.
60	1333.7	58	CLAYSTONE	Mottled grey/green, (50% glauconite), common pyrite, very calcareous, swelling, slightly sticky, soft, crumbly. GAS: No detected.

ATTEMPTED	60
RECOVERED	45
LOST BULLETS	7
MISFIRE	7
NO RECOVERY	1

* PPM C1/C2/C3/IC4/NC4/C5

APPENDIX 4

RFT PRESSURE DATA

WELL: TOPSK #1

DATE: 14TH NOVEMBER, 1988

GEOLOGIST-ENGINEER: NEUMANN/GREWAR/SMITH - GOODE

RFT NO. RUN-SEAT	RFT TYPE	DEPTH m MDKB	DEPTH m TVD ss KB= 21m	INITIAL HYDROSTATIC HP/RFT GAUGE psia psig	PPg	TIME SET	MINIMUM FLOWING PRESSURE psia (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE psia psig	PPg	TEMP °F	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE psia psig	PPg	COMMENTS (INCLUDE PROBE TYPES)
1-1	P	2160.0	2139.0	3855.84-3841.1	10.4	22:50	NA	3052.5/3039.5		161:5	22:52	3855.88/3840.9		GOOD - L
1-2	P	2155.0	2134.0	3845.9/3831.4	10.4	23:15	NA	3044.61/3032.7		168.2	23:17	3845.28/-		GOOD - L
1-3	P	2142.0	2122.0	3822.96/3808.2	10.4	23:28	2940.29	3026.93/3014.6		168.98	23:34	3823.21/3807.8		GOOD - L
1-4	P	2125.5	2104.5	3793.82/3779.0	10.4	23:50	NA	3004.24/2991.4		169.1	0:03	3793.22/3777.8		GOOD - L
1-5	P	2120.0	2099.0	3783.0/3768.6	10.4	0:17	NA	2995.97/2983.8		168.75	0:27	3783.0/3768.0		GOOD - L
1-6	P	2001.2	1980.2	3572.6/3558.6	10.4	0:57	NA	2829.73/2817.0		167.14	1:07	3573.3/3558.6		GOOD - L
1-7	P	1995.0	1974.0	3562.1/3547.8	10.4	1:20	NA	2821.05/2809.2		166.89	1:30	3562.42/3547.9		GOOD - L
1-8	P	1977.0	1956.0	3530.0/3515.9	10.4	1:40	NA	2796.1/2783.9		166.96	1:53	3530.7/3516.1		GOOD - L
1-9	P	1975.5	1954.5	3528.16/3513.8	10.4	2:02	NA	2793.85/2782.0		166.2	2:09	3528.1/3513.6		GOOD - L
1-10	P	1974.0	1953.0	3525.0/3511.0	10.4	2:22	2695.42	2793.85/2781.8		166.09	2:28	3525.4/3510.8		SUPER CHARGED - L

PT=PRETEST

L=LONG NOSE PROBE

RFT PRESSURE DATA

WELL: TORSK #1

DATE: 15TH NOVEMBER 1988

GEOLOGIST-ENGINEER: NEUMANN/GREWAR/SMITH - GOODE

RFT NO. RUN-SEAT / RFT TYPE	DEPTH m MDKB	DEPTH m TVD ss KB=21m	INITIAL HYDROSTATIC HP/RFT GAUGE psia psig	PPg	TIME SET	MINIMUM FLOWING PRESSURE psi a (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE psia psig	PPg	TEMP °F	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE psia psig	PPg	COMMENTS (INCLUDE PROBE TYPES)
1-11 P	1965.0	1974.0	3508.6/3494.5	10.4	2:42	2699.88	2778.82/3766.7		166.1	2:48	3508.5/3493.8		GOOD - L
1-12 P	1680.0	1659.0	3007.7/2994.7	10.5	3:14	2261.03	2376.16/2366		161	3:19	3007.33/2993.9		GOOD - L
1-13 P	1665.0	1644.0	2981.24/2968.1	10.5	3:30	-	--		160.8	-	-		TOOL NOT SET - L
1-14 P	1665.0	1644.0	2981.58/2968.5	10.5	3:44	-	--		160.58	3:45	-		SEAL FAILURE - L
1-15 P	1664.0	1643.0	2979.5/2966.5	10.5	3:49	2340.74	2353.95/2344.5		160.56	3:55	2979.58/2966.3		GOOD - L
1-16 P	1662.0	1641.0	2975.84/2962.9	10.5	4:07	2258.24	2351.24/2341.5		161.03	4:12	2975.7/2962		GOOD - L
1-17 P	1655.5	1634.5	2964.14/2951.0	10.5	4:29	NA	2342.24/2332.9		161.18	4:32	2963.52/2950.1		GOOD - L
1-18 P	1654.0	1633.0	2960.5/2947.5	10.5	-	-	--		160.	-	-		TOTAL FAULT - L
1-19 P	1654.0	1633.0	2960.6/2945.8	10.4	5:37	NA	2340.89/2329.6		159.37	5:39	2960.89/2945.7		GOOD - L
1-20 P	1653.0	1632.0	2959.07/2944.2	10.5	5:50	NA	2339.74/2328.3		159.85	5:53	2959.13/2943.9		GOOD - L

PT=PRETEST

RFT 2.85 WOT OP 344 L=LONG NOSE PROBE

RFT PRESSURE DATA

WELL: TORSK #1

PAGE 3 OF 6

DATE: 15 NOVEMBER, 1988

GEOLOGIST-ENGINEER: NEUMANN/GREWAR/SMITH - GOODE

RFT NO. RUN-SEAT / RFT TYPE	DEPTH m MDKB	DEPTH m TVD ss KB = 21m	INITIAL HYDROSTATIC HP/RFT GAUGE psia psig / PPg	TIME SET	MINIMUM FLOWING PRESSURE psia (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE psia psig / PPg	TEMP °F	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE psia psig / PPg	COMMENTS (INCLUDE PROBE TYPES)
1-21 P	1640.0	1619.0	2936.2/2921.3 10.5	6:05	NA	2319.51/2306.4	160.58	6:07	2936.03/2920.6	GOOD - L
1-22 P	1630.5	1609.5	2919.27/2904.1 10.5	6:18	NA	2306.28/2294.8	160.88	6:22	2919.4/2904.1	GOOD - L
1-23 P	1384	1363	2476.94/2463.4 10.4	6:39	NA	---	155.2	6:41	---	SEAL FAILURE - L
1-24 P	1384	1363	2476.94/2463.4 10.4	6:43	NA	---		6:45	---	SEAL FAILURE - L
1-25 P	1383.0	1362	2475.13/2462.6 10.4	6:53	NA	1954.47/1944.9	149.297	6:58	2475.46/2462.5	GOOD - L
1-26 P	1377.0	1356.0	2464.21/2451.6 10.4	7:09	NA	1946.05/1936.2	148.76	7:11	2464.33/2451.4	GOOD - L
1-27 P	1375.0	1354.0	2460.70/2448.0 10.4	7:24	NA	1943.28/1933.5	147.934	7:26	2459.78/2447.0	GOOD - L
1-28 P	1373.5	1352.5	2456.50/2443.8 10.4	7:37	NA	1941.08/1931.3	147.604	7:39	2455.82/2443	GOOD - L
1-29 P	1371.0	1350.0	2449.75/2437.2 10.4	7:54	NA	---	146.923	7:57	----	SEAL FAILURE - L
1-30 P	1371.0	1350.0	2447.26/2433.4 10.4		2.33	Did not allow to build up.	146.7		2447.25/2432.9	TIGHT - L

PT=PRETEST

RFT 2.85

1107.0P.344

L=LONG NOSE PROBE

RFT PRESSURE DATA

WELL: TORSK #1

DATE: 15 NOVEMBER, 1988

GEOLOGIST-ENGINEER: NEUMANN/GREWAR/SMITH - GOODE

RFT NO. RUN-SEAT / RFT TYPE	DEPTH m MDKB	DEPTH m TVD ss KB=21m	INITIAL HYDROSTATIC HP/RFT GAUGE psia psig / PPg	TIME SET	MINIMUM FLOWING PRESSURE psia (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE psia psig / PPg	TEMP °F	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE psia psig / PPg	COMMENTS (INCLUDE PROBE TYPES)
1-31 P	1371.2	1350.2	2448.25/2437.8 10.4	8:10	NA	--	146.613	8:13	--	SEAL FAILURE - L
1-32 P	1371.1	1350.1	2447.36/2433.6 10.4	8:18	2.33	Did not allow to build up.	146.734	8:20	2447.25/2432.9	TIGHT - L
1-33 P	1370.0	1349.0	2444.23/2430.8 10.4	8:28	160.82	1944.32/1931.5	146.788	8:36	--	SUPER CHARGED - L
1-34 P	1370.2	1349.2	2443.48/2429.6 10.4	8:46	NA	1955.17/1942.5	146.986	8:49	2442.42/2428.5	SUPERCHARGED - L
1-35 P	1370.4	1349.4	2442.65/2428.6	8:58	NA	1939.08/1926.8	147.003	9:01	2441.8/2427.9	SUPERCHARGED-L
1-36 P	1369.2	1348.2	2458.84/2425.1 10.4	9:10	NA	--	146.93	9:11	2438.53/2425.3	TIGHT - L
1-37 P	1369.3	1348.3	2437.93/2424.9 10.4	9:21	NA	--	146.903	9:27	2437.82/2423.7	TIGHT - L
1-38 P	1369.5	1348.5	2437.32/2424.0 10.4	9:37	NA	1937.61/1927.2	146.886	9:40	2436.48/2423.2	GOOD - L
1-39 P	1370.6	1349.6	2438.07/2424.8 10.4	09:49	NA	1938.62/1928.3	147.007	9:57	2437.50/2423.9	GOOD - L

PT=PRETEST

RFT 2.85

1107.OP.344

L=LONG NOSE PROBE

RFT PRESSURE DATA

WELL: TORSK 1

DATE: 18 NOVEMBER, 1988

GEOLOGIST-ENGINEER: NEUMANN/GREWAR/SMITH - GOODE

RFT NO. RUN-SEAT / RFT TYPE	DEPTH m MDKB	DEPTH m TVD ss KB= 21m	INITIAL HYDROSTATIC ~~HP~~/RFT GAUGE ~~XXX~~ psig	PPg	TIME SET	MINIMUM FLOWING PRESSURE psig (PRETEST)	FORMATION PRESSURE HP/RFT GAUGE psia psig	PPg	TEMP °F	TIME RETRACT	FINAL HYDROSTATIC ~~XXX~~/RFT GAUGE ~~XXX~~ psig	PPg	COMMENTS (INCLUDE PROBE TYPES)
2-40 S	1373.0	1352.0	2507.8	10.7	13:38	NA	NB		141.3	13:42	2507.9		TIGHT - M
2-41 S	1373.0	1352.0	2507.9	10.7	13:46	624.4	NB		142.6	13:53	2507.1		TIGHT - M
2-42 S	1373.5	1352.5	2509.8	10.7	14:04	1820.3	1948.7		142.56	14:06	2509.0		SUPERCHARGED - M
2-43 S	1373.6	1352.6	2509.8	10.7	14:13	1927.0	2107.0		143.03	14:15	2509.8		SUPERCHARGED - M
2-44 S	1373.7	1352.7	2510.2	10.7	14:24	NA	2217		143.3	14:26	2510.3		SEAL FAILURE - M
2-45 S	1373.7	1352.7	2510.3	10.7	14:33	NA	NA		143.5	14:35	---		SEAL FAILURE -M
2-46 S	1373.5	1352.5	----		14:38	1968	NA			14:40	---		SEAL FAILURE -M
2-47 S	1373.5	1352.5	2509.7	10.7	14:43	1714	NB			14:44	2509.7		SUPERCHARGED -M
2-48 S	1373.4	1352.4	2509.1	10.7	14:49	1415	NB			14:51	---		SUPERCHARGED -M
2-49 S	1372.3	1351.3	2506.6	10.7	14:55	--	NA			14:56	2506.7		SEAL FAILURE -M

RFT PRESSURE DATA

WELL: TORSK 1

PAGE 6 OF 6

DATE: NOVEMBER 18, 1988

GEOLOGIST-ENGINEER: NEUMANN/GREWAR/SMITH - GOODE

RFT NO. RUN-SEAT / RFT TYPE	DEPTH m MDKB	DEPTH m TVD ss KB= 21m	INITIAL HYDROSTATIC HP/RFT GAUGE psia psig / PPg	TIME SET	MINIMUM FLOWING PRESSURE psig (PRETEST)	FORMATION PRESSURE RFT GAUGE psig / PPg	TEMP °F	TIME RETRACT	FINAL HYDROSTATIC HP/RFT GAUGE psia psig / PPg	COMMENTS (INCLUDE PROBE TYPES)
2-50 S	1372.4	1351.4	2506.6 / 10.7	14:59	317.9	1928.6	144.4	15:13	2506.3	GOOD -M *Tool retracted after 1st chamber sealed.
2-51 S	1372.4	1351.4	2506.6 / 10.7	15:15	1692.3	1934.6	146.2	15:28	2506.0	GOOD -M
3-52 S	1654.4	1633.4	3041.0 / 10.8	18:18	2263	2335.0	161.0	18:33	3045	GOOD -M
4-53 S	1370.4	1349.4	2500 / 10.7	21:57:00	NA	NA	142.6	21:58	2501	SEAL FAILURE -M
4-54 S	1370.6	1349.6	2502 / 10.7	22:03:05	1417	1935.0	142.6	22:21	2506	GOOD -M

RFT SAMPLE TEST REPORT

Well : TORSK# 1

OBSERVER : GOODE DATE : 18-NOV-88 RUN NO. : 2

	CHAMBER 1 (22.8 lit)		CHAMBER 2 (10.4 lit.)	
SEAT NO.	2-50/1372.4m		2-51/1372.4m	
DEPTH				
A. RECORDING TIMES				
Tool Set	14:59:04		15:16:00	
Chamber Open	15:04:24		15:22:55	
Chamber Full	15:09:45		15:25:50	
Fill Time	5:41 mins.		3:55 mins.	
Finish Build Up	15:13:00		15:28:30	
Build Up Time	3:15		2:40 mins.	
Tool Retract	15:13:12		15:28:22	
Total Time	14:08 mins.		12:32 mins.	
B. SAMPLE PRESSURE				
IHP	2506.6	psig	2506.6	psig
ISIP	1927.6	psig	1934.6	psig
Initial Flowing Press.	1657.2	psig	1695	psig
Final Flowing Press.	1657.3	psig	1692	psig
FSIP	1930.0		1930.1	psig
FHP	2506.3		2506.9	psig
C. TEMPERATURE				
Max. Tool Depth	1372.4	m KB	1372.4	m KB
Max. Rec. Temp	144.4	deg C	146.2	deg C
Length of Circ.	10:00	hrs	10:00	hrs
Time Circ. Stopped	7:15 hrs		7:15 hrs	
Time since Circ.	9:45	hrs	9:45	hrs
D. SAMPLE RECOVERY				
Surface Pressure	350	psig	0	psig
Amt Gas	6.8	cu ft	3.7	cu ft
Amt Oil	0	lit	0	lit
Amt Water (Total)	21.25	lit	9.75	lit
Amt Others	0	cc	0	cc
E. SAMPLE PROPERTIES				
Gas Composition				
C1	17756	ppm		ppm
C2	426	ppm		ppm
C3	3860	ppm	Insufficient Sample.	ppm
C4	2382	ppm		ppm
C5	326	ppm		ppm
C6+	.0	ppm		ppm
CO2/H2S	0/0	%/ppm		%/ppm
Oil Properties	API@	deg C	API@	deg C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	0.297 ohm@	70 deg F	0.309 ohm@	71 deg F
NaCl Equivalent		ppm		ppm
Cl-titrated	14000	ppm	135000	ppm
TRITUM	2662	ppm	2752	ppm
pH	8-8.5		8-8.5	
Est. Water Type				
Mud Filtrate Properties				
Resistivity	-- ohm@	-- deg F	ohm@	deg F
NaCl Equivalent		ppm		ppm
Cl-titrated	17000	ppm	17000	ppm
pH	9.1		9.1	
TRITUM	2814	ppm	2814	ppm
General Calibration				
Mud Weight		ppg		ppg
Calc. Hydrostatic		ppg		ppg
Serial No. (Preserved)				
REMARKS				

902179 078

RFT SAMPLE TEST REPORT

Well : TORSK# 1

OBSERVER : GOODE DATE : 18-NOV-88 RUN NO. : 3

	CHAMBER 1 (22.8 lit)	CHAMBER 2 (10.4 lit.)
SEAT NO.		
DEPTH	3-52/1654.4	3-52/1654.4m
A. RECORDING TIMES		
Tool Set	18:18:30	
Chamber Open	18:20:30	18:28:45
Chamber Full	18:26:06	18:29:58
Fill Time	5:36 mins.	1:13 mins.
Finish Build Up	18:27:20	18:31:58
Build Up Time	1:14	2:0 mins.
Tool Retract		18:33:06
Total Time	mins.	14:36 mins.
B. SAMPLE PRESSURE		
IHP	3041 psig	psig
ISIP	2335 psig	2336 psig
Initial Flowing Press.	2081 psig	2193 psig
Final Flowing Press.	2084 psig	2192 psig
FSIP	2336	2337 psig
FHP		3045 psig
C. TEMPERATURE		
Max. Tool Depth	1654.4 m KB	1654.4 m KB
Max. Rec. Temp	161.0 deg C	161.0 deg C
Length of Circ.	10:0 hrs	10:0 hrs
Time Circ. Stopped	7:15 hrs	7:15 hrs
Time since Circ.	11:20 hrs	11:20 hrs
D. SAMPLE RECOVERY		
Surface Pressure	110 psig	psig
Amt Gas	5 cu ft	cu ft
Amt Oil	19:25 lit	lit
Amt Water (Total)	3:25 lit	lit
Amt Others	0 cc	cc
E. SAMPLE PROPERTIES		
Gas Composition		
C1	75656 ppm	ppm
C2	5458 ppm	ppm
C3	7020 ppm	ppm
C4	6470 ppm	ppm
C5	1467 ppm	ppm
C6+	0 ppm	ppm
CO2/H2S	0/40 %/ppm	%/ppm
Oil Properties	54 API@ 60 deg C	API@ deg C
Colour	LIGHT BROWN	
Fluorescence	MOD. GREEN/YELLOW	
GOR		
Water Properties		
Resistivity	0.314 ohm@ 69 deg F	ohm@ deg
NaCl Equivalent	ppm	ppm
Cl-titrated	11500 ppm	ppm
TRITIUM	2699 ppm	ppm
pH	7.0	
Est. Water Type		
Mud Filtrate Properties		
Resistivity	ohm@ deg C	ohm@ deg C
NaCl Equivalent	ppm	ppm
Cl-titrated	15000 ppm	ppm
pH	10.9	
TRITUM	2710 ppm	ppm
General Calibration		
Mud Weight	ppg	ppg
Calc. Hydrostatic	ppg	ppg
Serial No. (Preserved)		RFS AD 1116
REMARKS		

SAMPLE PRESERVED FOR WT ANALYSIS

902179 079

RFT SAMPLE TEST REPORT

Well : TORSK 1

OBSERVER : GOODE DATE : 18 NOV '88 RUN NO. : 4

	CHAMBER 1 (45.4 lit)		CHAMBER 2 (10.4 lit.)	
SEAT NO.	4-54		4-54	
DEPTH	1370.6	mKB	1370.6	mKB.
A. RECORDING TIMES				
Tool Set	20:03:05	hrs		hrs
Chamber Open	22:04:44	hrs	22:14:32	hrs
Chamber Full	22:10:00	hrs	22:17:42	hrs
Fill Time	5:16	mins	3:10	mins
Finish Build Up	22:13:46	hrs	22:19:15	hrs
Build Up Time	3:46	mins	1:33	mins
Tool Retract		hrs	22:21:20	hrs
Total Time	9:02	mins	4:43	mins
B. SAMPLE PRESSURE				
Initial Hydrostatic	2502	psia/g		psia/g
Initial Form'n Press.	1935	psia/g	1935	psia/g
Initial Flowing Press.	270	psia/g	1685	psia/g
Final Flowing Press.	383	psia/g	1662	psia/g
Final Formation Press.	1935	psia/g	1935	psia/g
Final Hydrostatic		psia/g	2506	psia/g
C. TEMPERATURE				
Max. Tool Depth	1370.6	m KB	1370.6	m KB
Max. Rec. Temp	142.6	deg C	142.6	deg F
Length of Circ.	10:0	hrs	10:10	hrs
Time/Date Circ. Stopped	7:15 hrs	18/11/88	7:15hrs	18/11/88
Time since Circ.	12:45 hrs	mins	12:45 hrs	mins
D. SAMPLE RECOVERY				
Surface Pressure	200	psig		psig
Amt Gas	219.54	cu ft		cu ft
Amt Oil	13.0	lit		lit
Amt Water (Total)	22.8	lit		lit
Amt Others	0	lit		lit
E. SAMPLE PROPERTIES				
Gas Composition				
C1	81060	ppm		ppm
C2	4605	ppm		ppm
C3	3859	ppm		ppm
C4	4027	ppm		ppm
C5	2282	ppm		ppm
C6+	0	ppm		ppm
CO2/H2S	0/20	%/ppm		%/ppm
Oil Properties	64 deg API@	60 deg C	deg API@	deg C
Colour	Straw brown			
Fluorescence	Bright blue			
GOR				
Pour Point				
Water Properties				
Resistivity	0.339 ohm-m @	70 deg F	ohm-m @	deg C
NaCl Equivalent		ppm		ppm
Cl-titrated	13000	ppm		ppm
Tritium	2557	DPM		DPM
pH	8.5			
Est. Water Type				
F. MUD FILTRATE PROPERTIES				
Resistivity	— ohm-m @	deg C	ohm-m @	deg C
NaCl Equivalent		ppm		ppm
Cl-titrated	17000	ppm		ppm
pH	9.1			
Tritium (in Mud)	2814.	DPM		DPM
G. GENERAL CALIBRATION				
Mud Weight		ppg		ppg
Calc. Hydrostatic		psi		psi
Serial No. (Preserved)			RFS AE 1219	
Choke Size/Probe Type	MARTINEAU		MARTINEAU	
REMARKS	Lost seal on lower chamber & some gas & small volume		of oil.	

SAMPLE PRESERVED FOR PVT ANALYSIS

APPENDIX 5

902179 081

Schlumberger

ESSO AUSTRALIA LIMITED

SONIC CALIBRATION PROCESSING REPORT

TORSK #1

FIELD : WILDCAT

STATE : VICTORIA

COUNTRY : AUSTRALIA

COORDINATES : 038° 26' 49.12" S
147° 29' 50.04" E

DATE OF SURVEY : 13-NOVEMBER-1988

REFERENCE NO. : 569262

Contents

List of Figures

1. Introduction

A checkshot survey was shot in the Torsk #1 well on 13 November 1988. Data was acquired using a dynamite source located near the wellhead. Sixteen levels were shot from 2422 metres 772 197 metres below KB. All levels are used in the sonic calibration processing.

2. Data Acquisition

The data was acquired using the well seismic tool (WST). Recording was made on the Schlumberger Cyber Service Unit (CSU) using LIS format at a tape density of 800 BPI.

Table 1: Survey Parameters

Datum	0.0 metres AMSL
Elevation KB	21.0 metres AMSL
Elevation DF	20.7 metres AMSL
Elevation GL	-43.0 metres AMSL
Total Depth	2423 metres below KB
Energy Source	Airgun
Source Offset	40 metres
Source Depth	9.1 metres
Reference Sensor	Hydrophone
Sensor Offset	40 metres
Sensor Depth	12.2 metres
Downhole Geophone	Geospace HS-1
	High Temp. (350°F)
	Coil Resist. 225Ω ±10 %
	Natural Freq. 8-12 hertz
	Sensitivity 0.45 V/in/sec
	Maximum tilt angle 60°

3. Sonic Calibration Processing

3.1 Sonic Calibration

A 'drift' curve is obtained using the sonic log and the vertical check level times. The term 'drift' is defined as the seismic time (from check shots) minus the sonic time (from integration of edited sonic). Commonly the word 'drift' is used to identify the above difference, or to identify the gradient of drift versus increasing depth, or to identify a difference of drift between two levels.

The gradient of drift, that is the slope of the drift curve, can be negative or positive.

For a negative drift $\frac{\Delta drift}{\Delta depth} < 0$, the sonic time is greater than the seismic time over a certain section of the log.

For a positive drift $\frac{\Delta drift}{\Delta depth} > 0$, the sonic time is less than the seismic time over a certain section of the log.

The drift curve, between two levels, is then an indication of the error on the integrated sonic or an indication of the amount of correction required on the sonic to have the TTI of the corrected sonic match the check shot times.

Two methods of correction to the sonic log are used.

1. **Uniform or block shift** This method applies a uniform correction to all the sonic values over the interval. This uniform correction is applied in the case of positive drift and is the average correction represented by the drift curve gradient expressed in μsec/ft.

2. **ΔT Minimum** In the case of negative drift a second method is used, called Δt minimum. This applies a differential correction to the sonic log, where it is assumed that the greatest amount of transit time error is caused by the lower velocity sections of the log. Over a given interval the method will correct only Δt values which are higher than a threshold, the Δt_{min}. Values of Δt which are lower than the threshold are not corrected. The correction is a reduction of the excess of Δt over Δt_{min}, Δt - Δt_{min}.

   $\Delta t - \Delta t_{min}$ is reduced through multiplication by a reduction coefficient which remains constant over the interval. This reduction coefficient, named G, can be be defined as:

$$G = 1 + \frac{drift}{\int (\Delta t - \Delta t_{min}) dZ}$$

   Where drift is the drift over the interval to be corrected and the value $\int (\Delta t - \Delta t_{min}) dZ$ is the time difference between the integrals of the two curves Δt and Δt_{min}, only over the intervals where $\Delta t > \Delta t_{min}$.

   corrected sonic: $\Delta t = G(\Delta t - \Delta t_{min}) + \Delta t_{min}$.

3.2 Checkshot Data

The hydrophone signal is used as the zero time reference. The checkshot data quality is good and is displayed in Figure 2.

3.3 Correction to Datum

A static correction is made for source depth from seismic datum and for hydrophone to source offset by assuming as water velocity of 1480 metres/sec. Additional corrections are made for source offset from the well head.

3.4 Open Hole Logs

The sonic log was recorded from 2422 metres to the casing shoe at 200 metres below KB. Minor zones of cycle skipping have been removed.

The density, caliper and gamma ray curves are included as correlation curves.

3.5 Sonic Calibration Results

The top of the sonic log (200 metres below KB) is chosen as the origin for the calibration drift curve.

drift curve indicates a number of corrections to be made to the sonic log. adjusted sonic curve is considered to be the best result using the available data. A list of shifts used on the sonic data is given below.

Table 2: Sonic Drift

Depth Interval (metres below KB)	Block Shift μsec/ft	Δt_{min} μsec/ft	Equiv Block Shift μsec/ft
200-996	3.83	-	3.83
996-1078	2.97	-	2.97
1078-1366	-	112.59	-2.54
1366-1973	0.00	-	0.00
1973-2422	1.09	-	1.09

4. Synthetic Seismogram Processing

GEOGRAM plots were generated using 30 and 40 hertz zero phase and minimum phase ricker wavelets.

The presentations include both normal and reverse polarity on a time scale of 10 cm/sec.

GEOGRAM processing produces synthetic seismic traces based on reflection coefficients generated from sonic and density measurements in the well-bore. The steps in the processing chain are the following:

Depth to time conversion
Reflection coefficient generation
Attenuation coefficient calculation
Convolution
Output.

4.1 Depth to Time Conversion

Open hole logs are recorded from the bottom to top with a depth index. This data is converted to a two-way time index and flipped to read from the top to bottom in order to match the seismic section.

4.2 Primary Reflection Coefficients

Sonic and density data are averaged over chosen time intervals (normally 2 or 4 millisecs). Reflection coefficients are then computed using:

$$R = \frac{\rho_2.\nu_2 - \rho_1.\nu_1}{\rho_2.\nu_2 + \rho_1.\nu_1}$$

where:

ρ_1 = density of the layer above the reflection interface
ρ_2 = density of the layer below the reflection interface
ν_1 = compressional wave velocity of the layer above the reflection interface
ν_2 = compressional wave velocity of the layer below the reflection interface

This computation is done for each time interval to generate a set of primary reflection coefficients without transmission losses.

4.3 Primaries with Transmission Loss

Transmission loss on two-way attenuation coefficients is computed using:

$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

A set of primary reflection coefficients with transmission loss is generated using:

$$Primary_n = R_n.A_{n-1}$$

4.4 Primaries plus Multiples

Multiples are computed from these input reflection coefficients using the transform technique from the top of the well to obtain the impulse response of the earth. The transform outputs primaries plus multiples.

4.5 Multiples Only

By subtracting previously calculated primaries from the above result we obtain multiples only.

4.6 Wavelet

A theoretical wavelet is chosen to use for convolution with the reflection coefficients previously generated. Choices available include:

Klauder wavelet
Ricker zero phase wavelet
Ricker minimum phase wavelet
Butterworth wavelet
User defined wavelet.

Time variant Butterworth filtering can be applied after convolution.

4.7 Polarity Convention

An increase in acoustic impedance gives a positive reflection coefficent, is written to tape as a negative number and is displayed as a white trough under normal polarity. Polarity conventions are displayed in Figure-1.

4.8 Convolution

The standard procedure of convolving the wavelet with reflection coefficients; the output is the synthetic seismogram.

A Summary of Geophysical Listings

Six geophysical data listings are appended to this report. Following is a brief description of the format of each listing.

A1 Geophysical Airgun Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Measured depth from KB : *dkb*, the depth in metres from kelly bushing .
3. Vertical depth from SRD : *dsrd*, the depth in metres from seismic reference datum.
4. Vertical depth from GL : *dgl*, the depth in metres from ground level.
5. Observed travel time HYD to GEO : *tim*0, the transit time picked from the stacked data by subtracting the surface sensor first break time from the downhole sensor first break time.
6. Vertical travel time SRC to GEO : *timv*, is corrected for source to hydrophone distance and for source offset.
7. Vertical travel time SRD to GEO : *shtm*, is *timv* corrected for the vertical distance between source and datum.
8. Average velocity SRD to GEO : the average seismic velocity from datum to the corresponding checkshot level, $\frac{dsrd}{shtm}$.
9. Delta depth between shots : $\Delta depth$, the vertical distance between each level.
10. Delta time between shots : $\Delta time$, the difference in vertical travel time (*shtm*) between each level.
11. Interval velocity between shots : the average seismic velocity between each level, $\frac{\Delta depth}{\Delta time}$.

A2 Drift Computation Report

1. Level number : the level number starting from the top level (includes any imposed shots).
2. Vertical depth from KB : the depth in metres from kelly bushing .
3. Vertical depth from SRD : the depth in metres from seismic reference datum.
4. Vertical depth from GL : the depth in metres from ground level.
5. Vertical travel time SRD to GEO : the calculated vertical travel time from datum to downhole geophone (see column 7, Geophysical Airgun Report).

6. Integrated raw sonic time : the raw sonic log is integrated from top to bottom and listed at each level. An initial value at the top of the sonic log is set equal to the checkshot time at that level. This may be an imposed shot if a shot was not taken at the top of the sonic.

7. Computed drift at level : the checkshot time minus the integrated raw sonic time.

8. Computed blk-shft correction : the drift gradient between any two checkshot levels ($\frac{\Delta drift}{\Delta depth}$).

A3 Sonic Adjustment Parameter Report

1. Knee number : the knee number starting from the highest knee. (The first knees listed will generally be at SRD and the top of sonic. The drift imposed at these knees will normally be zero.)

2. Vertical depth from KB : the depth in metres from kelly bushing .

3. Vertical depth from SRD : the depth in metres from seismic reference datum.

4. Vertical depth from GL : the depth in metres from ground level.

5. Drift at knee : the value of drift imposed at each knee.

6. Blockshift used : the change in drift divided by the change in depth between any two levels.

7. Delta-T minimum used : see section 4 of report for an explanation of Δt_{min}.

8. Reduction factor : see section 4 of report.

9. Equivalent blockshift : the gradient of the imposed drift curve.

A4 Velocity Report

1. Level number : the level number starting from the top level (includes any imposed shots).

2. Vertical depth from KB : the depth in metres from kelly bushing .

3. Vertical depth from SRD : the depth in metres from seismic reference datum

4. Vertical depth from GL : the depth in metres from ground level

5. Vertical travel time SRD to GEOPH : the vertical travel time from SRD to downhole geophone (see column 7, Geophysical Airgun Report)

6. Integrated adjusted sonic time : the adjusted sonic log is integrated from top to bottom. An initial value at the the top of the sonic is set equal the checkshot time at that level. (The adjusted sonic log is the drift corrected sonic log.)

7. Drift=shot time-raw son : the check shot time minus the raw integrated sonic time.

8. Residual=shot time-adj son : the check shot time minus the adjusted integrated sonic time. This is the difference between calculated drift and the imposed drift.

9. Adjusted interval velocity : the interval velocity calculated from the integrated adjusted sonic time at each level.

A5 Time Converted Velocity Report

The data in this listing has been resampled in time.

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at SRD (0 millisecs) and the sampling rate is 2 millisecs.

2. Measured depth from KB : the depth from KB at each corresponding value of two way time.

3. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.

4. Average velocity SRD to GEO : the vertical depth from SRD divided by half the two way time.

5. RMS velocity : the root mean square velocity from datum to the corresponding value of two way time.

$$v_{rms} = \sqrt{\Sigma_1^n v_i^2 t_i / \Sigma_1^n t_i}$$

where v_i is the velocity between each 2 millisecs interval.

6. First normal moveout : the correction time in millisecs to be applied to the two way travel time for a specified moveout distance (default = 3000 feet).

$$\Delta t = \sqrt{t^2 + (\frac{X}{v_{rms}})^2} - t$$

where:

Δt = normal moveout (secs)
X = moveout distance (metres)
t = two way time (secs)
v_{rms} = rms velocity (metres /sec)

7. Second normal moveout : the correction time in millisecs to be applied to the two way travel time for a specified moveout distance (default = 4500 feet).

8. Third normal moveout : the correction time in millisecs to be applied to the two way travel time for a specified moveout distance (default = 6000 feet).

9. Interval velocity : the velocity between each sampled depth. Typically, the sampling rate is 2 millisecs two way time, (1 millisec one way time) therefore the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

A6 Synthetic Seismogram Table

1. Two way travel time from SRD : This is the index for the data in this listing. The first value is at the top of the sonic. The default sampling rate is 2 millisecs.

2. Vertical depth from SRD : the vertical depth from SRD at each corresponding value of two way time.

3. Interval velocity : the velocity between each sampled depth. The sampling rate is 2 millisecs two way time, (1 millisec one way time) the interval velocity will be equal to the depth increment divided by 0.001. It is equivalent to column 9 from the the Velocity Report.

4. Interval density : the average density between two successive values of two way time.

5. Reflect. coeff. : the difference in acoustic impedance divided by the sum of the acoustic impedance between any two levels. The acoustic impedance is the product of the interval density and the interval velocity.

6. Two way atten. coeff. : is computed from the series

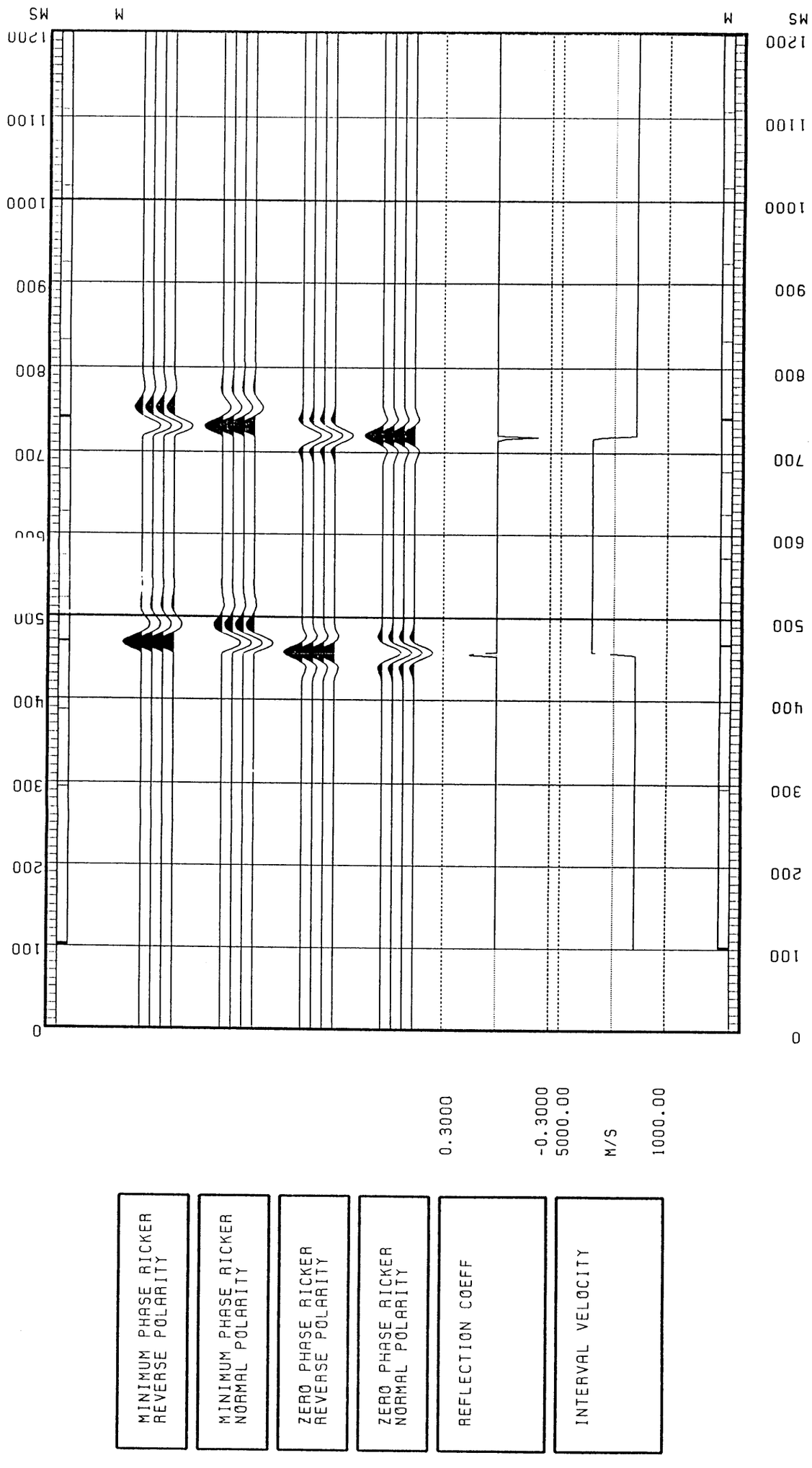
$$A_n = (1 - R_1^2).(1 - R_2^2).(1 - R_3^2)...(1 - R_n^2)$$

7. Sythetic seismo. primary : the product of the reflection coefficient at each depth and the two way attenuation coefficient up to that depth.

$$Primary_n = R_n.A_{n-1}$$

8. Primary + multiple : a transform technique is used to calculate multiples from the input reflection coefficients.

9. Multiples only : (Primary + multiple) - (Synthetic seismo. primary)



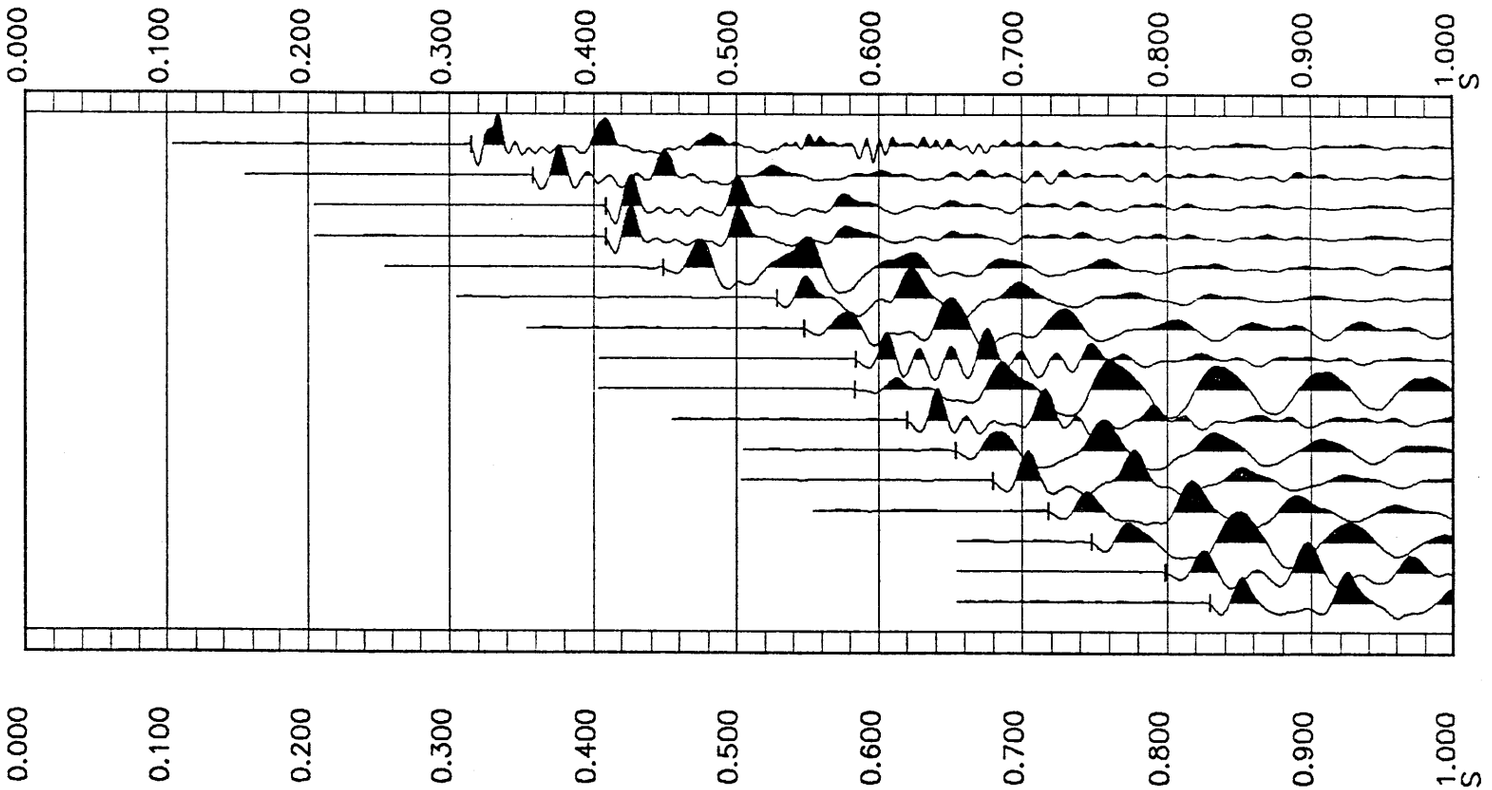
SCHLUMBERGER (SEG-1976) WAVELET POLARITY CONVENTION

Figure 1

Figure 2

TORSK #1
STACKED CHECKSHOT DATA

RAW DEPTH M	TRANSIT TIME S	LEVEL NO
772.0	0.315	16
900.0	0.358	15
1058.0	0.409	14
1060.0	0.408	13
1160.0	0.449	12
1366.0	0.529	11
1433.0	0.547	10
1538.0	0.584	9
1540.0	0.583	8
1655.0	0.620	7
1775.0	0.653	6
1862.0	0.680	5
1997.0	0.718	4
2105.0	0.748	3
2298.0	0.799	2
2422.0	0.830	1



SHOTS

From W.C.R. Vol 1

ANALYST: M. SANDERS

12-DEC-88 19:25:04 PROGRAM: GSHOT 007.E08

SCHLUMBERGER

GEOPHYSICAL AIRGUN REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

ANALYST: M. SANDERS 12-DEC-88 19:25:04 PROGRAM: GSHOT 007.EDT

SCHLUMBERGER

GEOPHYSICAL AIRGUN REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
VELHYD - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE HYDROPHONE
VELSUR - VELOCITY OF THE MEDIUM BETWEEN THE SOURCE AND THE SRD

MATRIX

GUNELZ - SOURCE ELEVATION ABOVE SRD (ONE FOR THE WHOLE JOB; OR ONE PER SHOT)
GUNEWZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN EW DIRECTION (CF. GUNELZ)
GUNNSZ - SOURCE DISTANCE FROM THE BOREHOLE AXIS IN NS DIRECTION (CF. GUNELZ)
HYDELZ - HYDROPHONE ELEVATION ABOVE SRD (CF. GUNELZ)
HYDEWZ - HYDROPHONE DISTANCE FROM THE BOREH AXIS IN EW DIRECTION (CF GUNELZ)
HYDNSZ - HYDROPHONE DISTANCE FROM THE BOREH AXIS IN NS DIRECTION (CF GUNELZ)
TRTHYD - TRAVEL TIME FROM THE HYDROPHONE TO THE SOURCE
TRTSRD - TRAVEL TIME FROM TESOURCE TO THE SRD
DEVWEL - DEVIATED WELL DATA PER SHOT : MEAS. DEPTH, VERT. DEPTH, EW, NS

SAMPLED

SHOT.GSH - SHOT NUMBER
DKB.GSH - MEASURED DEPTH FROM KELLY-BUSHING
DSRD.GSH - DEPTH FROM SRD
DGL.GSH - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
TIMO.GSH - MEASURED TRAVEL TIME FROM HYDROPHONE TO GEOPHONE
TIMV.GSH - VERTICAL TRAVEL TIME FROM THE SOURCE TO THE GEOPHONE
SHTM.GSH - SHOT TIME (WST)
AVGV.GSH - AVERAGE SEISMIC VELOCITY
DELZ.GSH - DEPTH INTERVAL BETWEEN SUCCESSIVE SHOTS
DELT.GSH - TRAVEL TIME INTERVAL BETWEEN SUCCESSIVE SHOTS
INTV.GSH - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	21.0000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEVATION OF KELLY BUSHI	EKB	:	21.0000	M
ELEV OF GL AB. SRD(WST)	GL	:	-43.0000	M
VEL SOURCE-HYDRO(WST)	VELHYD	:	1480.00	M/S
VEL SOURCE-SRD (WST)	VELSUR	:	1480.00	M/S

(MATRIX PARAMETERS)

	SOURCE ELV M	SOURCE EW M	SOURCE NS M	HYDRO ELEV M	HYDRO EW M	HYDRO NS M
1	-9.10	0	40.00	-12.20	0	40.00

	TRT HYD-SC MS	TRT SC-SRD MS
1	2.09	6.15

	MD @ KB M	VD @ KB M	VD @ SRD M	E-W COORD M	N-S COORD M
1	64.00	64.00	43.00	0	0
2	200.00	200.00	179.00	0	0
3	772.00	772.00	751.00	0	0
4	900.00	900.00	879.00	0	0
5	1060.00	1060.00	1039.00	0	0
6	1160.00	1160.00	1139.00	0	0
7	1366.00	1366.00	1345.00	0	0
8	1433.00	1433.00	1412.00	0	0
9	1538.00	1538.00	1517.00	0	0
10	1655.00	1655.00	1634.00	0	0
11	1775.00	1775.00	1754.00	0	0
12	1862.00	1862.00	1841.00	0	0
13	1997.00	1997.00	1976.00	0	0
14	2105.00	2105.00	2084.00	0	0
15	2298.00	2298.00	2277.00	0	0
16	2422.00	2422.00	2401.00	0	0

COMPANY : ESSO AUSTRALIA LTD : TORSK #1

LEVEL NUMBER	MEASURED DEPTH FROM RB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	OBSERVED TRAVEL TIME HYD/GEO MS	VERTICAL TRAVEL TIME SRC/GEO MS	VERTICAL TRAVEL TIME SRD/GEO MS	AVERAGE VELOCITY SRD/GEO M/S	DELTA DEPTH BETWEEN SHOTS M	DELTA TIME BETWEEN SHOTS MS	INTERVAL VELOCITY BETWEEN SHOTS M/S
1	64.00	43.00	0	33.34	22.91	29.06	1480			
								136.00	69.65	1953
2	200.00	179.00	136.00	93.00	92.56	98.71	1813			
								572.00	223.77	2556
3	772.00	751.00	708.00	314.70	316.34	322.48	2329			
								128.00	43.22	2962
4	900.00	879.00	836.00	357.84	359.55	365.70	2404			
								160.00	50.72	3155
5	1060.00	1039.00	996.00	408.49	410.28	416.42	2495			
6	1160.00	1139.00	1096.00	448.57	450.38	456.53	2497			
								206.00	80.04	2574
7	1366.00	1345.00	1302.00	528.57	530.43	536.58	2507			
								67.00	18.91	3542
8	1433.00	1412.00	1369.00	547.47	549.34	555.49	2542			
								105.00	36.63	2867
9	1538.00	1517.00	1474.00	584.08	585.97	592.12	2562			
								117.00	36.20	3232
10	1655.00	1634.00	1591.00	620.26	622.17	628.31	2601			
								120.00	33.12	3624
11	1775.00	1754.00	1711.00	653.36	655.28	661.43	2652			
								87.00	26.33	3304
12	1862.00	1841.00	1798.00	679.68	681.61	687.76	2677			
								135.00	37.91	3561
13	1997.00	1976.00	1933.00	717.58	719.53	725.67	2723			
								108.00	30.35	3559
14	2105.00	2084.00	2041.00	747.92	749.88	756.02	2757			
								193.00	50.80	3799
15	2298.00	2277.00	2234.00	798.71	800.68	806.83	2822			
								124.00	30.80	4026
16	2422.00	2401.00	2358.00	829.50	831.48	837.63	2866			

DRIFT

DRIFT

From W.C.R Vol 1

ANALYST: M. SANDERS 12-DEC-88 19:30:11 PROGRAM: GDRIFT 007.E09

02 OCT 1989

SCHLUMBERGER

DRIFT COMPUTATION REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
XSTART - TOP OF ZONE PROCESSED BY WST
XSTOP - BOTTOM OF ZONE PROCESSED BY WST
GAD001 - RAW SONIC CHANNEL NAME USED FOR WST SONIC ADJUSTMENT
UNFDEN - UNIFORM DENSITY VALUE

ZONE

LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
SHDR - DRIFT AT SHOT OR KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE

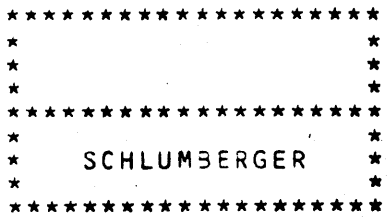
(GLOBAL PARAMETERS)		(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	: 21.0000	M
ELEV OF SRD AB. MSL(WST)	SRD	: 0	M
ELEVATION OF KELLY BUSHI	EKB	: 21.0000	M
ELEV OF GL AB. SRD(WST)	GL	: -43.0000	M
TOP OF ZONE PROCD (WST)	XSTART	: 0	M
BOT OF ZONE PROCD (WST)	XSTOP	: 0	M
RAW SONIC CH NAME (WST)	GAD001	: DT.ATT.002.FLP.*	
UNIFORM DENSITY VALUE	UNFDEN	: 2.30000	G/C3

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG DENS	LOFDEN	: 1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1 PAGE 2

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEO MS	INTEGRATED RAW SONIC TIME MS	COMPUTED DRIFT AT LEVEL MS	COMPUTED BLK-SHFT CORRECTION US/F
							0
1	64.00	43.00	0	29.06	29.06	0	0
2	200.00	179.00	136.00	98.71	98.71	0	3.89
3	772.00	751.00	708.00	322.48	315.19	7.29	5.64
4	900.00	879.00	836.00	365.70	356.04	9.66	2.10
5	1060.00	1039.00	996.00	416.42	405.66	10.77	2.09
6	1160.00	1139.00	1096.00	456.53	445.08	11.45	-3.82
7	1366.00	1345.00	1302.00	536.58	527.71	8.87	-13.74
8	1433.00	1412.00	1369.00	555.49	549.64	5.85	7.48
9	1538.00	1517.00	1474.00	592.12	583.69	8.42	1.61
10	1655.00	1634.00	1591.00	628.31	619.27	9.04	-4.58
11	1775.00	1754.00	1711.00	661.43	654.19	7.24	5.73
12	1862.00	1841.00	1798.00	687.76	678.89	8.87	-.97
13	1997.00	1976.00	1933.00	725.67	717.23	8.44	3.49
14	2105.00	2084.00	2041.00	756.02	746.35	9.68	1.31
15	2298.00	2277.00	2234.00	806.83	796.32	10.51	-3.96
16	2422.00	2401.00	2358.00	837.63	828.73	8.90	

ANALYST: M. SANDERS 12-DEC-88 19:36:08 PROGRAM: GADJST 008.E08



SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

ANALYST: M. SANDERS 12-DEC-83 19:36:08 PROGRAM: GADJST 008.E08

SCHLUMBERGER

SONIC ADJUSTMENT PARAMETER REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

LONG DEFINITIONS

GLOBAL

SRCDRF - ORIGIN OF ADJUSTMENT DATA
CONADJ - CONSTANT ADJUSTMENT TO AUTOMATIC DELTA-T MINIMUM = 7.5 US/F
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

ZDRIFT - USER DRIFT AT BOTTOM OF THE ZONE
ADJOPZ - TYPE OF ADJUSTMNENT IN THE DRIFT ZONE : 0=DELTA-T MIN, 1=BLOCKSHIFT
ADJUSZ - DELTA-T MINIMUM USED FOR ADJUSTMENT IN THE DRIFT ZONE
LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

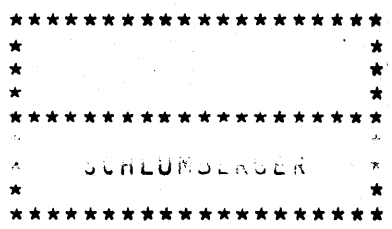
SHOT - SHOT NUMBER
VDKB - VERTICAL DEPTH RELATIVE TO KB
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
KNEE - KNEE
BLSH - BLOCK SHIFT BETWEEN SHOTS OR KNEE
DTMI - VALUE OF DELTA-T MINIMUM USED
COEF - DELTA-T MIN COEFFICIENT USED IN THE DRIFT ZONE
DRGR - GRADIENT OF DRIFT CURVE

(GLOBAL PARAMETERS)		(VALUE)	
ORIG OF ADJ DATA (WST)	SRCDRF	: 2.00000	
CONS SONIC ADJST (WST)	CONADJ	: 7.50000	US/F
UNIFORM EARTH VELOCITY	UNERTH	: 2133.60	M/S

(ZONED PARAMETERS)		(VALUE)		(LIMITS)
USER DRIFT ZONE (WST)	ZDRIFT	: 10.00000	MS	2422.00 - 1973.00
		8.400000		1973.00 1366.00
		8.400000		1366.00 1078.00
		10.80000		1078.00 996.000
		10.00000		996.000 200.000
		0		200.000 0
ADJUSMNT MODE (WST)	ADJOPZ	:-999.2500		30479.7 - 0
USER DELTA-T MIN (WST)	ADJUSZ	:-999.2500	US/F	30479.7 - 0
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7 - 0
USER VELOC (WST)	LAYVEL	: 1953.000	M/S	200.000 - 64.0000
		1480.000		64.0000 0

KNEE NUMBER	VERTICAL DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	DRIFT AT KNEE MS	BLOCKSHIFT USED US/F	DELTA-T MINIMUM USED US/F	REDUCTION FACTOR G	EQUIVALENT BLOCKSHIFT US/F
					0			0
2	200.00	179.00	136.00	0	3.83			3.83
3	996.00	975.00	932.00	10.00	2.97			2.97
4	1078.00	1057.00	1014.00	10.80		112.59	.79	-2.54
5	1366.00	1345.00	1302.00	8.40	0			0
6	1973.00	1952.00	1909.00	8.40	1.09			1.09
7	2422.00	2401.00	2358.00	10.00				

ANALYST: M. SANDERS 12-DEC-88 19:36:23 PROGRAM: GADJST 008.E08



VELOCITY REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

ANALYST: M. SANDERS 12-DEC-83 19:36:23 PROGRAM: GADJST 008.E08

SCHLUMBERGER

VELOCITY REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
EKB - ELEVATION OF KELLY BUSHING
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA

SAMPLED

SHOT - SHOT NUMBER
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
DGL - VERTICAL DEPTH RELATIVE TO GROUND LEVEL (USER'S REFERENCE)
SHTM - SHOT TIME (WST)
ADJS - ADJUSTED SONIC TRAVEL TIME
SHDR - DRIFT AT SHOT OR KNEE
REST - RESIDUAL TRAVEL TIME AT KNEE
INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)		(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	: 21.0000	M
ELEV OF SRD AB. MSL(WST)	SRD	: 0	M
ELEVATION OF KELLY BUSHI	EKB	: 21.0000	M
ELEV OF GL AB. SRD(WST)	GL	: -43.0000	M
UNIFORM EARTH VELOCITY	UNERTH	: 2133.60	M/S

(ZONED PARAMETERS)		(VALUE)		(LIMITS)	
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	- 0
USER VELOC (WST)	LAYVEL	: 1953.000	M/S	200.000	- 64.0000
		1480.000		64.0000	0

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

LEVEL NUMBER	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	VERTICAL DEPTH FROM GL M	VERTICAL TRAVEL TIME SRD/GEOPH MS	INTEGRATED ADJUSTED SONIC TIME MS	DRIFT = SHOT TIME - RAW SON MS	RESIDUAL = SHOT TIME - ADJ SON MS	ADJUSTED INTERVAL VELOCITY M/S
1	64.00	43.00	0	29.06	29.06	0	0	1480
2	200.00	179.00	136.00	98.71	98.70	0	.01	1953
3	[illegible]	[illegible]	[illegible]	322.41	322.	[illegible]	[illegible]	[illegible]
4	900.00	879.00	836.00	365.70	364.81	9.66	.90	3015
5	1060.00	1039.00	996.00	416.42	416.25	10.77	.17	3110
6	1160.00	1139.00	1096.00	456.53	455.12	11.45	1.41	2573
7	1366.00	1345.00	1302.00	536.58	536.08	8.87	.49	2544
8	1433.00	1412.00	1369.00	555.49	558.01	5.85	-2.52	3055
9	1538.00	1517.00	1474.00	592.12	592.07	8.42	.05	3084
10	1655.00	1634.00	1591.00	628.31	627.65	9.04	.67	3288
11	1775.00	1754.00	1711.00	661.43	662.57	7.24	-1.14	3436
12	1862.00	1841.00	1798.00	687.76	687.26	8.87	.50	3523
13	1997.00	1976.00	1933.00	725.67	725.69	8.44	-.02	3513
14	2105.00	2084.00	2041.00	756.02	755.19	9.68	.84	3661
15	2298.00	2277.00	2234.00	806.83	805.85	10.51	.98	3809
16	2422.00	2401.00	2358.00	837.63	838.69	8.90	-1.06	3776

TIME / DEPTH

TIME/DEPTH

From W.C.R Vol 2

ANALYST: M. SANDERS

12-DEC-88 19:40:42 PROGRAM: GTRFRM 001.E12

SCHLUMBERGER

TIME CONVERTED VELOCITY REPORT

COMPANY : ESSO AUSTRALIA LTD
WELL : TORSK #1
FIELD : WILDCAT
COUNTRY : AUSTRALIA
REFERENCE: 569262

LONG DEFINITIONS

GLOBAL

KB - ELEVATION OF THE KELLY-BUSHING ABOVE MSL OR MWL
SRD - ELEVATION OF THE SEISMIC REFERENCE DATUM ABOVE MSL OR MWL
GL - ELEVATION OF USER'S REFERENCE (GENERALLY GROUND LEVEL) ABOVE SRD
UNERTH - UNIFORM EARTH VELOCITY (GTRFRM)
UNFDEN - UNIFORM DENSITY VALUE

MATRIX

MVODIS - MOVE-OUT DISTANCE FROM BOREHOLE

ZONE

LOFVEL - LAYER OPTION FLAG FOR VELOCITY: -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYVEL - USER SUPPLIED VELOCITY DATA
LOFDEN - LAYER OPTION FLAG FOR DENSITY : -1=NONE; 0=UNIFORM; 1=UNIFORM+LAYER
LAYDEN - USER SUPPLIED DENSITY DATA

SAMPLED

TWOT - TWO WAY TRAVEL TIME (RELATIVE TO THE SEISMIC REFERENCE
DKB - MEASURED DEPTH FROM KELLY-BUSHING
DSRD - DEPTH FROM SRD
AVGV - AVERAGE SEISMIC VELOCITY
RMSV - ROOT MEAN SQUARE VELOCITY (SEISMIC)
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
MVOT - NORMAL MOVE-OUT
INTV - INTERNAL VELOCITY, AVERAGE

(GLOBAL PARAMETERS)			(VALUE)	
ELEV OF KB AB. MSL (WST)	KB	:	21.0000	M
ELEV OF SRD AB. MSL(WST)	SRD	:	0	M
ELEV OF GL AB. SRD(WST)	GL	:	-43.0000	M
UNIFORM EARTH VELOCITY	UNERTH	:	2133.60	M/S
UNIFORM DENSITY VALUE	UNFDEN	:	2.30000	G/C3

(MATRIX PARAMETERS)

	MVOUT DIST M
1	914.4
2	1371.6
3	1828.8

(ZONED PARAMETERS)		(VALUE)		(LIMITS)		
LAYER OPTION FLAG VELOC	LOFVEL	: 1.000000		30479.7	-	0
USER VELOC (WST)	LAYVEL	: 1953.000	M/S	300.000	-	64.0000
		1430.000		64.0000		0
LAYER OPTION FLAG DENS	LOFDEN	:-1.000000		30479.7	-	0
USER SUPPLIED DENSITY DA	LAYDEN	:-999.2500	G/C3	30479.7	-	0

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1480
0	21.00	0						1480
2.00	22.48	1.48	1480	1480	615.84	924.76	1233.68	1480
4.00	23.96	2.96	1480	1480	613.85	922.77	1231.68	1480
6.00	25.44	4.44	1480	1480	611.87	920.78	1229.69	1480
8.00	26.92	5.92	1480	1480	609.89	918.79	1227.70	1480
10.00	28.40	7.40	1480	1480	607.92	916.81	1225.72	1480
12.00	29.88	8.88	1480	1480	605.95	914.83	1223.73	1480
14.00	31.36	10.36	1480	1480	604.00	912.86	1221.75	1480
16.00	32.84	11.84	1480	1480	602.05	910.89	1219.78	1480
18.00	34.32	13.32	1480	1480	600.10	908.93	1217.81	1480
20.00	35.80	14.80	1480	1480	598.16	906.97	1215.84	1480
22.00	37.28	16.28	1480	1480	596.23	905.02	1213.87	1480
24.00	38.76	17.76	1480	1480	594.30	903.07	1211.91	1480
26.00	40.24	19.24	1480	1480	592.38	901.12	1209.95	1480
28.00	41.72	20.72	1480	1480	590.47	899.18	1207.99	1480
30.00	43.20	22.20	1480	1480	588.57	897.24	1206.04	1480
32.00	44.68	23.68	1480	1480	586.67	895.31	1204.09	1480
34.00	46.16	25.16	1480	1480	584.77	893.38	1202.14	1480
36.00	47.64	26.64	1480	1480	582.89	891.46	1200.20	1480
38.00	49.12	28.12	1480	1480	581.01	889.54	1198.26	1480
40.00	50.60	29.60	1480	1480	579.13	887.62	1196.32	1480
42.00	52.08	31.08	1480	1480	577.26	885.71	1194.39	1480
44.00	53.56	32.56	1480	1480	575.40	883.80	1192.46	1480
46.00	55.04	34.04	1480	1480	573.55	881.90	1190.53	

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1480
48.00	56.52	35.52	1480	1480	571.70	880.00	1188.61	
								1480
50.00	58.00	37.00	1480	1480	569.86	878.10	1186.69	
								1480
52.00	59.48	38.48	1480	1480	568.02	876.21	1184.77	
								1480
54.00	60.96	39.96	1480	1480	566.19	874.33	1182.85	
								1480
56.00	62.44	41.44	1480	1480	564.37	872.45	1180.94	
								1480
58.00	63.92	42.92	1480	1480	562.53			
								1934
60.00	65.85	44.85	1495	1497	553.61	857.97	1162.82	
								1953
62.00	67.81	46.81	1510	1514	545.06	845.95	1147.37	
								1953
64.00	69.76	48.76	1524	1530	537.15	834.88	1133.17	
								1953
66.00	71.71	50.71	1537	1544	529.78	824.62	1120.06	
								1953
68.00	73.66	52.66	1549	1558	522.90	815.08	1107.91	
								1953
70.00	75.62	54.62	1560	1570	516.43	806.16	1096.58	
								1953
72.00	77.57	56.57	1571	1582	510.35	797.80	1085.99	
								1953
74.00	79.52	58.52	1582	1593	504.59	789.93	1076.06	
								1953
76.00	81.47	60.47	1591	1604	499.13	782.51	1066.71	
								1953
78.00	83.43	62.43	1601	1614	493.94	775.47	1057.88	
								1953
80.00	85.38	64.38	1609	1623	489.00	768.80	1049.53	
								1953
82.00	87.33	66.33	1618	1632	484.27	762.44	1041.59	
								1953
84.00	89.28	68.28	1626	1640	479.74	756.37	1034.05	
								1953
86.00	91.24	70.24	1633	1648	475.39	750.57	1026.85	
								1953
88.00	93.19	72.19	1641	1656	471.20	745.02	1019.97	
								1953
90.00	95.14	74.14	1648	1663	467.17	739.68	1013.39	
								1953
92.00	97.09	76.09	1654	1670	463.28	734.55	1007.07	
								1953
94.00	99.05	78.05	1661	1676	459.52	729.60	1001.00	

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
96.00	101.00	80.00	1667	1683	455.88	724.83	995.16	1953
98.00	102.95	81.95	1672	1688	452.35	720.22	989.53	1953
100.00	104.90	83.90	1678	1694	448.92	715.76	984.09	1953
102.00	106.86	85.86	1683	1700	445.59	711.43	978.84	1953
104.00	108.81	87.81	1689	1705	442.35	707.24	973.75	1953
106.00	110.76	89.76	1694	1710	439.19	703.16	968.82	1953
108.00	112.71	91.71	1698	1715	436.12	699.19	964.04	1953
110.00	114.67	93.67	1703	1719	433.11	695.34	959.39	1953
112.00	116.62	95.62	1707	1724	430.18	691.58	954.87	1953
114.00	118.57	97.57	1712	1728	427.32	687.91	950.47	1953
116.00	120.52	99.52	1716	1732	424.51	684.33	946.19	1953
118.00	122.48	101.48	1720	1736	421.77	680.83	942.01	1953
120.00	124.43	103.43	1724	1740	419.08	677.41	937.93	1953
122.00	126.38	105.38	1728	1744	416.44	674.06	933.95	1953
124.00	128.33	107.33	1731	1747	413.86	670.78	930.05	1953
126.00	130.29	109.29	1735	1751	411.32	667.57	926.24	1953
128.00	132.24	111.24	1738	1754	408.83	664.42	922.51	1953
130.00	134.19	113.19	1741	1757	406.38	661.33	918.86	1953
132.00	136.14	115.14	1745	1760	403.97	658.30	915.28	1953
134.00	138.10	117.10	1748	1763	401.61	655.32	911.77	1953
136.00	140.05	119.05	1751	1766	399.28	652.39	908.32	1953
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
140.00	143.95	122.95	1756	1772	394.73	646.68	901.61	1953
142.00	145.91	124.91	1759	1774	392.51	643.89	898.34	1953

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								1952
144.00	147.86	126.86	1762	1777	390.32	641.14	895.12	1953
146.00	149.81	128.81	1765	1780	388.16	638.44	891.96	1953
148.00	151.76	130.76	1767	1782	386.03	635.77	888.85	1953
150.00	153.72	132.72	1770	1784	383.93	633.14	885.78	1953
152.00	155.67	134.67	1772	1787	381.86	630.55	882.76	1953
154.00	157.62	136.62	1774	1789	379.82	628.00	879.78	1953
156.00	159.57	138.57	1777	1791	377.80	625.47	876.84	1953
158.00	161.53	140.53	1779	1793	375.81	622.98	873.95	1952
160.00	163.48	142.48	1781	1795	373.84	620.53	871.09	1953
162.00	165.43	144.43	1783	1797	371.90	618.10	868.27	1953
164.00	167.38	146.38	1785	1799	369.98	615.70	865.49	1952
166.00	169.34	148.34	1787	1801	368.08	613.33	862.74	1953
168.00	171.29	150.29	1789	1803	366.20	610.98	860.02	1953
170.00	173.24	152.24	1791	1805	364.35	608.66	857.34	1953
172.00	175.19	154.19	1793	1807	362.52	606.37	854.68	1953
174.00	177.15	156.15	1795	1809	360.70	604.10	852.06	1953
176.00	179.10	158.10	1797	1810	358.91	601.86	849.46	1953
178.00	181.05	160.05	1798	1812	357.13	599.64	846.90	1953
180.00	183.00	162.00	1800	1814	355.38	597.44	844.36	1952
182.00	184.96	163.96	1802	1815	353.64	595.26	841.84	1953
184.00	186.91	165.91	1803	1817	351.92	593.11	839.36	1953
186.00	188.86	167.86	1805	1818	350.21	590.97	836.89	1952
188.00	190.81	169.81	1807	1820	348.53	588.86	834.45	1953
190.00	192.77	171.77	1808	1821	346.86	586.76	832.04	

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
192.00	194.72	173.72	1810	1823	345.20	584.69	829.64	1953
194.00	196.67	175.67	1811	1824	343.57	582.63	827.27	1953
196.00	198.63	177.63	1812	1825	341.94	580.59	824.92	1952
[illegible]	[illegible]	[illegible]	1814	1827	340.33	[illegible]	[illegible].62	1948
200.00	202.57	181.57	1816	1828	338.64	576.40	820.06	1996
202.00	204.79	183.79	1820	1833	336.31	573.23	816.18	2217
204.00	206.89	185.89	1822	1835	334.33	570.62	813.04	2106
206.00	209.02	188.02	1825	1839	332.32	567.94	809.81	2130
208.00	211.03	190.03	1827	1840	330.66	565.80	807.29	2011
210.00	212.94	191.94	1828	1841	329.28	564.09	805.37	1906
212.00	215.02	194.02	1830	1843	327.47	561.71	802.53	2078
214.00	217.18	196.18	1833	1847	325.45	559.00	799.24	2164
216.00	219.34	198.34	1836	1850	323.49	556.36	796.04	2157
218.00	221.50	200.50	1839	1853	321.53	553.72	792.83	2165
220.00	223.68	202.68	1843	1856	319.57	551.08	789.63	2172
222.00	225.85	204.85	1846	1859	317.64	548.46	786.45	2175
224.00	228.00	207.00	1848	1862	315.79	545.98	783.45	2151
226.00	230.16	209.16	1851	1865	313.94	543.49	780.44	2159
228.00	232.33	211.33	1854	1868	312.10	541.00	777.43	2167
230.00	234.48	213.48	1856	1870	310.33	538.62	774.55	2148
232.00	236.64	215.64	1859	1873	308.53	536.18	771.60	2168
234.00	238.82	217.82	1862	1876	306.74	533.75	768.65	2174
236.00	241.34	220.34	1867	1882	304.12	530.01	763.91	2519
238.00	243.44	222.44	1869	1884	302.54	527.90	761.40	2105

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
240.00	245.64	224.64	1872	1887	300.77	525.49	758.47	2197
242.00	247.84	226.84	1875	1890	299.01	523.09	755.55	2202
244.00	250.01	229.01	1877	1892	297.36	520.84	752.82	2167
246.00	252.17	231.17	1879	1895	295.72	518.63	750.15	2163
248.00	254.36	233.36	1882	1897	294.05	516.34	747.38	2191
250.00	256.57	235.57	1885	1900	292.37	514.04	744.57	2205
252.00	258.80	237.80	1887	1903	290.65	511.67	741.67	2232
254.00	261.07	240.07	1890	1906	288.88	509.19	738.63	2271
256.00	263.38	242.38	1894	1909	287.04	506.63	735.45	2309
258.00	265.69	244.69	1897	1913	285.24	504.09	732.32	2308
260.00	267.94	246.94	1900	1916	283.56	501.77	729.47	2254
262.00	270.25	249.25	1903	1919	281.79	499.28	726.39	2313
264.00	272.63	251.63	1906	1923	279.93	496.63	723.09	2373
266.00	274.87	253.87	1909	1925	278.33	494.41	720.37	2247
268.00	277.14	256.14	1912	1928	276.71	492.14	717.58	2270
270.00	279.36	258.36	1914	1931	275.21	490.06	715.04	2216
272.00	281.64	260.64	1916	1933	273.61	487.82	712.28	2279
274.00	283.98	262.98	1920	1937	271.91	485.41	709.29	2342
276.00	286.25	265.25	1922	1939	270.38	483.26	706.64	2264
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2220
280.00	290.71	269.71	1926	1944	267.48	479.21	701.69	2242
282.00	292.96	271.96	1929	1946	266.02	477.16	699.19	2249
284.00	295.17	274.17	1931	1948	264.63	475.22	696.83	2216
286.00	297.42	276.42	1933	1950	263.21	473.23	694.38	2244

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2251
288.00	299.67	278.67	1935	1952	261.80	471.24	691.94	2304
290.00	301.97	280.97	1938	1955	260.31	469.12	689.32	2373
292.00	304.34	283.34	1941	1958	258.72	466.84	686.47	2450
294.00	306.79	285.79	1944	1962	257.03	464.38	683.36	2411
296.00	309.20	288.20	1947	1965	255.42	462.05	680.44	2340
298.00	311.54	290.54	1950	1968	253.95	459.93	677.80	2379
300.00	313.92	292.92	1953	1971	252.44	457.74	675.06	2421
302.00	316.35	295.35	1956	1975	250.87	455.46	672.19	2388
304.00	318.73	297.73	1959	1978	249.38	453.29	669.48	2375
306.00	321.11	300.11	1961	1980	247.92	451.18	666.84	2363
308.00	323.47	302.47	1964	1983	246.50	449.12	664.26	2362
310.00	325.83	304.83	1967	1986	245.10	447.09	661.72	2381
312.00	328.22	307.22	1969	1989	243.69	445.03	659.14	2336
314.00	330.55	309.55	1972	1991	242.35	443.10	656.73	2369
316.00	332.92	311.92	1974	1994	240.99	441.11	654.24	2439
318.00	335.36	314.36	1977	1997	239.54	438.97	651.55	2324
320.00	337.68	316.68	1979	1999	238.26	437.12	649.25	2390
322.00	340.07	319.07	1982	2002	236.92	435.14	646.76	2431
324.00	342.50	321.50	1985	2005	235.52	433.09	644.17	2476
326.00	344.98	323.98	1988	2008	234.09	430.95	641.45	2443
328.00	347.42	326.42	1990	2011	232.71	428.92	638.88	2610
330.00	350.03	329.03	1994	2015	231.13	426.51	635.79	2442
332.00	352.48	331.48	1997	2018	229.79	424.53	633.27	2512
334.00	354.99	333.99	2000	2021	228.37	422.40	630.56	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
336.00	357.59	336.59	2004	2025	226.85	420.10	627.60	2604
[illegible]	[illegible]	[illegible]	2007	2028	[illegible]	[illegible]	[illegible]	2540
340.00	362.89	341.89	2011	2033	223.75	415.36	621.48	2755
342.00	365.13	344.13	2012	2035	222.73	413.88	619.65	2245
344.00	367.68	346.68	2016	2038	221.35	411.80	616.98	2548
346.00	370.04	349.04	2018	2040	220.22	410.12	614.87	2363
348.00	372.59	351.59	2021	2043	218.87	408.08	612.25	2549
350.00	375.55	354.55	2026	2050	217.01	405.15	608.39	2955
352.00	378.14	357.14	2029	2053	215.65	403.06	605.70	2598
354.00	380.69	359.69	2032	2056	214.36	401.11	603.18	2545
356.00	383.18	362.18	2035	2059	213.16	399.29	600.86	2485
358.00	385.66	364.66	2037	2062	211.97	397.48	598.54	2489
360.00	388.75	367.75	2043	2069	210.04	394.41	594.46	3090
362.00	391.51	370.51	2047	2073	208.58	392.13	591.48	2753
364.00	394.18	373.18	2050	2077	207.24	390.04	588.77	2673
366.00	397.15	376.15	2055	2083	205.55	387.37	585.22	2969
368.00	400.19	379.19	2061	2089	203.81	384.59	581.51	3042
370.00	403.13	382.13	2066	2095	202.21	382.06	578.16	2940
372.00	405.81	384.81	2069	2098	200.95	380.08	575.59	2674
374.00	408.28	387.28	2071	2101	199.91	378.49	573.55	2469
376.00	411.15	390.15	2075	2105	198.46	376.19	570.51	2870
378.00	413.78	392.78	2078	2109	197.28	374.36	568.13	2630
380.00	416.28	395.28	2080	2111	196.25	372.76	566.08	2501
382.00	418.69	397.69	2082	2112	195.31	371.32	564.24	2417

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								2540
384.00	421.23	400.23	2085	2115	194.26	369.69	562.13	2597
386.00	423.83	402.83	2087	2118	193.17	367.98	559.91	2582
388.00	426.41	405.41	2090	2120	192.10	366.31	557.74	2670
390.00	429.08	408.08	2093	2124	190.96	364.51	555.39	2700
392.00	431.78	410.78	2096	2127	189.81	362.68	552.98	2697
394.00	434.48	413.48	2099	2130	188.67	360.87	550.61	2636
396.00	437.11	416.11	2102	2133	187.60	359.18	548.41	2491
398.00	439.61	418.61	2104	2135	186.67	357.74	546.54	2368
400.00	441.97	420.97	2105	2136	185.85	356.48	544.94	2679
402.00	444.65	423.65	2108	2139	184.78	354.76	542.68	2724
404.00	447.38	426.38	2111	2143	183.67	352.99	540.35	2759
406.00	450.13	429.13	2114	2146	182.55	351.19	537.96	2639
408.00	452.77	431.77	2117	2149	181.55	349.59	535.86	2524
410.00	455.30	434.30	2119	2151	180.65	348.17	534.02	2470
412.00	457.77	436.77	2120	2152	179.80	346.84	532.30	2768
414.00	460.54	439.54	2123	2156	178.72	345.09	529.97	2924
416.00	463.46	442.46	2127	2160	177.51	343.11	527.31	3004
418.00	466.46	445.46	2131	2165	176.24	341.03	524.51	2882
420.00	469.35	448.35	2135	2169	175.10	339.16	522.01	2791
422.00	472.14	451.14	2138	2172	174.05	337.45	519.73	2698
424.00	474.83	453.83	2141	2175	173.09	335.90	517.67	2636
426.00	477.47	456.47	2143	2177	172.19	334.44	515.75	2617
428.00	480.09	459.09	2145	2180	171.31	333.02	513.88	2714
430.00	482.80	461.80	2148	2182	170.37	331.49	511.84	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
432.00	485.47	464.47	2150	2185	169.47	330.03	509.91	2664
434.00	488.12	467.12	2153	2187	168.59	328.60	508.01	2654
436.00	490.71	469.71	2155	2189	167.76	327.26	506.25	2593
438.00	493.30	472.30	2157	2191	166.95	325.94	504.51	2587
440.00	495.80	474.80	2158	2193	166.20	324.74	502.93	2502
442.00	498.24	477.24	2159	2194	165.50	323.62	501.48	2436
444.00	500.71	479.71	2161	2195	164.79	322.47	499.97	2472
446.00	503.14	482.14	2162	2196	164.10	321.37	498.53	2436
448.00	505.69	484.69	2164	2198	163.35	320.14	496.91	2548
450.00	508.17	487.17	2165	2199	162.64	319.01	495.43	2475
452.00	511.06	490.06	2168	2203	161.66	317.36	493.20	2897
454.00	513.34	492.34	2169	2203	161.09	316.46	492.04	2278
456.00	515.80	494.80	2170	2205	160.42	315.38	490.62	2456
458.00	518.08	497.08	2171	2205	159.86	314.49	489.48	2278
460.00	520.50	499.50	2172	2206	159.22	313.44	488.11	2426
462.00	522.99	501.99	2173	2207	158.54	312.34	486.65	2491
464.00	525.52	504.52	2175	2209	157.85	311.21	485.15	2523
466.00	528.11	507.11	2176	2210	157.12	310.00	483.54	2597
468.00	530.70	509.70	2178	2212	156.40	308.81	481.96	2582
470.00	533.26	512.26	2180	2214	155.70	307.66	480.42	2566
472.00	535.88	514.88	2182	2216	154.97	306.45	478.80	2621
474.00	538.61	517.61	2184	2218	154.19	305.13	477.03	2724
476.00	540.91	519.91	2185	2218	153.65	304.27	475.90	2307
478.00	543.47	522.47	2186	2220	152.98	303.16	474.42	2556

TWO-WAY TRAVEL TIME FROM SRD	MEASURED DEPTH FROM KB	VERTICAL DEPTH FROM SRD	AVERAGE VELOCITY SRD/GEO	RMS VELOCITY	FIRST NORMAL MOVEOUT	SECOND NORMAL MOVEOUT	THIRD NORMAL MOVEOUT	INTERVAL VELOCITY
480.00	546.25	525.25	2189	2223	152.18	301.80	472.57	2786
482.00	549.13	528.13	2191	2226	151.32	300.35	470.59	2879
484.00	551.59	530.59	2193	2227	150.73	299.36	469.29	2453
486.00	554.28	533.28	2195	2229	150.00	298.14	467.63	2693
488.00	556.48	535.48	2195	2229	149.55	297.41	466.69	2201
490.00	558.96	537.96	2196	2230	148.95	296.42	465.37	2481
492.00	561.82	540.82	2198	2233	148.14	295.04	463.48	2857
494.00	564.76	543.76	2201	2236	147.30	293.59	461.48	2937
496.00	567.79	546.79	2205	2240	146.40	292.04	459.34	3031
498.00	570.70	549.70	2208	2243	145.59	290.64	457.41	2913
500.00	573.69	552.69	2211	2246	144.74	289.18	455.38	2988
502.00	576.61	555.61	2214	2250	143.94	287.80	453.48	2920
504.00	579.53	558.53	2216	2253	143.15	286.43	451.59	2923
506.00	582.56	561.56	2220	2256	142.30	284.96	449.55	3027
508.00	584.69	563.69	2219	2256	141.92	284.34	448.76	2131
510.00	586.70	565.70	2218	2255	141.59	283.82	448.10	2009
512.00	588.72	567.72	2218	2254	141.25	283.28	447.42	2025
514.00	590.88	569.88	2217	2254	140.86	282.65	446.61	2153
516.00	592.95	571.95	2217	2253	140.50	282.08	445.89	2072
518.00	595.47	574.47	2218	2254	139.95	281.14	444.62	2526
520.00	597.44	576.44	2217	2253	139.65	280.65	444.02	1963
522.00	599.96	578.96	2218	2254	139.10	279.73	442.76	2525
524.00	602.30	581.30	2219	2254	138.65	278.97	441.75	2336
526.00	604.68	583.68	2219	2255	138.18	278.17	440.69	2378

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
528.00	606.75	585.75	2219	2254	137.83	277.62	439.98	2075
530.00	609.72	588.72	2222	2257	137.08	276.30	438.13	2968
532.00	612.28	591.28	2223	2259	136.54	275.37	436.86	2561
534.00	614.83	593.83	2224	2260	136.00	274.45	435.61	2556
536.00	617.38	596.38	2225	2261	135.48	273.54	434.38	2542
538.00	620.39	599.39	2228	2264	134.72	272.22	432.52	3013
540.00	622.74	601.74	2229	2264	134.29	271.48	431.53	2352
542.00	625.29	604.29	2230	2266	133.77	270.59	430.31	2548
544.00	627.84	606.84	2231	2267	133.26	269.70	429.10	2554
546.00	630.62	609.62	2233	2269	132.65	268.63	427.60	2781
548.00	633.83	612.83	2237	2273	131.82	267.15	425.51	3210
550.00	635.70	614.70	2235	2272	131.57	266.76	425.02	1869
552.00	638.40	617.40	2237	2273	131.01	265.78	423.67	2693
554.00	641.23	620.23	2239	2276	130.39	264.69	422.13	2838
556.00	643.81	622.81	2240	2277	129.89	263.91	420.93	2581
558.00	646.48	625.48	2242	2278	129.36	262.87	419.63	[illegible]
560.00	649.24	628.24	2244	2280	128.79	261.87	418.23	2756
562.00	652.05	631.05	2246	2282	128.20	260.83	416.77	2810
564.00	655.03	634.03	2248	2285	127.54	259.65	415.10	2983
566.00	658.09	637.09	2251	2288	126.85	258.41	413.34	3060
568.00	661.14	640.14	2254	2291	126.17	257.19	411.60	3051
570.00	664.16	643.16	2257	2294	125.51	256.01	409.92	3022
572.00	667.14	646.14	2259	2297	124.88	254.87	408.32	2974
574.00	670.16	649.16	2262	2300	124.24	253.72	406.67	3019

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
576.00	673.17	652.17	2264	2303	123.60	252.57	405.04	3014
578.00	676.18	655.18	2267	2306	122.98	251.44	403.44	3008
580.00	679.20	658.20	2270	2308	122.35	250.31	401.83	3020
582.00	682.20	661.20	2272	2311	121.74	249.20	400.25	3007
584.00	685.17	664.17	2275	2314	121.15	248.14	398.74	2961
586.00	688.07	667.07	2277	2316	120.59	247.14	397.31	2900
588.00	691.07	670.07	2279	2319	120.00	246.06	395.77	3004
590.00	693.94	672.94	2281	2321	119.46	245.09	394.40	2866
592.00	696.66	675.66	2283	2322	118.99	244.24	393.20	2723
594.00	699.22	678.22	2284	2323	118.58	243.51	392.18	2556
596.00	702.51	681.51	2287	2327	117.88	242.23	390.33	3293
598.00	705.28	684.28	2289	2329	117.40	241.36	389.10	2771
600.00	707.98	686.98	2290	2330	116.95	240.55	387.96	2699
602.00	710.60	689.60	2291	2331	116.53	239.80	386.90	2621
604.00	713.39	692.39	2293	2333	116.05	238.94	385.67	2789
606.00	716.34	695.34	2295	2335	115.52	237.97	384.27	2956
608.00	719.31	698.31	2297	2337	114.99	236.99	382.88	2964
610.00	722.14	701.14	2299	2339	114.51	236.12	381.64	2831
612.00	725.05	704.05	2301	2341	114.00	235.20	380.32	2910
614.00	728.01	707.01	2303	2344	113.49	234.25	378.95	2961
616.00	731.18	710.18	2306	2347	112.90	233.16	377.37	3168
618.00	734.28	713.28	2308	2350	112.33	232.13	375.87	3106
620.00	736.90	715.90	2309	2350	111.95	231.43	374.88	2617
622.00	739.61	718.61	2311	2352	111.53	230.68	373.81	2706

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
624.00	742.31	721.31	2312	2353	111.13	229.93	372.75	2698
626.00	745.28	724.28	2314	2355	110.63	229.02	371.43	2974
628.00	748.27	727.27	2316	2357	110.13	228.10	370.10	2988
630.00	751.10	730.10	2318	2359	109.69	227.29	368.94	2829
632.00	753.81	732.81	2319	2360	109.29	226.56	367.90	2712
634.00	756.55	735.55	2320	2362	108.89	225.82	366.83	2745
636.00	759.59	738.59	2323	2364	108.39	224.89	365.48	3038
638.00	762.27	741.27	2324	2365	108.01	224.20	364.49	2682
640.00	764.99	743.99	2325	2366	107.62	223.48	363.46	2719
642.00	767.98	746.98	2327	2368	107.15	222.60	362.18	2993
644.00	770.97	749.97	2329	2371	106.68	221.74	360.92	2984
646.00	773.89	752.89	2331	2372	106.24	220.92	359.73	2919
648.00	776.74	755.74	2333	2374	105.82	220.14	358.61	2855
650.00	779.67	758.67	2334	2376	105.38	219.33	357.43	2927
652.00	782.50	761.50	2336	2378	104.98	218.58	356.35	2829
654.00	785.07	764.07	2337	2378	104.65	217.98	355.49	2571
656.00	787.67	766.67	2337	2379	104.32	217.37	354.61	2600
658.00	790.45	769.45	2339	2380	103.94	216.66	353.58	2782
660.00	793.29	772.29	2340	2382	103.54	215.92	352.51	2839
662.00	796.08	775.08	2342	2383	103.16	215.22	351.49	2788
664.00	798.67	777.67	2342	2384	102.84	214.62	350.64	2595
666.00	801.63	780.63	2344	2386	102.42	213.83	349.48	2960
668.00	804.32	783.32	2345	2387	102.08	213.20	348.56	2686
670.00	807.33	786.33	2347	2389	101.64	212.38	347.36	3014

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
672.00	810.22	789.22	2349	2390	101.25	211.64	346.29	2889
674.00	813.26	792.26	2351	2393	100.82	210.83	345.09	3034
676.00	816.58	795.58	2354	2396	100.30	209.85	343.63	3320
678.00	819.73	798.73	2356	2398	99.84	208.98	342.34	3152
680.00	823.22	802.22	2359	2402	99.28	207.91	340.74	3489
682.00	826.72	805.72	2363	2406	98.72	206.83	339.14	3507
684.00	829.97	808.97	2365	2409	98.25	205.93	337.80	3243
686.00	833.17	812.17	2368	2412	97.79	205.06	336.51	3209
688.00	836.52	815.52	2371	2415	97.30	204.12	335.10	3345
690.00	839.78	818.78	2373	2418	96.83	203.23	333.78	3261
692.00	843.04	822.04	2376	2421	96.37	202.35	332.47	3259
694.00	846.16	825.16	2378	2423	95.96	201.56	331.29	3124
696.00	849.09	828.09	2380	2425	95.60	200.87	330.28	2992
698.00	852.08	831.08	2381	2427	95.22	200.16	329.22	3091
700.00	855.17	834.17	2383	2429	94.82	199.40	328.09	2999
702.00	858.17	837.17	2385	2431	94.45	198.69	327.04	3121
704.00	861.29	840.29	2387	2433	94.05	197.93	325.90	3148
706.00	864.44	843.44	2389	2435	93.65	197.16	324.75	3129
708.00	867.57	846.57	2391	2437	93.25	196.40	323.62	3106
710.00	870.68	849.68	2393	2440	92.87	195.66	322.51	3013
712.00	873.69	852.69	2395	2441	92.51	194.97	321.49	2959
714.00	876.65	855.65	2397	2443	92.16	194.31	320.51	3000
716.00	879.65	858.65	2398	2445	91.81	193.64	319.51	3059
718.00	882.71	861.71	2400	2447	91.45	192.94	318.47	

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
720.00	885.68	864.68	2402	2448	91.11	192.29	317.50	2968
722.00	888.61	867.61	2403	2450	90.78	191.67	316.57	2936
724.00	891.47	870.46	2405	2451	90.48	191.08	315.69	2852
726.00	894.32	873.32	2406	2452	90.17	190.49	314.82	2859
728.00	897.30	876.30	2407	2454	89.84	189.86	313.87	2975
730.00	900.74	879.74	2410	2457	89.40	189.00	312.57	3442
732.00	904.10	883.10	2413	2460	88.98	188.18	311.34	3357
734.00	907.24	886.24	2415	2462	88.62	187.49	310.29	3142
736.00	910.22	889.22	2416	2464	88.30	186.87	309.37	2979
738.00	913.58	892.58	2419	2466	87.89	186.07	308.16	3359
740.00	916.95	895.95	2421	2469	87.48	185.28	306.96	3376
742.00	920.20	899.20	2424	2472	87.11	184.55	305.86	3247
744.00	923.87	902.87	2427	2476	86.64	183.62	304.43	3670
746.00	927.72	906.72	2431	2480	86.12	182.60	302.87	3847
748.00	930.99	909.99	2433	2483	85.75	181.88	301.78	3277
750.00	934.09	913.09	2435	2485	85.42	181.25	300.83	3093
752.00	937.28	916.28	2437	2487	85.08	180.58	299.81	3193
754.00	940.47	919.47	2439	2489	84.74	179.91	298.80	3193
756.00	943.61	922.61	2441	2491	84.41	179.27	297.83	3141
758.00	946.60	925.60	2442	2492	84.12	178.71	296.98	2982
760.00	949.70	928.70	2444	2494	83.80	178.09	296.04	3107
762.00	952.54	931.54	2445	2495	83.55	177.59	295.29	2838
764.00	955.19	934.19	2446	2496	83.32	177.16	294.64	2653
766.00	958.71	937.71	2448	2499	82.92	176.37	293.44	3511

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
768.00	962.02	941.02	2451	2501	82.57	175.68	292.39	3315
770.00	965.97	944.97	2454	2506	82.08	174.70	290.87	3945
772.00	969.70	948.70	2458	2510	81.64	173.83	289.53	3739
774.00	973.14	952.14	2460	2513	81.27	173.11	288.42	3431
776.00	976.25	955.25	2462	2515	80.98	172.53	287.54	3117
778.00	980.67	959.67	2467	2521	80.38	171.33	285.67	4414
780.00	983.96	962.96	2469	2524	80.05	170.69	284.69	3292
782.00	988.19	967.19	2474	2529	79.52	169.61	283.02	4236
784.00	992.22	971.22	2478	2534	79.04	168.65	281.53	4026
786.00	996.15	975.15	2481	2539	78.58	167.75	280.13	3934
788.00	999.17	978.17	2483	2540	78.33	167.24	279.35	3016
790.00	1002.17	981.17	2484	2541	78.07	166.74	278.59	2995
792.00	1004.85	983.85	2484	2542	77.87	166.35	278.00	2688
794.00	1007.24	986.24	2484	2541	77.71	166.05	277.55	2384
796.00	1010.11	989.11	2485	2542	77.48	165.60	276.87	2872
798.00	1012.86	991.86	2486	2543	77.28	165.19	276.25	2751
800.00	1015.64	994.64	2487	2544	77.06	164.77	275.62	2779
802.00	1018.11	997.11	2487	2543	76.90	164.45	275.14	2473
804.00	1020.52	999.52	2486	2543	76.74	164.15	274.69	2413
806.00	1023.05	1002.05	2486	2543	76.57	163.82	274.19	2528
808.00	1026.27	1005.27	2488	2545	76.29	163.26	273.33	3213
810.00	1029.17	1008.17	2489	2546	76.06	162.81	272.65	2907
812.00	1031.97	1010.97	2490	2547	75.85	162.40	272.02	2803
814.00	1034.80	1013.80	2491	2547	75.64	161.98	271.39	2822

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
816.00	1037.58	1016.58	2492	2548	75.44	161.58	270.77	2780
818.00	1040.45	1019.45	2493	2549	75.22	161.16	270.12	2873
820.00	1043.35	1022.35	2494	2550	75.00	160.72	269.45	2901
822.00	1046.19	1025.19	2494	2550	74.79	160.31	268.82	2839
824.00	1048.71	1027.71	2494	2550	74.63	159.99	268.34	2519
826.00	1051.25	1030.25	2495	2550	74.47	159.67	267.86	2545
828.00	1053.81	1032.81	2495	2550	74.30	159.34	267.36	2556
830.00	1056.44	1035.44	2495	2550	74.12	159.00	266.84	2635
832.00	1059.24	1038.24	2496	2551	73.93	158.60	266.24	2795
834.00	1062.07	1041.07	2497	2552	73.72	158.21	265.63	2828
836.00	1064.89	1043.89	2497	2552	73.52	157.81	265.02	[illegible]
838.00	1067.94	1046.94	2499	2554	73.29	157.34	264.30	3051
840.00	1070.66	1049.66	2499	2554	73.11	156.98	263.75	2722
842.00	1073.34	1052.34	2500	2554	72.93	156.63	263.22	2676
844.00	1076.28	1055.28	2501	2555	72.72	156.21	262.56	2947
846.00	1078.98	1057.98	2501	2556	72.54	155.86	262.03	2698
848.00	1081.63	1060.63	2501	2556	72.37	155.52	261.51	2645
850.00	1084.24	1063.24	2502	2556	72.21	155.20	261.02	2617
852.00	1086.87	1065.87	2502	2556	72.04	154.87	260.52	2626
854.00	1089.63	1068.63	2503	2557	71.86	154.51	259.96	2759
856.00	1092.36	1071.36	2503	2557	71.68	154.15	259.42	2734
858.00	1095.00	1074.00	2503	2557	71.52	153.83	258.92	2638
860.00	1097.43	1076.43	2503	2557	71.38	153.56	258.51	2426
862.00	1100.06	1079.06	2504	2557	71.22	153.23	258.02	2638

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
864.00	1102.50	1081.50	2503	2557	71.08	152.96	257.61	2432
866.00	1104.96	1083.96	2503	2557	70.94	152.69	257.19	2465
868.00	1107.50	1086.50	2503	2557	70.79	152.39	256.73	2542
870.00	1110.04	1089.04	2504	2557	70.64	152.10	256.29	2536
872.00	1112.64	1091.64	2504	2557	70.49	151.79	255.82	2599
874.00	1115.22	1094.22	2504	2557	70.33	151.49	255.35	2583
876.00	1117.91	1096.91	2504	2557	70.17	151.16	254.85	2687
878.00	1120.42	1099.42	2504	2557	70.03	150.88	254.41	2514
880.00	1122.89	1101.89	2504	2557	69.89	150.61	254.00	2466
882.00	1125.33	1104.33	2504	2557	69.76	150.34	253.60	2442
884.00	1127.83	1106.83	2504	2557	69.62	150.07	253.18	2497
886.00	1130.30	1109.30	2504	2556	69.48	149.80	252.76	2470
888.00	1132.82	1111.82	2504	2556	69.34	149.52	252.33	2524
890.00	1135.20	1114.20	2504	2556	69.22	149.27	251.96	2376
892.00	1137.71	1116.71	2504	2556	69.08	149.00	251.54	2511
894.00	1140.24	1119.24	2504	2556	68.94	148.72	251.11	2526
896.00	1142.53	1121.53	2503	2555	68.82	148.49	250.77	2290
898.00	1144.88	1123.88	2503	2555	68.70	148.25	250.41	2358
900.00	1147.35	1126.35	2503	2555	68.57	147.99	250.00	2472
902.00	1149.82	1128.82	2503	2554	68.44	147.73	249.60	2465
904.00	1152.48	1131.48	2503	2555	68.28	147.42	249.13	2665
906.00	1155.07	1134.07	2503	2555	68.14	147.13	248.68	2589
908.00	1157.50	1136.50	2503	2554	68.01	146.88	248.30	2430
910.00	1159.73	1138.73	2503	2554	67.91	146.68	247.99	2229

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
912.00	1162.25	1141.25	2503	2554	67.78	146.41	247.57	2521
914.00	1164.50	1143.50	2502	2553	67.67	146.20	247.25	2247
916.00	1166.24	1145.24	2501	2552	67.61	146.08	247.09	1735
918.00	1168.47	1147.47	2500	2551	67.50	145.88	246.78	2237
920.00	1170.84	1149.84	2500	2551	67.39	145.64	246.42	2369
922.00	1173.49	1152.49	2500	2551	67.24	145.35	245.96	2645
924.00	1176.00	1155.00	2500	2551	67.11	145.09	245.55	2510
926.00	1178.51	1157.51	2500	2551	66.98	144.82	245.15	2517
928.00	1181.29	1160.29	2501	2551	66.82	144.50	244.64	2778
930.00	1183.79	1162.79	2501	2551	66.69	144.24	244.24	2500
932.00	1186.33	1165.33	2501	2551	66.56	143.98	243.83	2539
934.00	1188.85	1167.85	2501	2551	66.43	143.72	243.43	2517
936.00	1191.42	1170.42	2501	2551	66.29	143.45	243.01	2569
938.00	1193.98	1172.98	2501	2551	66.16	143.18	242.60	2564
940.00	1196.54	1175.54	2501	2551	66.03	142.91	242.18	2559
942.00	1199.17	1178.17	2501	2551	65.89	142.63	241.74	2633
944.00	1201.69	1180.69	2501	2551	65.76	142.38	241.35	2512
946.00	1204.30	1183.30	2502	2551	65.62	142.10	240.92	2615
948.00	1206.76	1185.76	2502	2551	65.50	141.86	240.55	2461
950.00	1209.25	1188.25	2502	2551	65.38	141.61	240.16	2484
952.00	1211.70	1190.70	2501	2551	65.26	[illegible]	[illegible]	[illegible]
954.00	1214.20	1193.20	[illegible]	[illegible]	[illegible]	141.13	239.41	2497
956.00	1216.[illegible]	1195.[illegible]	2501	2550	65.02	140.88	239.03	2495
958.00	1219.05	1198.05	2501	2550	64.91	140.67	238.69	2361

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
960.00	1221.62	1200.62	2501	2550	64.78	140.41	238.29	2565
962.00	1224.14	1203.14	2501	2550	64.66	140.16	237.91	2519
964.00	1226.69	1205.69	2501	2550	64.53	139.91	237.51	2548
966.00	1229.14	1208.14	2501	2550	64.42	139.67	237.15	2450
968.00	1231.53	1210.53	2501	2550	64.31	139.45	236.81	2395
970.00	1234.05	1213.05	2501	2549	64.19	139.21	236.43	2513
972.00	1236.38	1215.38	2501	2549	64.08	139.00	236.11	2334
974.00	1238.64	1217.64	2500	2548	63.99	138.81	235.81	2259
976.00	1241.01	1220.01	2500	2548	63.88	138.60	235.48	2154
978.00	1243.17	1222.17	2499	2547	63.79	138.42	235.21	2061
980.00	1245.23	1224.23	2498	2546	63.72	138.27	234.98	2479
982.00	1247.71	1226.71	2498	2546	63.60	138.06	234.61	2696
984.00	1250.40	1229.40	2499	2547	63.46	137.76	234.18	2320
986.00	1252.72	1231.72	2498	2546	63.36	137.55	233.86	2473
988.00	1255.20	1234.20	2498	2546	63.25	137.33	233.51	2666
990.00	1257.86	1236.86	2499	2546	63.12	137.06	233.08	2588
992.00	1260.45	1239.45	2499	2546	62.99	136.81	232.69	2806
994.00	1263.26	1242.26	2500	2547	62.85	136.51	232.22	2877
996.00	1266.13	1245.13	2500	2548	62.70	136.20	231.72	2766
998.00	1268.90	1247.90	2501	2548	62.56	135.91	231.27	2846
1000.00	1271.75	1250.75	2501	2549	62.41	135.61	230.79	2726
1002.00	1274.47	1253.47	2502	2549	62.27	135.33	230.36	2625
1004.00	1277.10	1256.10	2502	2549	62.15	135.08	229.96	2690
1006.00	1279.79	1258.79	2503	2550	62.02	134.81	229.54	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1008.00	1282.30	1261.30	2503	2549	61.91	134.58	229.18	2517
1010.00	1284.92	1263.92	2503	2550	61.79	134.34	228.79	2619
1012.00	1287.56	1266.56	2503	2550	61.66	134.08	228.39	2636
1014.00	1290.14	1269.14	2503	2550	61.54	133.84	228.01	2578
1016.00	1292.67	1271.67	2503	2550	61.43	133.62	227.65	2533
1018.00	1295.21	1274.21	2503	2550	61.32	133.3[illegible]	[illegible]	[illegible]
1020.00	1297.86	1276.86	2504	[illegible]	61.20	133.13	226.89	2656
1022.00	1300.45	1279.45	2504	2550	61.08	132.90	226.52	2585
1024.00	1302.96	1281.96	2504	2550	60.97	132.67	226.17	2515
1026.00	1305.49	1284.49	2504	2550	60.86	132.45	225.81	2528
1028.00	1308.09	1287.09	2504	2550	60.74	132.21	225.44	2597
1030.00	1310.64	1289.64	2504	2550	60.63	131.98	225.08	2548
1032.00	1313.29	1292.29	2504	2550	60.51	131.74	224.69	2654
1034.00	1315.90	1294.90	2505	2550	60.40	131.50	224.31	2612
1036.00	1318.50	1297.50	2505	2550	60.28	131.26	223.94	2596
1038.00	1321.03	1300.03	2505	2550	60.17	131.04	223.59	2528
1040.00	1323.52	1302.52	2505	2550	60.07	130.83	223.26	2490
1042.00	1325.88	1304.88	2505	2550	59.98	130.64	222.96	2359
1044.00	1328.47	1307.47	2505	2550	59.86	130.41	222.59	2593
1046.00	1330.92	1309.92	2505	2550	59.76	130.21	222.27	2450
1048.00	1333.79	1312.79	2505	2551	59.63	129.92	221.82	2870
1050.00	1336.34	1315.34	2505	2551	59.52	129.70	221.47	2549
1052.00	1339.18	1318.18	2506	2551	59.39	129.43	221.03	2843
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3117

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1056.00	1345.16	1324.16	2508	2553	59.09	128.82	220.05	2858
1058.00	1347.87	1326.87	2508	2553	58.97	128.57	219.66	2712
1060.00	1350.42	1329.42	2508	2553	58.87	128.36	219.32	2548
1062.00	1352.93	1331.93	2508	2553	58.77	128.15	218.99	2512
1064.00	1355.55	1334.55	2509	2553	58.66	127.92	218.63	2620
1066.00	1358.31	1337.31	2509	2554	58.53	127.67	218.22	2761
1068.00	1361.00	1340.00	2509	2554	58.42	127.43	217.84	2687
1070.00	1363.45	1342.45	2509	2554	58.32	127.24	217.53	2449
1072.00	1365.81	1344.81	2509	2553	58.23	127.06	217.25	2358
1074.00	1369.19	1348.19	2511	2555	58.05	126.68	216.64	3381
1076.00	1372.15	1351.15	2511	2556	57.91	126.39	216.18	2960
1078.00	1375.18	1354.18	2512	2557	57.77	126.09	215.69	3033
1080.00	1378.14	1357.14	2513	2558	57.63	125.81	215.23	2960
1082.00	1381.00	1360.00	2514	2558	57.51	125.54	214.81	2862
1084.00	1383.96	1362.96	2515	2559	57.37	125.26	214.36	2963
1086.00	1387.00	1366.00	2516	2560	57.23	124.96	213.88	3037
1088.00	1390.02	1369.02	2517	2561	57.09	124.67	213.41	3018
1090.00	1392.99	1371.99	2517	2562	56.95	124.39	212.96	2969
1092.00	1395.95	1374.95	2518	2563	56.82	124.12	212.51	2963
1094.00	1398.69	1377.69	2519	2563	56.71	123.88	212.14	2737
1096.00	1401.74	1380.74	2520	2564	56.57	123.59	211.66	3053
1098.00	1404.45	1383.45	2520	2564	56.46	123.36	211.30	2715
1100.00	1407.37	1386.37	2521	2565	56.33	123.10	210.87	2913
1102.00	1410.45	1389.45	2522	2566	56.19	122.80	210.40	3083

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1104.00	1413.76	1392.76	2523	2567	56.03	122.46	209.84	3309
1106.00	1417.11	1396.11	2525	2569	55.86	122.12	209.28	3348
1108.00	1420.35	1399.35	2526	2570	55.71	121.79	208.76	3237
1110.00	1423.48	1402.48	2527	2572	55.56	121.50	208.27	3133
1112.00	1426.64	1405.64	2528	2573	55.42	121.19	207.78	3161
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2959
1116.00	1432.98	1411.98	2530	2575	55.13	120.59	206.80	3381
1118.00	1436.33	1415.33	2532	2577	54.97	120.25	206.25	3349
1120.00	1439.53	1418.53	2533	2578	54.82	119.94	205.75	3204
1122.00	1442.70	1421.70	2534	2579	54.68	119.65	205.27	3171
1124.00	1445.86	1424.86	2535	2580	54.54	119.35	204.79	3155
1126.00	1448.75	1427.75	2536	2581	54.42	119.11	204.40	2894
1128.00	1451.70	1430.70	2537	2582	54.30	118.86	203.99	2945
1130.00	1454.66	1433.66	2537	2582	54.18	118.60	203.58	2968
1132.00	1457.29	1436.29	2538	2582	54.09	118.41	203.26	2621
1134.00	1460.30	1439.30	2538	2583	53.96	118.15	202.84	3019
1136.00	1463.46	1442.46	2540	2584	53.82	117.86	202.37	3159
1138.00	1466.62	1445.62	2541	2585	53.69	117.58	201.91	3152
1140.00	1469.72	1448.72	2542	2586	53.56	117.30	201.46	3106
1142.00	1472.87	1451.87	2543	2588	53.42	117.02	201.01	3148
1144.00	1476.07	1455.07	2544	2589	53.29	116.73	200.54	3198
1146.00	1479.18	1458.18	2545	2590	53.16	116.46	200.10	3112
1148.00	1482.14	1461.14	2546	2590	53.04	116.22	199.70	2957
1150.00	1485.16	1464.16	2546	2591	52.92	115.97	199.29	3024

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1152.00	1487.45	1466.45	2546	2591	52.85	115.83	199.07	2286
1154.00	1489.88	1468.88	2546	2591	52.78	115.67	198.81	2438
1156.00	1493.07	1472.07	2547	2592	52.64	115.39	198.35	3186
1158.00	1496.40	1475.40	2548	2593	52.50	115.08	197.85	3330
1160.00	1499.60	1478.60	2549	2594	52.37	114.80	197.40	3200
1162.00	1502.41	1481.41	2550	2595	52.26	114.59	197.05	2809
1164.00	1505.66	1484.66	2551	2596	52.13	114.30	196.58	3252
1166.00	1508.91	1487.91	2552	2597	51.99	114.02	196.12	3250
1168.00	1512.50	1491.50	2554	2599	51.83	113.67	195.55	3590
1170.00	1515.93	1494.93	2555	2601	51.68	113.36	195.03	3430
1172.00	1519.08	1498.08	2556	2602	51.56	113.09	194.60	3155
1174.00	1521.74	1500.74	2557	2602	51.47	112.91	194.30	2656
1176.00	1524.87	1503.87	2558	2603	51.35	112.65	193.88	3130
1178.00	1527.98	1506.98	2559	2604	51.23	112.40	193.47	3108
1180.00	1531.12	1510.12	2560	2605	51.10	112.14	193.05	3140
1182.00	1534.46	1513.46	2561	2606	50.97	111.85	192.57	3345
1184.00	1537.81	1516.81	2562	2608	50.83	111.56	192.10	3346
1186.00	1540.64	1519.64	2563	2608	50.73	111.36	191.77	2828
1188.00	1543.20	1522.20	2563	2608	50.65	111.19	191.50	2567
1190.00	1546.38	1525.38	2564	2609	50.53	110.94	191.08	3174
1192.00	1549.76	1528.76	2565	2611	50.39	110.65	190.60	3381
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3305
1196.00	1556.58	1535.58	2568	2614	50.12	110.06	189.63	3513
1198.00	1559.98	1538.98	2569	2615	49.98	109.77	189.15	3406

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
								3150
1200.00	1563.13	1542.13	2570	2616	49.86	109.52	188.75	
								3193
1202.00	1566.33	1545.33	2571	2617	49.74	109.27	188.33	
								3147
1204.00	1569.47	1548.47	2572	2618	49.63	109.03	187.93	
								3160
1206.00	1572.63	1551.63	2573	2619	49.51	108.78	187.53	
								3105
1208.00	1575.74	1554.74	2574	2620	49.40	108.55	187.14	
								3203
1210.00	1578.94	1557.94	2575	2621	49.28	108.30	186.73	
								3330
1212.00	1582.27	1561.27	2576	2623	49.16	108.03	186.29	
								3432
1214.00	1585.70	1564.70	2578	2624	49.02	107.74	185.82	
								3325
1216.00	1589.03	1568.03	2579	2625	48.90	107.48	185.38	
								3397
1218.00	1592.42	1571.42	2580	2627	48.77	107.20	184.93	
								3422
1220.00	1595.85	1574.85	2582	2628	48.63	106.92	184.47	
								3467
1222.00	1599.31	1578.31	2583	2630	48.50	106.64	184.00	
								3373
1224.00	1602.69	1581.69	2584	2631	48.37	106.37	183.56	
								3264
1226.00	1605.95	1584.95	2586	2632	48.26	106.12	183.14	
								3121
1228.00	1609.07	1588.07	2586	2633	48.15	105.89	182.77	
								3141
1230.00	1612.21	1591.21	2587	2634	48.04	105.67	182.40	
								3476
1232.00	1615.69	1594.69	2589	2636	47.91	105.39	181.93	
								3389
1234.00	1619.08	1598.08	2590	2637	47.79	105.12	181.50	
								3404
1236.00	1622.48	1601.48	2591	2639	47.66	104.86	181.06	
								3485
1238.00	1625.97	1604.97	2593	2640	47.53	104.58	180.60	
								3393
1240.00	1629.36	1608.36	2594	2642	47.41	104.32	180.17	
								3443
1242.00	1632.80	1611.80	2595	2643	47.28	104.05	179.72	
								3607
1244.00	1636.41	1615.41	2597	2645	47.14	103.76	179.24	
								3518
1246.00	1639.93	1618.93	2599	2647	47.01	103.48	178.78	

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1248.00	1643.43	1622.43	2600	2648	46.89	103.21	178.33	3498
1250.00	1646.84	1625.84	2601	2650	46.77	102.95	177.90	3411
1252.00	1650.04	1629.04	2602	2651	46.66	102.73	177.53	3203
[illegible]	[illegible]	[illegible]	2603	[illegible]	[illegible]			2958
1256.00	1656.17	1635.17	2604	2652	46.47	102.32	176.86	3174
1258.00	1658.92	1637.92	2604	2652	46.39	102.16	176.59	2748
1260.00	1661.94	1640.94	2605	2653	46.30	101.96	176.27	3024
1262.00	1665.09	1644.09	2606	2654	46.20	101.75	175.92	3146
1264.00	1668.49	1647.49	2607	2655	46.08	101.50	175.50	3401
1266.00	1672.03	1651.03	2608	2657	45.96	101.23	175.06	3541
1268.00	1675.43	1654.43	2610	2658	45.84	100.99	174.65	3397
1270.00	1678.74	1657.74	2611	2659	45.73	100.75	174.27	3308
1272.00	1682.07	1661.07	2612	2660	45.62	100.52	173.88	3330
1274.00	1686.02	1665.02	2614	2663	45.47	100.19	173.33	3950
1276.00	1689.35	1668.35	2615	2664	45.36	99.96	172.95	3332
1278.00	1692.62	1671.62	2616	2665	45.26	99.74	172.58	3270
1280.00	1695.98	1674.98	2617	2666	45.15	99.51	172.19	3360
1282.00	1699.36	1678.36	2618	2668	45.04	99.27	171.80	3378
1284.00	1702.71	1681.71	2619	2669	44.93	99.04	171.42	3351
1286.00	1706.28	1685.28	2621	2670	44.81	98.78	170.99	3573
1288.00	1709.67	1688.67	2622	2672	44.70	98.55	170.60	3390
1290.00	1713.11	1692.11	2623	2673	44.59	98.31	170.21	3440
1292.00	1716.84	1695.84	2625	2675	44.46	98.03	169.74	3725
1294.00	1720.33	1699.33	2626	2676	44.34	97.79	169.33	3491

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TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1296.00	1723.91	1702.91	2628	2678	44.22	97.53	168.91	3583
1298.00	1727.42	1706.42	2629	2680	44.11	97.29	168.50	3509
1300.00	1730.96	1709.96	2631	2681	44.00	97.04	168.09	3537
1302.00	1734.35	1713.35	2632	2682	43.89	96.82	167.72	3397
1304.00	1737.84	1716.84	2633	2684	43.78	96.58	167.32	3490
1306.00	1741.45	1720.45	2635	2685	43.66	96.33	166.90	3610
1308.00	1745.00	1724.00	2636	2687	43.55	96.08	166.49	3546
1310.00	1748.50	1727.50	2637	2688	43.44	95.85	166.10	3504
1312.00	1751.94	1730.94	2639	2690	43.33	95.62	165.73	3434
1314.00	1755.54	1734.54	2640	2691	43.22	95.38	165.31	3602
1316.00	1759.07	1738.07	2641	2693	43.11	95.14	164.92	3532
1318.00	1762.43	1741.43	2643	2694	43.01	94.93	164.56	3362
1320.00	1765.85	1744.85	2644	2695	42.91	94.71	164.20	3413
1322.00	1769.60	1748.60	2645	2697	42.78	94.45	163.76	3754
1324.00	1773.08	1752.08	2647	2698	42.68	94.22	163.39	3476
1326.00	1776.57	1755.57	2648	2700	42.57	94.00	163.01	3491
1328.00	1780.34	1759.34	2650	2702	42.45	93.73	162.57	3776
1330.00	1783.90	1762.90	2651	2703	42.34	93.50	162.18	3559
1332.00	1787.43	1766.43	2652	2705	42.24	93.28	161.80	3525
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3561
1336.00	1794.55	1773.55	2655	2708	42.02	92.82	161.04	3561
1338.00	1798.19	1777.19	2656	2709	41.91	92.58	160.64	3645
1340.00	1801.75	1780.75	2658	2711	41.81	92.35	160.26	3559
1342.00	1805.12	1784.12	2659	2712	41.71	92.15	159.92	3366

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1344.00	1808.45	1787.45	2660	2713	41.62	91.96	159.60	3329
1346.00	1811.80	1790.80	2661	2714	41.53	91.76	159.27	3355
1348.00	1815.19	1794.19	2662	2715	41.44	91.56	158.93	3392
1350.00	1819.01	1798.01	2664	2717	41.32	91.30	158.50	3817
1352.00	1822.59	1801.59	2665	2718	41.22	91.08	158.13	3579
1354.00	1826.47	1805.47	2667	2720	41.09	90.82	157.69	3875
1356.00	1829.90	1808.90	2668	2722	41.00	90.62	157.35	3435
1358.00	1833.35	1812.35	2669	2723	40.91	90.42	157.01	3445
1360.00	1837.06	1816.06	2671	2725	40.80	90.18	156.62	3716
1362.00	1840.44	1819.44	2672	2726	40.71	89.99	156.29	3382
1364.00	1843.61	1822.61	2672	2726	40.63	89.82	156.01	3169
1366.00	1847.08	1826.08	2674	2728	40.53	89.62	155.67	3471
1368.00	1850.76	1829.76	2675	2729	40.43	89.39	155.29	3673
1370.00	1854.17	1833.17	2676	2730	40.34	89.20	154.97	3414
1372.00	1857.68	1836.68	2677	2732	40.24	88.99	154.62	3508
1374.00	1861.17	1840.17	2679	2733	40.15	88.79	154.29	3490
1376.00	1864.55	1843.55	2680	2734	40.06	88.60	153.97	3377
1378.00	1868.25	1847.25	2681	2736	39.96	88.38	153.60	3706
1380.00	1871.84	1850.84	2682	2737	39.86	88.17	153.24	3585
1382.00	1875.36	1854.36	2684	2738	39.77	87.97	152.91	3526
1384.00	1878.72	1857.72	2685	2739	39.68	87.79	152.60	3357
1386.00	1882.10	1861.10	2686	2740	39.60	87.60	152.30	3375
1388.00	1885.61	1864.61	2687	2742	39.51	87.41	151.96	3510
1390.00	1888.96	1867.96	2688	2743	39.43	87.23	151.66	3356

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1392.00	1892.32	1871.32	2689	2744	39.34	87.05	151.36	3360
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3502
1396.00	1899.44	1878.44	2691	2746	39.16	86.65	150.69	3613
1398.00	1903.04	1882.04	2692	2748	39.06	86.45	150.35	3608
1400.00	1906.46	1885.46	2694	2749	38.96	86.26	150.04	3417
1402.00	1909.92	1888.92	2695	2750	38.89	86.08	149.73	3459
1404.00	1912.92	1891.92	2695	2750	38.83	85.94	149.50	2998
1406.00	1916.79	1895.79	2697	2752	38.72	85.71	149.11	3870
1408.00	1920.44	1899.44	2698	2754	38.63	85.51	148.77	3652
1410.00	1923.91	1902.91	2699	2755	38.54	85.32	148.46	3468
1412.00	1927.57	1906.57	2701	2756	38.45	85.12	148.11	3663
1414.00	1931.41	1910.41	2702	2758	38.34	84.90	147.74	3834
1416.00	1935.07	1913.97	2703	2759	38.26	84.70	147.42	3560
1418.00	1938.49	1917.49	2704	2761	38.17	84.52	147.10	3522
1420.00	1941.95	1920.95	2706	2762	38.09	84.34	146.80	3467
1422.00	1945.41	1924.41	2707	2763	38.01	84.16	146.51	3450
1424.00	1948.91	1927.91	2708	2764	37.92	83.98	146.20	3510
1426.00	1952.58	1931.58	2709	2766	37.83	83.78	145.86	3664
1428.00	1955.98	1934.98	2710	2767	37.75	83.61	145.58	3402
1430.00	1959.56	1938.56	2711	2768	37.66	83.43	145.26	3576
1432.00	1962.64	1941.64	2712	2768	37.60	83.29	145.03	3086
1434.00	1966.02	1945.02	2713	2769	37.52	83.13	144.76	3375
1436.00	1969.15	1948.15	2713	2770	37.46	82.98	144.52	3136
1438.00	1972.34	1951.34	2714	2770	37.39	82.84	144.27	3182

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1440.00	1975.84	1954.84	2715	2772	37.31	82.66	143.98	3506
1442.00	1979.19	1958.19	2716	2772	37.24	82.50	143.71	3343
1444.00	1983.10	1962.10	2718	2774	37.14	82.29	143.34	3914
1446.00	1986.82	1965.82	2719	2776	37.05	82.09	143.01	3725
1448.00	1990.79	1969.79	2721	2778	36.94	81.87	142.63	3965
1450.00	1994.64	1973.64	2722	2780	36.85	81.66	142.28	3851
1452.00	1998.17	1977.17	2723	2781	36.77	81.49	141.99	3534
1454.00	2001.84	1980.84	2725	2782	36.68	81.30	141.67	3662
1456.00	2005.44	1984.44	2726	2784	36.60	81.12	141.37	3601
1458.00	2009.31	1988.31	2727	2785	36.50	80.91	141.02	3872
1460.00	2012.78	1991.78	2728	2786	36.43	80.75	140.74	3469
1462.00	2016.37	1995.37	2730	2788	36.35	80.57	140.45	3591
1464.00	2019.84	1998.84	2731	2789	36.27	80.41	140.17	3469
1466.00	2023.37	2002.37	2732	2790	36.19	80.24	139.88	3533
1468.00	2026.89	2005.89	2733	2791	36.12	80.08	139.60	3520
1470.00	2030.50	2009.50	2734	2792	36.04	79.90	139.31	3606
1472.00	2033.94	2012.94	2735	2793	35.96	79.74	139.04	3438
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3636
1476.00	2041.08	2020.08	2737	2796	35.81	79.41	138.47	3510
1478.00	2044.66	2023.66	2738	2797	35.73	79.24	138.18	3576
1480.00	2048.08	2027.08	2739	2798	35.66	79.08	137.92	3424
1482.00	2051.92	2030.92	2741	2799	35.57	78.89	137.60	3835
1484.00	2055.78	2034.78	2742	2801	35.48	78.70	137.27	3867
1486.00	2059.74	2038.74	2744	2803	35.39	78.49	136.92	3961

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1 PAGE 54

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
[illegible]	2063.72	2042.72	[illegible]	2805	35.29	78.29	136.57	3976
1490.00	[illegible]	2046.25	2747	2806	35.22	78.13	136.30	3533
1492.00	2071.28	2050.28	2748	2808	35.12	77.92	135.95	4028
1494.00	2074.75	2053.75	2749	2809	35.05	77.77	135.69	3469
1496.00	2078.79	2057.79	2751	2811	34.96	77.56	135.34	4039
1498.00	2082.91	2061.91	2753	2813	34.86	77.35	134.98	4119
1500.00	2086.39	2065.39	2754	2814	34.79	77.20	134.72	3485
1502.00	2089.89	2068.89	2755	2815	34.72	77.04	134.46	3497
1504.00	2093.30	2072.30	2756	2816	34.65	[illegible]	[illegible]	[illegible]
1506.00	2097.31	2076.31	2757	[illegible]	34.56	76.70	133.88	4011
1508.00	[illegible]	2079.90	2758	2819	34.49	76.54	133.61	3588
1510.00	2104.39	2083.39	2759	2820	34.42	76.39	133.36	3486
1512.00	2107.89	2086.89	2760	2821	34.35	76.24	133.10	3503
1514.00	2111.64	2090.64	2762	2823	34.27	76.07	132.81	3749
1516.00	2115.47	2094.47	2763	2824	34.19	75.90	132.51	3828
1518.00	2118.79	2097.79	2764	2825	34.13	75.76	132.29	3319
1520.00	2122.37	2101.37	2765	2826	34.06	75.61	132.03	3579
1522.00	2126.06	2105.06	2766	2827	33.98	75.45	131.75	3696
1524.00	2129.86	2108.86	2768	2829	33.90	75.27	131.46	3796
1526.00	2133.79	2112.79	2769	2831	33.82	75.09	131.14	3930
1528.00	2137.82	2116.82	2771	2832	33.73	74.90	130.82	4035
1530.00	2142.00	2121.00	2773	2835	33.64	74.69	130.47	4174
1532.00	2145.69	2124.69	2774	2836	33.56	74.53	130.20	3694
1534.00	2149.89	2128.89	2776	2838	33.47	74.33	129.85	4199

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1536.00	2154.13	2133.13	2778	2840	33.37	74.12	129.49	4236
1538.00	2157.72	2136.72	2779	2841	33.31	73.97	129.24	3595
1540.00	2161.51	2140.51	2780	2843	33.23	73.81	128.96	3782
1542.00	2165.66	2144.66	2782	2845	33.14	73.61	128.62	4154
1544.00	2169.90	2148.90	2784	2847	33.05	73.41	128.27	4242
1546.00	2173.44	2152.44	2785	2848	32.98	73.26	128.03	3543
1548.00	2177.30	2156.30	2786	2850	32.90	73.10	127.75	3856
1550.00	2181.30	2160.30	2787	2852	32.82	72.92	127.44	4004
1552.00	2184.93	2163.93	2789	2853	32.76	72.77	127.19	3626
1554.00	2188.48	2167.48	2790	2854	32.69	72.63	126.95	3550
1556.00	2192.08	2171.08	2791	2855	32.63	72.49	126.71	3606
1558.00	2195.80	2174.80	2792	2856	32.56	72.34	126.45	3719
1560.00	2199.47	2178.47	2793	2857	32.49	72.19	126.20	3670
1562.00	2203.10	2182.10	2794	2858	32.42	72.04	125.95	3627
1564.00	2206.54	2185.54	2795	2859	32.36	71.92	125.74	3440
1566.00	2210.46	2189.46	2796	2861	32.29	71.75	125.45	3922
1568.00	2214.51	2193.51	2798	2863	32.21	71.57	125.15	4046
1570.00	2218.48	2197.48	2799	2864	32.13	71.40	124.86	3970
1572.00	2222.54	2201.54	2801	2866	32.05	71.23	124.56	4062
1574.00	2226.68	2205.68	2803	2868	31.96	71.04	124.25	4136
1576.00	2230.52	2209.52	2804	2870	31.89	70.89	123.98	3842
1578.00	2234.40	2213.40	2805	2871	31.82	70.73	123.71	3878
1580.00	2238.24	2217.24	2807	2873	31.75	70.58	123.45	3841
1582.00	2242.13	2221.13	2808	2874	31.68	70.42	123.18	3888

COMPANY : ESSO AUSTRALIA LTD WELL : TORSK #1

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1584.00	2246.02	2225.02	2809	2876	31.60	70.26	122.91	3897
1586.00	2249.93	2228.93	2811	2877	31.53	70.10	122.64	3904
1588.00	2253.78	2232.78	2812	2879	31.46	69.95	122.38	3853
1590.00	2257.33	2236.33	2813	2879	31.40	69.82	122.16	3545
1592.00	2261.23	2240.23	2814	2881	31.33	69.66	121.89	3906
1594.00	2265.01	2244.01	2816	2882	31.26	69.52	121.64	3778
1596.00	2268.58	2247.58	2817	2883	31.21	69.39	121.42	3569
1598.00	2272.40	2251.40	2818	2885	31.14	69.24	121.17	3818
1600.00	2275.95	2254.95	2819	2886	31.08	69.12	120.95	3551
1602.00	2279.76	2258.76	2820	2887	31.01	68.97	120.71	3814
1604.00	2283.46	2262.46	2821	2888	30.95	68.83	120.47	3697
1606.00	2287.22	2266.22	2822	2889	30.89	68.69	120.23	3760
1608.00	2291.06	2270.06	2823	2891	30.82	68.55	119.98	3837
1610.00	2294.74	2273.74	2825	2892	30.76	68.41	119.76	3678
1612.00	2298.62	2277.62	2826	2893	30.69	68.27	119.50	3885
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			3889
1616.00	2306.30	2285.30	2828	2896	30.56	67.98	119.01	3792
1618.00	2310.19	2289.19	2830	2897	30.49	67.83	118.76	3887
1620.00	2314.09	2293.09	2831	2899	30.42	67.68	118.51	3900
1622.00	2317.89	2296.89	2832	2900	30.36	67.55	118.27	3800
1624.00	2321.51	2300.51	2833	2901	30.30	67.42	118.06	3621
1626.00	2325.46	2304.46	2835	2903	30.24	67.27	117.80	3954
1628.00	2329.52	2308.52	2836	2904	30.16	67.12	117.53	4058
1630.00	2332.89	2311.89	2837	2905	30.12	67.01	117.35	3364

TWO-WAY TRAVEL TIME FROM SRD MS	MEASURED DEPTH FROM KB M	VERTICAL DEPTH FROM SRD M	AVERAGE VELOCITY SRD/GEO M/S	RMS VELOCITY M/S	FIRST NORMAL MOVEOUT MS	SECOND NORMAL MOVEOUT MS	THIRD NORMAL MOVEOUT MS	INTERVAL VELOCITY M/S
1632.00	2336.76	2315.76	2838	2906	30.05	66.87	117.11	3874
1634.00	2340.62	2319.62	2839	2908	29.99	66.73	116.87	3859
1636.00	2344.54	2323.54	2841	2909	29.92	66.58	116.62	3918
1638.00	2348.34	2327.34	2842	2910	29.86	66.45	116.39	3804
1640.00	2351.87	2330.87	2843	2911	29.81	66.33	116.20	3533
1642.00	2355.69	2334.69	2844	2912	29.75	66.20	115.97	3813
1644.00	2359.54	2338.54	2845	2914	29.69	[illegible]	115.73	3853
1646.00	2363.29	2342.29	2846	2915	29.62	65.93	115.51	3750
1648.00	2367.07	2346.07	2847	2916	29.57	65.80	115.29	3778
1650.00	2370.80	2349.80	2848	2917	29.51	65.68	115.07	3729
1652.00	2374.41	2353.41	2849	2918	29.45	65.56	114.87	3615
1654.00	2378.24	2357.24	2850	2920	29.39	65.43	114.64	3833
1656.00	2382.31	2361.31	2852	2921	29.32	65.28	114.39	4069
1658.00	2386.08	2365.08	2853	2922	29.27	65.15	114.17	3771
1660.00	2389.90	2368.90	2854	2924	29.21	65.02	113.95	3819
1662.00	2393.62	2372.62	2855	2925	29.15	64.90	113.74	3713
1664.00	2397.37	2376.37	2856	2926	29.09	64.77	113.52	3756
1666.00	2401.04	2380.04	2857	2927	29.04	64.66	113.32	3666
1668.00	2404.71	2383.71	2858	2928	28.99	64.54	113.12	3673
1670.00	2408.38	2387.38	2859	2929	28.93	64.42	112.92	3673
1672.00	2412.06	2391.06	2860	2930	28.88	64.30	112.71	3673
1674.00	2415.73	2394.73	2861	2931	28.83	64.19	112.51	3673
1676.00	2419.40	2398.40	2862	2932	28.77	64.07	112.31	3673

PE601016

This is an enclosure indicator page.
The enclosure PE601016 is enclosed within the container PE902179 at this location in this document.

The enclosure PE601016 has the following characteristics:

ITEM_BARCODE	= PE601016
CONTAINER_BARCODE	= PE902179
NAME	= Drift Corrected Sonic
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Drift Corrected Sonic for Torsk-1
REMARKS	=
DATE_CREATED	= 15/11/88
DATE_RECEIVED	= 2/10/89
W_NO	= W982
WELL_NAME	= Torsk-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601017

This is an enclosure indicator page.
The enclosure PE601017 is enclosed within the container PE902179 at this location in this document.

The enclosure PE601017 has the following characteristics:

ITEM_BARCODE	= PE601017
CONTAINER_BARCODE	= PE902179
NAME	= Seismic Calibration Log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Seismic Calibration Log for Torsk-1
REMARKS	=
DATE_CREATED	= 10/12/88
DATE_RECEIVED	= 2/10/89
W_NO	= W982
WELL_NAME	= Torsk-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601018

This is an enclosure indicator page.
The enclosure PE601018 is enclosed within the container PE902179 at this location in this document.

The enclosure PE601018 has the following characteristics:

ITEM_BARCODE	= PE601018
CONTAINER_BARCODE	= PE902179
NAME	= Synthetic Seismogram - Geogram 40 Hz
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= SYNTH_SEISMOGRAM
DESCRIPTION	= Synthetic Seismogram - Geogram for Torsk-1
REMARKS	=
DATE_CREATED	= 10/12/88
DATE_RECEIVED	= 2/10/89
W_NO	= W982
WELL_NAME	= Torsk-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601019

This is an enclosure indicator page.
The enclosure PE601019 is enclosed within the container PE902179 at this location in this document.

The enclosure PE601019 has the following characteristics:

ITEM_BARCODE	= PE601019
CONTAINER_BARCODE	= PE902179
NAME	= Synthetic Seismogram - Geogram 30Hz
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= SYNTH_SEISMOGRAM
DESCRIPTION	= Synthetic Seismogram - Geogram for Torsk-1
REMARKS	=
DATE_CREATED	= 10/12/88
DATE_RECEIVED	= 2/10/89
W_NO	= W982
WELL_NAME	= Torsk-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601020

This is an enclosure indicator page.
The enclosure PE601020 is enclosed within the container PE902179 at this location in this document.

The enclosure PE601020 has the following characteristics:

ITEM_BARCODE	= PE601020
CONTAINER_BARCODE	= PE902179
NAME	= Synthetic Seismogram - Geogram 30 Hz
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= SYNTH_SEISMOGRAM
DESCRIPTION	= Synthetic Seismogram - Geogram for Torsk-1
REMARKS	=
DATE_CREATED	= 10/12/88
DATE_RECEIVED	= 2/10/89
W_NO	= W982
WELL_NAME	= Torsk-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601021

This is an enclosure indicator page.
The enclosure PE601021 is enclosed within the container PE902179 at this location in this document.

The enclosure PE601021 has the following characteristics:

ITEM_BARCODE	= PE601021
CONTAINER_BARCODE	= PE902179
NAME	= Synthetic Seismogram - Geogram 40 Hz
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= SYNTH_SEISMOGRAM
DESCRIPTION	= Synthetic Seismogram - Geogram for Torsk-1
REMARKS	=
DATE_CREATED	= 10/12/88
DATE_RECEIVED	= 2/10/89
W_NO	= W982
WELL_NAME	= Torsk-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)