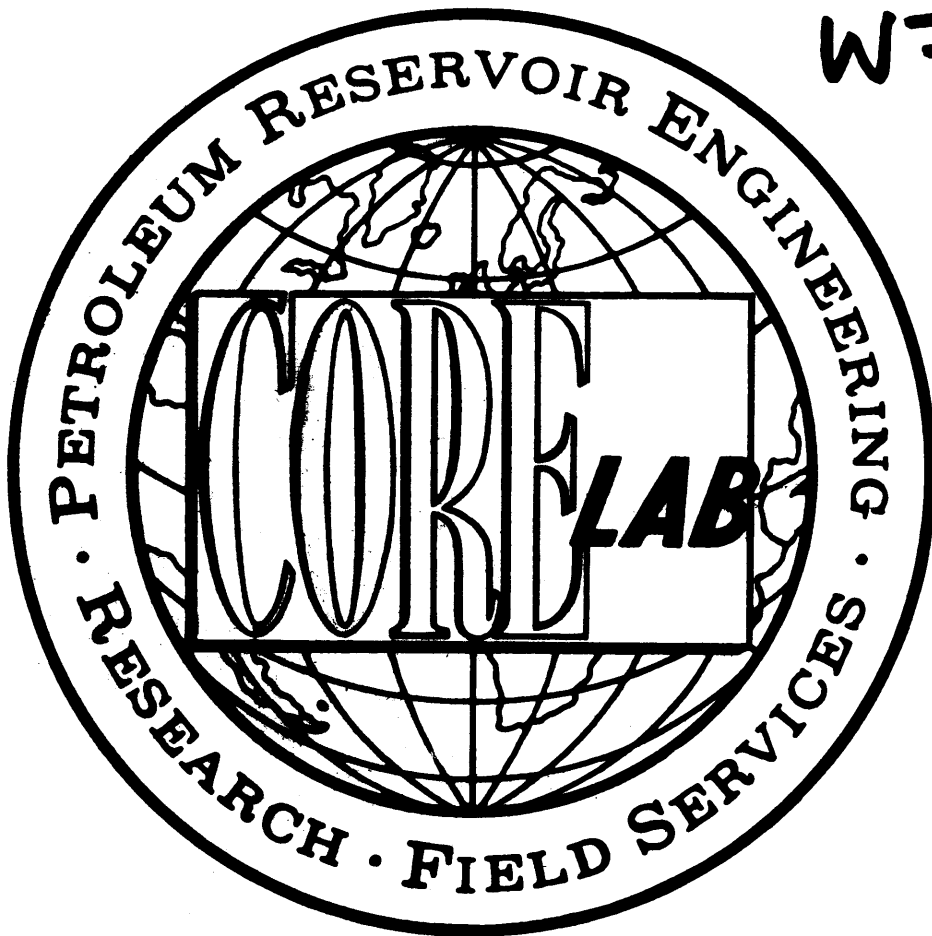


W760

ATTACHMENT 1
OF WCR : TARWHINE-1

W760



IES WELL REPORT
Tarwhine No 1
ESSO AUSTRALIA LTD

OIL and GAS DIVISION

29 APR 1982

CORE LABORATORIES AUSTRALIA (QLD.) LTD.

Petroleum Reservoir Engineering
AUSTRALIA

BRISBANE OFFICE:
1173 KINGSFORD SMITH DRIVE
PINKENBA, Q. 4008.
P.O. BOX 456
HAMILTON CENTRAL, Q. 4007
AUSTRALIA.

CABLE ADDRESS: CORELAB BRISBANE
TELEX No: COREBN AA42513
TELEPHONE: 260 1722
260 1723

2nd April, 1982.

Esso Australia Ltd
127 Kent Street
SYDNEY. N.S.W. 2000.

ATTENTION: MR K. KUTTAN.

Dear Sir

Please find enclosed copies of the well report for Tarwhine No. 1.

If you have any enquiries please do not hesitate to contact us.

Yours very truly
CORE LABORATORIES AUSTRALIA (QLD) LTD.

A. DODSON
Signed by


in A. Dodson's absence.

--Jan 1982

ESSO AUSTRALIA LTD.
ESSO HOUSE
127 Kent St.
Sydney
N.S.W. - 2001

Dear Sir,

Core Laboratories Intermediate Extended Service
Well Logging Unit FL802 was in use during the
drilling of TARWHINE # 1 from surface to a total
depth of 2955 metres.

Please find enclosed the IES well report, appended
drilling parameter logs and the Corelab grapholog
for your reference.

We appreciated being of assistance during the
drilling operations and associated testing and
look forward to continuing our association on
future wells.

If you require clarification of this report, please
do not hesitate to contact us.

Yours very truly,
CORE LABORATORIES INTERNATIONAL Ltd.

A. Dodson
Unit supervisor

INDEX.

1. Introduction
 2. Core Laboratories Equipment
 3. Core Laboratories Monitoring Equipment
 4. Intermediate Extended Service Introduction
 5. Rig Information Sheet
 6. Well Information Sheets
 7. Well History
 8. Progress Report
 9. Bit Record Sheets
 10. Mud Information Sheets
 11. Geological Summary
 12. Overburden Gradient Calculations and Overburden Log
 13. F.I.T./R.F.T. Data and Bottom-hole Temperature Estimations
 14. Sidewall Core Gas Analysis
 15. Gas Composition Analysis
 16. Core-O-Graphs
 17. Pore Pressure Summary and L.O.T./P.I.T. Data
 18. Production Test Data
 19. Computer Data Listings:-
 - (a) Bit Record and Bit Initialization Data
 - (b) Hydraulic Analyses
 - (c) Data List A
 - (d) Data List B
 - (e) Data List C
 - (f) Data List D
- Appended Logs:-
 - (a) Drill Data Plot
 - (b) Cost Analysis Plot
 - (c) Temperature Plot
 - (d) Pressure Plot
 - (e) Geoplot 1 : 5000 and 1 : 2000
 - (f) Drilling Parameter Plot
 - (g) Grapholog.
-

1. INTRODUCTION.

Tarwhine No. 1 was drilled by ESSO Australia Ltd. in the Bass Strait, Australia.

Well co-ordinates were:

Latitude : 38^o 24' 17.88"S.
Longitude : 147^o 31' 41.556"E.

The well was drilled by South Seas Drilling Company's semi-submersible rig "Southern Cross", and monitored by Core Laboratories Intermediate Extended Service Field Laboratory 802.

Tarwhine No. 1 was spudded on 20th November, 1981 and reached a total depth of 2955 metres on 28th December, 1981, a total drilling time of 39 days. The main objective of the well was to test an anticlinal closure at the top of the Latrobe Coarse Clastics on the Barracouta - Perch and Dolphin trend. The secondary objective was to test for local intra-Latrobe pay zones similar to the Barracouta M-1 oil reserve.

Elevations were:

21m Kelly bushings to mean sea level
44m Water depth
65m Kelly bushings to mud line.

All depths used in this report and accompanying logs refer to depth below rotary kelly bushings (RKB).

Core Laboratories personnel involved in the logging were as follows:

A. Dodson - Unit Supervisor
T. Charles - Pressure Engineer
N. Danker - Logging Crew Chief
B. Giftson - Well Logger
A. McConville - Well Logger
R. Bickerstaff - Well Logger
C. Miekle - Well Logger.

2. CORE LABORATORIES EQUIPMENT

Core Laboratories Field Laboratory 802 monitoring equipment includes the following :

A. MUD LOGGING

1. T.H.M. total gas detector and recorder
2. Hot wire total gas detector and recorder
3. F.I.D. (Flame Ionization Detector) chromatograph and recorder
4. Gas trap and support equipment for the above
5. Rate of Penetration recorder and digital display
6. Pit volume totalizer, display and recorder
7. Digital depth counter
7. Two integrated pump stroke counters, with digital display
9. Ultra-violet fluoroscope
10. Binocular microscope

B. INTERMEDIATE EXTENDED SERVICE PACKAGE

1. Hewlett Packard 9825B desktop computer
2. Hewlett Packard 9872B plotter
3. Hewlett Packard 2631A printer
4. Two Hewlett Packard 2621P visual display units, (one located in the client's office)
5. Hookload/weight on bit transducer and recorder
6. Rotary speed tachogenerator and recorder
7. Standpipe pump pressure transducer and recorder
8. Mud flow out sensor and recorder
9. Mud temperature sensors and recorder (in and out)
10. Mud conductivity sensors and recorder (in and out)
11. Rotary torque sensor and recorder
12. Shale density apparatus
13. Hydrogen sulphide gas detector
14. Carbon dioxide gas detector

3. CORE LABORATORIES MONITORING EQUIPMENT

DEPTH

DEpth registered every 0.2 metres and rate of penetration calculated each metre (or every 0.2 m while coring). ROP displayed on digital panel and chart.

WEIGHT ON BIT

A Tyco 0-1000 psi, solid state pressure transducer is connected to the rig's deadline anchor. The weight on bit is calculated in the Rig Functions panel, and displayed (with hookload) on a digital meter and recorder chart

ROTARY SPEED

This is a DC generator for which 1 volt = 100 rpm, and which is belt-driven from the rotary drive shaft. The value is displayed on digital meter and recorder chart.

PUMP PRESSURE

This is a Tyco 0-5000 psi transducer mounted on the standpipe manifold. The pressure is displayed on digital panel meter and recorder chart.

PIT VOLUME

Six individual pits can be displayed on the meter. The pit volume total is calculated in the PVT panel and displayed on a digital meter. The sensors are vertical floats driving potentiometers accurate to +/- 1 barrel. Each sensor is equipped with a wave compensating device. In addition a sensor is fitted to the rig's trip tank, so that hole fill-up during trips may be closely monitored. A recorder chart displays the levels of the active pits, the pit volume total, and the trip tank.

PUMP STROKES

These are the limit switch type, counting individual strokes. The Pulse Data Box can monitor one or two pumps individually or integrate the total number of strokes from both pumps. The pump rate per minute is displayed on recorder chart.

ROTARY TORQUE

An American aerospace Controls bi-directional current sensor is clamped over the power cable of the rotary table motor. Torque is displayed on digital panel meter and recorder chart.

MUD TEMPERATURE

This is a platinum probe resistance thermometer, calibrated 0-100 deg. C. Temperature in and out is displayed on recorder chart and digital meter.

MUD CONDUCTIVITY

A Balsbaugh electrode-less conductivity sensor measures the current in a closed loop of solution coupling a pair of toroidal transformer coils.

The conductivity in and out is displayed on analog and digital meters, and recorder chart.

All the sensors are 5 to 24 v DC powered with the exception of the air driven gas trap. Along with monitoring and maintaining the above equipment, Core Lab furnished and operated certain other items.

CUTTINGS

Microscopic and ultra-violet inspection of cuttings samples at predetermined intervals. Dry samples were washed, dried and boxed. Wet samples were washed sacked and boxed. Geochemical samples were canned and boxed.

GAS

1. Flame Ionization Total Hydrocarbon gas detector.

The T.H.M. accurately determines hydrocarbon concentrations up to 100% saturation.

2. Flame Ionization Detector chromatograph.

The F.I.D. is capable of accurate determination of hydrocarbon concentration from C1 to C6+.

3. Hot wire gas detector (Wheatstone Bridge type)

A back up system for total gas detection.

SHALE DENSITY

Manual determination of shale density in an accurately calibrated variable density column.

4. INTERMEDIATE EXTENDED SERVICE INTRODUCTION

The Core Laboratories Intermediate Extended Service Package includes sensors, recorders and computer facilities useful in the drilling operation; for the detection of abnormal formation pressure; and the optimization of drilling.

Presented graphically on Core Laboratories I.E.S. logs (discussed individually in the following section of this report) are the various functions necessary for well control, abnormal formation pressure detection and drilling optimization.

Other available services include electric log interpretation programs for the wellsite geologist, hydraulics (synthesis and analysis), well kill, cost per foot, bit nozzle selection, swab and surge created by pipe movement and bit performance programmes for the wellsite drilling engineer.

Core Laboratories I.E.S. logs include the following :

I.E.S. PRESSURE LOG

Information plotted on this log includes formation pore pressure, mud weight in and formation fracture pressure. This is plotted on linear graph paper at a vertical scale of 1:5000. The formation pore pressure and fracture pressure gradients are based on all available information. This is a conclusion log, therefore the information may be modified by results from formation drill stem tests, data from adjacent wells, kicks, and formation breakdown tests.

CORELAB DRILL DATA PLOT

This plot, which is drawn while drilling is in progress, is the primary tool by which formation overpressure is detected. Drawn on a 1:5000 scale it is particularly useful in that five plots are drawn side by side, and thus any trend can be readily recognised.

The main plot is that of the corrected 'd' exponent, which is presented on a logarithmic scale. The 'd' exponent was first developed by Jordan and Shirley in 1966 to assist in interpreting rate of penetration data by normalizing for rotary speed and weight on bit per inch of bit diameter.

The modified 'dc' exponent was proposed by Rhem and McClendon to compensate for increases in mud weight. This involves multiplying the standard 'd' exponent value by the inverse ratio of the mud weight. A multiple of 9 ppg was used for convenience to return the magnitude of the 'dc' to a comparable value of it's uncorrected state. In this case, a multiplier of 10 ppg was used. The equation for 'dc' is therefore :

$$\text{"dc"} = \frac{\text{Log} \left(\frac{\text{ROP}}{\text{RPM} \times 60} \right) + 10}{\text{Log} \left(\frac{\text{WOB} \times 12}{\text{Bit diam} \times 1000} \right) \times \text{MDI}}$$

Deviations from the normal "dcs" trend may be interpreted as being due to a change in formation pore pressure. An equation derived by Eaton is used in an attempt to evaluate pore pressure from deviations in the "dcs" plot. This method of overpressure detection can be fairly accurate for homogeneous shales, but where the sand/silt/shale ratio varies a great deal, inaccuracies often occur.

The other main plots are a logarithmic rate of penetration, which complements the 'dcs' plot and a linear plot of total mud gas.

Shale densities are also plotted on a linear scale in order to show up a decreasing density trend, and hence a possible transition into abnormally pressured shales. The points are determined by measuring the density of air dried shale samples in an accurately calibrated density solution.

An interpreted lithology column is also included on the log, as is a plot of mud density in, to assist in interpretation. All relevant information, such as casing points, bit runs, etc. are also included.

I.E.S. GEO-PLOT LOG

This is plotted by the computer while drilling is in progress. At a later date this plot can be re-run on different scales to suit the client. The data is stored on magnetic tape during the drilling operations. Functions plotted on this log are : rate of penetration, corrected "d" exponent, breakeven analysis, formation pore pressure, mud density in and formation fracture pressure.

Two Geo-plots are included in this report, at scales of 1:2000 and 1:5000.

I.E.S. FLOWLINE TEMPERATURE, FLOWLINE TEMPERATURE END TO END PLOTS

Flowline temperature and end to end plot of flowline temperature are the two main plots relating to the temperature of the returning drilling fluid. These are plotted on a vertical scale of 1:5000. The use of these plots as an indicator of the presence of over-pressure takes secondary role to the I.E.S. drill log. Continuous observation of flowline temperature may indicate an increase in geothermal gradient. Factors affecting temperature are noted on the log, such as new bit runs, changes in the circulation rates, circulating cuttings out and the addition of water and chemicals to the active mud system. Since the goal of the end-to-end plot is to provide a representation of the geothermal gradient, all surface changes which would cause artificial changes in the flowline temperature are disregarded.

ELECTRIC LOG PLOT

A plot of shale resistivity (ohm-metres squared/metre), sonic travel time (microseconds per foot), bulk density (gm./cc) and neutron porosity (%), is made, using data supplied by Schlumberger. Two-cycle semilog paper is used, with a vertical scale of 1:10,000. As far as possible only clean shale points are selected and plotted. The relatively compressed vertical scale makes deviations from the normal compaction trend easier to identify.

PROGRESS LOG

This is the traditional presentation of footage against elapsed time in days. It shows actual drilling time from spud to total depth.

DATA RECORDING

Data is recorded on tape while drilling both as raw input numbers and computer calculated numbers. This data can be accessed later for use in interpretative programs or to review data. Comprehensive data lists are included in this report.

MUD DATA SHEETS

These are a record of the mud properties while drilling and are derived from the mud engineer's daily report.

DRILLING PARAMETER PLOT

The drilling parameter plot shows : rate of penetration, weight on bit, rotary speed, pump pressure, hydraulic horsepower, impact force and jet velocity. This plot is drawn by the computer and is designed to aid the drilling engineer in drilling optimization. The scale chosen here is 1:5000.

HYDRAULIC ANALYSES

During drilling, routine hydraulic analyses are calculated by the computer, and these are made available to the drilling engineer. This report includes a sample hydraulics for each 100 m.

GAS COMPOSITION ANALYSIS

For each significant gas show, the chromatograph results are analysed using two techniques:-

1. Log plot
2. Triangulation plot

Both plots are included in this report.

GRAPHOLOG

This is plotted on the industry standard form on a vertical scale of 1:500. Rate of penetration is plotted in metres per hour, together with mud gas chromatography results. Total gas is also plotted, and a percentage lithology log is drawn. A lithology description is presented in an abbreviated form. All relevant drilling data is included, as is bit and mud data.

MISCELLANEOUS

Various data collected from this well are also included in this report for reference. These include formation leak off test data, and R.F.T. and well test data where appropriate.

5. RIG INFORMATION SHEET



RIG INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.WELL TARWHINE No. 1

OWNER	SOUTH SEAS DRILLING COMPANY
NAME AND NUMBER	SOUTHERN CROSS (N ^o 107)
TYPE	SEMI-SUBMERSIBLE , TWIN HULLED.
DERRICK, DRILL FLOOR & SUBSTRUCTURE	DERRICK: LEE C MOORE, 152' HIGH X 40' AT BASE. LOAD CAPACITY OF 1 000 000 lbs
DRAWWORKS	OILWELL E-2000 DRIVEN BY 2 GE 752 ELECTRIC MOTORS.
CROWN BLOCK	LEE C MOORE 27458 C. CAPACITY 500 SHORT TONS.
TRAVELING BLOCK	OILWELL A 500
SWIVEL	OILWELL PC 425
ELEVATORS	BYRON JACKSON MODEL GG CAPACITY 350 TON
KELLY & KELLY SPINNER	DRILLCO 5 $\frac{1}{4}$ " x 50' HEX KELLY
ROTARY TABLE	OILWELL A 37 $\frac{1}{2}$ SINGLE ELECTRIC MOTOR
ROTARY SLIPS	VARCO DCS-L
MUD PUMPS	TWO OILWELL A 1700PT. RATED AT 1600HP
MUD SYSTEM	FOUR MUD TANKS HAVING A TOTAL CAPACITY OF 1200 BBL, AND ONE PILL TANK HAVING A CAPACITY OF 105 BBL.
	TWO MUD HOPPERS POWERED BY 2 MISSION 6x8" CENTRIFUGAL BY TWO 100 HP ELECTRIC MOTORS.
	DESANDER : 1 DEMCO 4 CONE 12" MODEL N ^o 124
	DESILTER : 1 DEMCO 4"-16H 16 CONE
	DEGASSER : 1 SWACO MODEL N ^o 36
BLOW OUT PREVENTORS	SHALE SHAKERS : 2 BRANDT DUAL UNIT TANDER - GHI DUAL UNIT.
	THREE SHAFFER L.W.S. 18 $\frac{3}{4}$ " - 10 000 psi
	TWO HYDRIL G.L. 18 $\frac{3}{4}$ " - 5000 psi
WELL CONTROL EQUIP.	FOUR VALVCON ACCUMULATORS. 2" - 10 000psi
	CHOKES: 2 C.I.W. ABJ H2 2 1/16" - 10 000 psi, 1 SWACO SUPER CHOKE
TUBULAR DRILLING EQUIPMENT	DC : 6 $\frac{1}{4}$ " x 2 13/16" (4" IF TJ)
	8 " x 2 13/16" (6 5/8" H90 TJ)
	9 $\frac{3}{4}$ " x 3" (7 5/8" H90 YJ)
	HWDP : 5" 50lb/ft GRADE G (6 $\frac{1}{2}$ " OD 4 $\frac{1}{2}$ " IF TJ)
	DP : 5" 19 $\frac{1}{2}$ lb/ft GRADE G&E (6 3/8" OD 4 $\frac{1}{2}$ " IF TJ)
CEMENTING UNIT	HALLIBURTON HT-400 UNIT
MONITORING EQUIPMENT	MARTIN DECKER : MUD VOLUME TOTALIZER 6 CHANNEL DRILLING RECORDER 4 PRESSURE GAUGES FLOWSHOW INDICATOR
POWER SUPPLY	2 EMD MD 18 DIESEL ENGINES RATED AT 1950 HP EACH 1 EMD MD 12 DIESEL ENGINE RATED AT 1500 HP
DIRECTIONAL EQUIP.	-
MISCELLANEOUS (E.G. RISER, COMPENSATION SYSTEM, PIPE RACKER, DP EQUIPMENT)	
RISER: REGAN FC-7 TELESCOPIC 21" ID. PLUS FLOW DIVERTOR.	
CASING POWER TONGS: ECKEL 13 3/8" (20 000 ft lbs), 20" (35 000 ft lbs)	
BIT BULK TANKS: 3x1570cu ft. RISER TENSIONER: 6 WESTERN GEAR, 50'SROKE, 80 000lbs.	
MUD BULK TANKS: 3x1570cu ft. GUIDE LINE TENSIONERS : 4 WESTERN GEAR 16 000 lbs, 40'SROKE	

6. WELL INFORMATION SHEET



WELL INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.
 WELL TARWHINE No. 1

Sheet No. 1

WELL NAME	TARWHINE No. 1										
OPERATOR	ESSO AUSTRALIA LTD.										
PARTNERS	BHP										
RIG	OWNER	SOUTH SEAS DRILLING COMPANY									
	NAME OR NUMBER	SOUTHERN CROSS									
	TYPE	SEMI-SUBMERSIBLE									
LOCATION	LATITUDE (X)	38° 24' 17.880"				LONGITUDE (Y)	147° 31' 41.556"				
	FIELD	GIPPSLAND BASIN				AREA	BASS STRAIT				
	COUNTY					STATE					
	COUNTRY	AUSTRALIA									
	DESCRIPTION										
DATUM POINTS	Ground Elevation	-				RKB to Ground Level	-				
	Mean Water Depth	43.8m				RKB to Water Level	21.2m				
DATES	SPUD	20 NOV 1981				TOTAL DEPTH	28 DEC 1981				
HOLE SIZES	Depth From	Depth To	Bit Size"	No. Of Bits	No. of Reamers	Date From	Date To	Cased	Logged		
	65	204	26	1	0	20 NOV 81	20 NOV 81	20"	N		
	204	799	17 1/2	1	0	22 NOV 81	23 NOV 81	13 3/8	Y		
	799	2955	12 1/4	15	0	25 NOV 81	28 DEC 81	9 5/8	Y		
DRILLING FLUID	Depth From	Depth To	Weights		Type						
	65	204	8.6 TO 8.6		SEAWATER						
	204	2955	8.6 TO 10.1		SEAWATER GEL						
			TO								
			TO								
			TO								
			TO								
WIRELINE LOGGING	Depth From	Depth To	Hole Size"	Date Run	Logs Run						
	65	799	17 1/2	23 NOV 81	ISF-BHC-GR						
	784	1495	12 1/4	30 NOV 81	DLL-MSFL-GR-SP; LDT-CNL-GR,						
	-	-	-	1 DEC 81	RFT No 1, No 2, No 3 (misrun)						
	-	-	-	5 DEC 81	VELOCITY SURVEY						
	-	-	-	6 DEC 81	RFT No 4, No 5						
	2519	1575	12 1/4	13 DEC 81	DLL-MSFL-GR-SP; LDT-CNL-GR; BHC-GR						
	2519	1575	12 1/4	14 DEC 81	HDT; VELOCITY SURVEY						
-	-	-	15 DEC 81	RFT No 6, No 7 No 8; CONTINUED ON SHEET 2							
RISER, CASING & LINER	Depth From	Depth To	OD "	ID "	Weight	Grade	Threads	Date Run	Cement	Stages	Excess
	3	65	23	21	-	-	- RISER	-	-	-	-
	65	190	20	19.124	94	X 52	BUTT	21 NOV 81	"N"	1	-
	65	784	13 3/8	12.415	54.5	K 55	BUTT	24 NOV 81	"N"	1	-
	65	2930	9 5/8	8.681	47	N 80	BUTT	31 DEC 81	"N"	2	-



WELL INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD
 WELL TARWHINE No 1

Sheet No. 2

WELL NAME	CONTINUATION OF WIRELINE LOGGING DATA										
OPERATOR											
PARTNERS											
RIG	OWNER										
	NAME OR NUMBER										
	TYPE										
LOCATION	LATITUDE (X)					LONGITUDE (Y)					
	FIELD					AREA					
	COUNTY					STATE					
	COUNTRY										
DATUM POINTS	Ground Elevation					RKB to Ground Level					
	Mean Water Depth					RKB to Water Level					
DATES	SPUD					TOTAL DEPTH					
HOLE SIZES	Depth From	Depth To	Bit Size	No. Of Bits	No. of Reamers	Date From	Date To	Cased	Logged		
DRILLING FLUID	Depth From	Depth To	Weights		Type						
					TO						
					TO						
					TO						
					TO						
					TO						
					TO						
					TO						
WIRELINE LOGGING	Depth From	Depth To	Hole Size	Date Run	Logs Run						
	-	-	-	16 DEC 81	CST x 3 RUNS						
	2815	2520	12 1/4"	23 DEC 81	HDT						
	2809	2510	12 1/4"	23 DEC 81	DLL-MSFL-GR						
	2813	2515	12 1/4"	23 DEC 81	LDL-CNL-GR						
	2813	784	12 1/4"	23 DEC 81	BHC-GR-SP						
	-	-	12 1/4"	24/5DEC81	RFT'S 9,10,11, & 12						
	2951	2809	12 1/4"	28 DEC 81	DLL-MSFL-GR						
2953	2813	12 1/4"	29 DEC 81	BHC-GR-SP							
RISER, CASING & LINER	Depth From	Depth To	OD	ID	Weight	Grade	Threads	Date Run	Cement	Stages	Excess



WELL INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.
 WELL TARWHINE No 1

Sheet No. 3

WELL NAME	CONTINUATION OF WIRELINE LOGGING DATA										
OPERATOR											
PARTNERS											
RIG	OWNER										
	NAME OR NUMBER										
	TYPE										
LOCATION	LATITUDE (X)				LONGITUDE (Y)						
	FIELD				AREA						
	COUNTY				STATE						
	COUNTRY										
	DESCRIPTION										
DATUM POINTS	Ground Elevation				RKB to Ground Level						
	Mean Water Depth				RKB to Water Level						
DATES	SPUD				TOTAL DEPTH						
HOLE SIZES	Depth From	Depth To	Bit Size	No. Of Bits	No. of Reamers	Date From	Date To	Cased	Logged		
DRILLING FLUID	Depth From	Depth To	Weights		Type						
			TO								
			TO								
			TO								
			TO								
			TO								
			TO								
WIRELINE LOGGING	Depth From	Depth To	Hole Size	Date Run	Logs Run						
	2953	2813	12 1/4"	29 DEC 81	LDL-CNL-GR						
	2955	2815	12 1/4"	29 DEC 81	HDT						
	-	-	12 1/4"	29 DEC 81	VELOCITY SURVEY						
	-	-	12 1/4"	30 DEC 81	RFT'S 13 & 14 (PRETESTS ONLY)						
	2948.5	2486	12 1/4"	30 DEC 81	CST RUNS 4 & 5						
	-	-	9 5/8C	5 JAN 82	CCL-GR						
	2891.5	2890	9 5/8C	5 JAN 82	4" PERF. GUN						
-	-	9 5/8C	5 JAN 82	JUNK BASKET (CONTINUATION ON SHEET 4)							
RISER, CASING & LINER	Depth From	Depth To	OD	ID	Weight	Grade	Threads	Date Run	Cement	Stages	Excess



COMPANY ESSO AUSTRALIA LTD.
 WELL TARWHINE No. 1

WELL INFORMATION SHEET

Sheet No. 4

WELL NAME	CONTINUATION OF WIRELINE DATA										
OPERATOR											
PARTNERS											
RIG	OWNER										
	NAME OR NUMBER										
	TYPE										
LOCATION	LATITUDE (X)						LONGITUDE (Y)				
	FIELD						AREA				
	COUNTY						STATE				
	COUNTRY										
	DESCRIPTION										
DATUM POINTS	Ground Elevation						RKB to Ground Level				
	Mean Water Depth						RKB to Water Level				
DATES	SPUD						TOTAL DEPTH				
HOLE SIZES	Depth From	Depth To	Bit Size	No. Of Bits	No. of Reamers	Date From	Date To	Cased	Logged		
DRILLING FLUID	Depth From	Depth To	Weights		Type						
					TO						
					TO						
					TO						
					TO						
					TO						
					TO						
					TO						
WIRELINE LOGGING	Depth From	Depth To	Hole Size	Date Run	Logs Run						
	-	-	9 5/8 C	5 JAN 82	SET BAKER PACKER @ 2870 m						
	1801.5	1800	9 5/8 C	5 JAN 82	4" PERF. GUN						
	-	-	9 5/8 C	6 JAN 82	TEMPERATURE SURVEY						
	-	-	9 5/8 C	7 JAN 82	CBL						
	-	-	9 5/8 C	8 JAN 82	FIT No 1 @ 2779m						
	-	-	9 5/8 C	9 JAN 82	FIT No 2 @ 2661.5 m						
	-	-	9 5/8 C	9 JAN 82	GAUGE RING & JUNK BASKET						
-	-	9 5/8 C	9 JAN 82	SET PACKER @ 2640 m (CONTINUATION: SHEET 5)							
RISER, CASING & LINER	Depth From	Depth To	OD	ID	Weight	Grade	Threads	Date Run	Cement	Stages	Excess



WELL INFORMATION SHEET

COMPANY ESSO AUSTRALI LTD.
 WELL TARWHINE No 1

Sheet No. 5

WELL NAME											
OPERATOR											
PARTNERS											
RIG	OWNER										
	NAME OR NUMBER										
	TYPE										
LOCATION	LATITUDE (X)						LONGITUDE (Y)				
	FIELD						AREA				
	COUNTY						STATE				
	COUNTRY										
	DESCRIPTION										
DATUM POINTS	Ground Elevation						RKB to Ground Level				
	Mean Water Depth						RKB to Water Level				
DATES	SPUD						TOTAL DEPTH				
HOLE SIZES	Depth From	Depth To	Bit Size	No. Of Bits	No. of Reamers	Date From	Date To	Cased	Logged		
DRILLING FLUID	Depth From	Depth To	Weights		Type						
			TO								
			TO								
			TO								
			TO								
			TO								
			TO								
WIRELINE LOGGING	Depth From	Depth To	Hole Size	Date Run	Logs Run						
	-	-	9 5/8 C10	JAN 82	PERF GUN (MISRUN)						
	2667.5	2656	9 5/8 C11	JAN 82	PERF GUN; PWT 1						
	-	-	9 5/8 C11	JAN 82	HP-AMERADA						
	-	-	9 5/8 C13	JAN 82	PRESSURE SURVEY						
	-	-	9 5/8 C15	JAN 82	GAUGE RING AND JUNK BASKET						
	-	-	9 5/8 C15	JAN 82	SET PACKER @ 1372 m						
	1400.5	1398	9 5/8 C16	JAN 82	PERF GUN						
1400.5	1398	9 5/8 C16	JAN 82	PWT 2							
RISER, CASING & LINER	Depth From	Depth To	OD	ID	Weight	Grade	Threads	Date Run	Cement	Stages	Excess

7. WELL HISTORY.

WELL HISTORY - Tarwhine No. 1.

- 20/11/81 Dropped the anchors, giving a final fix of $38^{\circ} 24' 17.35''S$, $147^{\circ} 31' 41.28''E$ (which was 7m at 290° from the called location). Ballasted down the rig to 42' draft. Lowered T.G.B. to seafloor (weight plus blocks = 110 KIPS in water). Ran TV and unjayed from T.G.B. Recovered and laid down 'J' tool. Strapped the drill string to find the water depth. (43.8m). Laid down 3 joints of HWDP. Made up BHA and R.I.H. Tagged seafloor (RKB - Seafloor = 64.84m). Spudded in at 1315 hours. Drilled 26" hole from 65 to 204 metres with a $17\frac{1}{2}''$ bit and 26" hole opener. POOH to run surface casing. (Ballasted down rig on first connection to 47' 6" to eliminate POH). Hard drilling to 126m (spotted hi-vis pills as needed).
- 21/11/81 Circulated out. Flushed the hole by pumping 30 bbls of hi-vis gel, and spotted 150 bbls hi-vis gel in hole. Dropped survey, POOH to 87m, and recovered the survey, $\frac{3}{4}^{\circ}$ at 204m. R.I.H. - there was no fill. Circulated and spotted 300 bbls of hi-vis gel. POOH. Ran 20" casing (10 joints, overall length 128m) Ran drill pipe stinger. Filled the casing with seawater and installed Bull plugs in the running tool. Landed to 20" casing at 190.6m. Could not circulate with the Howco unit, so switched to rig pump - the tugger line caught on the chocksands and broke the cement line. Checked out blockage in lines. Found lo-torque valve cemented up on Howco unit. Circulated the 20" casing and tested the lines to 2,000 psi - OK. Cemented the 20" casing through the test line with 627 sacks of class "N" cement plus 12% gel and 2% Ca Cl in 194 bbls of fresh water (Slurry weight = 12.6 ppg), followed by 350 sacks of "neat" mixed in 43 bbl seawater (slurry weight = 15.6 ppg). Displaced cement with 15 bbls of seawater. The float held (full's eye $\frac{3}{4}^{\circ}$). Full returns. The running tool was backed out, and then POOH. Good cement returns. Rigged up and ran the BOP stack. Function tested both pads. Tested choke and kill lines to 200/5000 psi.
- 22/11/81 Rigged up the slip joint, and landed the stack. Pull tested to 15,000 over-pull. Unbolted the slip joint. Rigged up the diverter (tested the connections and cement to 200/500 psi - OK). Backed out the diverter handling tool. Set the wear bushing. Function tested the BOP with the blue and yellow pads. POOH. Made up the BHA. Laid down 21 joints "E" drill pipe and 3 joints HWDP from the derrick. Picked up the kelly, lagged the cement at 184m. Using the diverter, seawater was pumped through overboard lines. Drilled cement from 184 to 204 metres (bit No. 2 : HTC, OSC 3AJ, $17\frac{1}{2}''$, 3 x 20). Drilled $17\frac{1}{2}''$ hole from 204m to 537m, spotting high-vis mud when required. (Only a trace of gas was detected).
- 23/11/81 Drilled $17\frac{1}{2}''$ hole from 537 to 599 metres. Shaker screens were cleaned out after becoming plugged with sand. Drilled $17\frac{1}{2}''$ hole from 599 to 799 metres. Casing point reached. No gas. Circulated out. Dropped a survey, and pumped slug. POOH to the 20" casing shoe, and retrieved the survey (1°). Made a wiper trip. Circulated and cleaned the hole. POOH slowly because of 20,000 to 30,000 lbs drag. Rigged up Schlumberger and ran ISF-SONIC-GR logs for the interval 799-65 metres.

- 24/11/81 Ran BHC-ISF logs (799-65 metres). Rigged down Schlumberger and service tools. Made up casing landing string and cement plug. Made up BHA and R.I.H. Circulated out. Pumped slug, and POOH. No tight spots were encountered. Made up the wear bushing running tool. Washed the well-head and POOH. Rigged up and ran the 13 3/8" casing (60 joints; JAP; weight = 54.5; Grade = K55; Buttress threads). Pulled up the hanger in the derrick. Ran in and landed the hanger. The shoe was set at 784.07 metres. Rigged up Halliburton chucks and cementing head. Circulated with the rig pumps. Pumped through the lines with Halliburton pump. Tested lines to 3000 psi. The cement mix comprised 643 sacks of class "N" cement and 80 bbls of fresh water, followed by 300 sacks of class "N" cement mixed with 37 bbls of seawater, and displaced with 355 bbls of mud. The plug was bumped with 1500 psi. Rigged down Halliburton. POOH. The hanger was backed out, and the wash tool pulled up. Tagged in the hole, washed the wellhead, and POOH. Pulled up the seal assembly and landed it. Tested the BOP and seal assembly to ESSO specifications.
- 25/11/81 POOH with the seal assembly running tool and rigged down same. Made up, ran in and set the 18 3/4 x 13 3/8 wear bushing. POOH. Broke down the 9 3/4" DC and BHA. Made up the new BHA and bit number 3. Pressure tested the blind rams to 1500 psi - OK. R.I.H. and tagged cement at 756 metres. Drilled cement from 756 to 799 metres, then drilled 12 1/4" hole from 799 - 805 metres. (bit No. 3 : HTC x 3A, 12 1/4", 3 x 16). Circulated the hole clean. POOH to casing. Hung off on rams. Carried out a leak-off test. (Pumping rate was 3/4 bbl/min to 13.5 ppg equivalent mud weight. Set back the hanging assembly. Tagged in the hole, and drilled from 805 to 896m. Very little background gas was experienced (maximum of 0.3 units).
- 26/11/81 Drilled 12 1/4" hole from 896m to 1133 metres, reaming tight spots and spotting high viscosity mud when necessary. Maximum gas in this interval was 1 unit. There was 40,000 bbls overpull at 943 metres. Drilled from 1133 to 1286 metres. (Maximum gas was 4 units over a background of 1 unit). Diesel was added to case tight hole problems. Mud ball accumulated in the riser, and lost circulation occurred. Worked pipe, and flushed the riser. Drilled slowly from 1286 to 1293 metres, because of Gumbo (maximum gas was 5 units; background was 1 unit). Cleaned hole, and flushed the riser. Checked for flow. Dropped a Totco, then POOH for a bit change, since bit number 3 had currently accumulated 30 hours drilling. (The bit was graded at 3-5-I : not worn, but still uneconomical as indicated by the Core Lab bit cost program).
- 27/11/81 POOH to surface. Changed the bit and R.I.H. to 784 metres (bit No. 4 : HTC x 3A, 12 1/4", 3 x 16). Hung off the drill string and broke circulation. R.I.H. to 1247m. Wash and reamed from 1247 - 1293 metres. (Trip gas was 33 units). Drilled 12 1/4" hole from 1293 to 1392 metres. Background gas increased continuously during this drilled interval, from 5 - 35 units. Checked for flow - none. Circulated up a drill-break of 4 metres (1388 - 1392 metres : loose, coarse sand) and obtained 840 units of gas. Continued circulating bringing the mud weight up to 10.2+. Checked for flow. Pumped a slug. POOH to the 13 3/8" casing shoe (experienced a drag of 30 - 40,000 lbs). The hole took 16.5 bbls for 22 stands of drill pipe.

- 27/11/81 Monitored the trip tank - no flow. Tagged in the hole. continued. Circulated bottoms up and detected 60 units of gas (coming from the coarse clastics at 1385 - 1392m). Checked for flow - none. Dropped a Totco, and pumped a slug. POOH, having decided to cut a core.
- 28/11/81 Broke out the bit, bit-sub and stab. Retrieved the survey (1^o). Made up and serviced the core barrel. R.I.H. circulated. Dropped the ball and circulated (maximum gas was 11 units). Cut core from 1392 - 1405 metres using a Christensen C22 bit, 8 15/32", TFA equivalent : 3 x 13). Pumped a slug and POOH. Broke the core barrel out and recovered the core (85%). R.I.H. with the same core barrel and bit. Circulated bottoms up (30 units Trip Gas). Started cutting core No. 2 with 12,000 WOB, 65 RPM, and 500 psi. Increased WOB to 14,000, RPM to 80, and pump pressure to 600 psi. Cored 13 metres in total to 1418 metres (Maximum gas was 18 units of the circulated samples in both cores). Pumped slug, POOH and chained out.
- 29/11/81 Finished tripping out. Recovered 76% of core No. 2. Broke down the 6" drill collars and serviced the core barrel. Made up bit No. 6 (HTC x 3A, 12 1/4", 14, 14, 15) and BHA. R.I.H. to 1392 metres. Reamed from 1392 to 1418m. (Maximum gas was 90 units). Drilled 12 1/4" hole from 1418 - 1450m. (Trip gas at 1418m was 2-32-6). Circulated a drill-break of 2 metres up (1449 - 1450m) and obtained 1 unit of gas only. Drilled 12 1/4" hole from 1450 - 1463 metres (maximum gas : 1 unit). Drilled from 1463 - 1495m (obtaining trace gas only). Decided to trip out because of the low penetration rates and hence uneconomical as indicated by the Core Lab cost program. Dropped a Totco, and pumped slug. POOH partly (drill string was pulling wet). Pumped a second slug, pulled out to the casing shoe, retrieved the Totco (1 1/4^o) and serviced the rig. Broke out and examined the bit (condition was 7-6-3/4). Tagged in the hole with bit No. 7 : HTC JD4, 12 1/4": 15, 15, 14; and laid down 1 washed HWDP and 1 washed DP. Laid down 9 joints to ream with. Filled pipe. Tagged in hole to 1392 metres. Reamed from 1392 - 1493m.
- 30/11/81 Reamed from 1493 - 1495 metres. Drilled 12 1/4" hole from 1495 - 1585m (the maximum gas was 3 units over a background of 1 unit). Very slow penetration rates indicated a dulled bit. Dropped a Totco survey (misrun). Circulated bottoms up. Chained out of the hole. The bit was graded 7-4-5/16, its condition being due to excessive reaming. Rigged up Schlumberger and ran :
(1) DLL - MSFL - GR. (2) FDC - CNL - GR.
Rigged down Schlumberger. Made up the BHA and serviced the HWDP's. Ran in the hole with bit No. 8 (HTC x DG, 12 1/4" ; 15, 15, 14) to ream tight spots.
- 1/12/81 R.I.H. to 1558m. Reamed from 1558 - 1585m. The hole was clean. Circulated bottoms up (Trip gas : 9 units). Dropped a Totco, pumped slug and POOH. Rigged up Schlumberger, ran RFT No. 1 and collected samples from 1406.4m. RFT No. 2 was a misrun. Ran RFT No. 3 and retrieved samples from 1396.6m. Rigged down the RFT tool and rigged up the Velocity Survey equipment.

- 2/12/81 Rigged down Schlumberger, R.I.H. and pulled the wear bushing. Set-back the wear bushing, and pulled up to test the cup. Tagged in the hole. Tested the BOP : annular preventers 200 - 3500 psi ; and rams 200 - 5000 psi. POOH and laid down the test plug. Tagged in the hole and ran the wear bushing. Made up the new bit (bit No. 9 : HTC J22, 12 1/4"; 15, 15, 14). Tagged in the hole, broke circulation, broke in the bit and drilled from 1585 - 1720 metres. Only a trace of gas was detected in this drilled interval.
- 3/12/81 Drilled 12 1/4" hole from 1720 - 1912 metres (yielding a maximum of 4 gas units).
- 4/12/81 Drilled 12 1/4" hole to 1986m (maximum gas was 8 units over a trace of background gas). Circulated out, checked for flow, and ran a deviation survey. Pumped a slug and POOH to run logs; found a tight spot at 1440m. Reamed from 1401 - 1411m. POOH to the shoe, and retrieved the survey. R.I.H. to 1966m and reamed to 1986m. Circulated for 75 minutes, pumped a slug, and POOH.
- 5/12/81 R.I.H. with bit No. 8RR (HTC x DG). Reamed from 1176 - 1986m. Circulated for 2½ hours, pumped a 40 bbl hi-vis pill and heavy-weight slug. POOH to 1450m. Pumped a 45 bbl hi-vis pill, displaced the pill with 48 bbl of mud and pumped a 25 bbl heavy-weight pill; POOH. Rigged up Schlumberger and ran Velocity Data's Velocity survey. Rigged up to run RFT No. 4.
- 6/12/81 Ran RFT No. 4 and took a sample at 1387.7m. Ran RFT No. 5 and took a sample at 1399m. R.I.H. with NB No. 10 (HTC J22, 12 1/4"). Found no fill, drilled from 1986 - 2076m. (Trip gas at 1986m : 1-12-1). Only trace gas was detected in the drilled interval.
- 7/12/81 Drilled 12 1/4" hole from 2076 - 2161m (trace background gas). Decided to pull the bit due to slow penetration rates. Pumped a 70 bbl hi-vis pill and circulated the hole clean. Dropped a survey and pumped a slug. POOH with no drag. The deviation was 2° at 2161m, and the bit was graded 8-5-1/8.
- 8/12/81 R.I.H. with bit No. 11 (HTC J33, 12 1/4"). Reamed from 2145-2161m, and drilled to 2255m, experiencing only a trace of gas. (Trip gas at 2161m was 0-1-0).
- 9/12/81 Drilled to 2292m (1 unit maximum gas) and made a wiper trip. Pulled 20 stands to 1730m, ran to bottom, and drilled to 2304m where a flow check was made. Drilled to 2324m (maximum gas : 3 units), dropped a survey, pumped a slug, and POOH due to low rates of penetration.

- 10/12/81 Continued to POOH and retrieved the survey tool (misrun). Pulled the wear bushing, ran the test plug and tested the BOP to 5000 psi. Recovered the test plug and ran the wear bushing. R.I.H. to 2308m, reamed from 2308 - 2324m, and drilled ahead to 2381m. (Trip gas : 0-3-0). The drilled interval yielded 81 units maximum gas, over a background of 2 - 3 units.
- 11/12/81 Drilled from 2381 - 2425m (Gas : 57 units maximum; 4 - 5 units background); and circulated out. Pumped a slug and made a 20 stand wiper trip. Ran back to 2424m and found 1m of fill. Reamed to 2425m and drilled to 2460m. (STG : 2-4-2 units; Gas : 24 units maximum, 2 units background). Circulated out.
- 12/12/81 Drilled to 2505 metres (Gas: 154 units maximum, background 3-5 units). Circulated out. Drilled to 2521m (Gas: 11 units maximum, 2 units background), circulated out, dropped a survey and pumped slug. Made a wiper trip as far as the show. Retrieved the survey (misrun) and ran back in.
- 13/12/81 Circulated out, dropped a survey (2521m, misrun), pumped a slug and POOH to run logs at this tentative TD. Laid down the core barrel. Ran the following wireline logs:
 Run No. 1 : DLL-MSFL-GR-SP)
 Run No. 2 : LDT-CNL-GR) 2519 - 1575 metres.
 Run No. 3 : BHC-GR)
- 14/12/81 Continued to run wireline logs:
 Run No. 4 : HDT (2519 - 1474 metres)
 Run No. 5 : Velocity Survey.
 Run in to condition hole before RFT runs. Dropped a survey, pumped a slug, and POOH.
- 15/12/81 Ran RFT No. 6 (misrun). Changed the probe and ran RFT No. 7. Collected this sample (2403.4 metres) and made run RFT No. 8.
- 16/12/81 Continued RFT Run No. 8 and recovered this sample from 2365.5m Laid out tools. Made up and ran CST No. 1, CST No. 2, and CST No. 3. Laid out tools and rigged down Schlumberger. Made up bit No. 13 (HTC J7, 12 $\frac{1}{4}$ ") and serviced the 9 5/8" water head. R.I.H., broke circulation and reamed from 2497 - 2521 metres. (T.G. at 2521m : 1-20-4 units). Worked the junk sub, and drilled 12 $\frac{1}{4}$ " hole from 2521 - 2530m.
- 17/12/81 Drilled 12 $\frac{1}{4}$ " hole from 2530 - 2535m (Gas: 5 units maximum; 1 unit background). Pumped slug and POOH. Broke out the mill-junk bit (condition: 3-2-1) and junk sub. Retrieved the wear bushing. R.I.H. with the test plug. Tested the stack (all rams and choke and kill lines to 200/5000 psi). Tested annulars to 200/3500 psi (OK). POOH and broke out the test plug. Set wear bushing. Made up BHA and bit No. 14 (HTC J33, 12 $\frac{1}{4}$ ") and ran in to 1366 metres. Simulated hang-off drilling and filled pipe (drilled for 8 minutes). R.I.H. to 2535m and drilled 12 $\frac{1}{4}$ " hole

- 17/12/81 down to 2560m (T.G. at 2535m : 0-10-1 units: Gas: maximum
continued 27 units, background 2 units). Circulated the sample up at
2555m. Repaired the wash pipe and swivel.
- 18/12/81 Drilled 12 $\frac{1}{4}$ " hole to 2600 metres with flow checks. (Gas: 38 units
maximum, 1 unit background). Circulated out drill; break samples
at 2579m (21 units) and 2597m (5 units). At 2600m, 400 psi pump
pressure was lost. Checked the surface equipment, lost a
further 750 psi, so POOH slowly, looking for a washout. Found
2 joints of HWDP washed out. Laid down all HWDP. Made up bit No. 15
(HTC J33, 12 $\frac{1}{4}$ ") and pulled up 3 8" DC's. R.I.H. to the shoe.
Filled pipe and simulated "hang off" drilling for 9 minutes.
R.I.H. to 2562m. Reamed from 2562 - 2600 metres. Drilled
12 $\frac{1}{4}$ " hole from 2600 - 2602m. (T.G. was 20 units at 2600m).
- 19/12/81 Drilled 12 $\frac{1}{4}$ " hole from 2602 - 2645m, (Gas: 24 units maximum,
2 units background), with flow checks. Circulated up the sample
from a drill-break at 2614m (6 units). Drilled from 2645 -
2663m. (Gas: 70 units maximum, 7 units background).
Circulated samples up at 2657m (53 units), and 2663 (15 units).
Dropped survey and pumped slug. POOH, 70,000 lbs overpull at
2504m. The bit was pulled since core point had been reached.
Broke off bit No. 15 and inspected it (condition: 3-3-1/8).
Retrieved survey. Picked up the core barrel and made up the
Christensen bit (C-20, 8 15/32").
- 20/12/81 Serviced the core barrel, R.I.H. and tagged the bottom at 2663m.
Circulated bottoms up. Spaced out and dropped the ball.
Cut core No. 3 from 2663-2669m (2 units maximum gas circulated).
Pumped slub and POOH, strapping the pipe. Recovered the core:
5.85 metres (97 $\frac{1}{2}$ %). Racked up the core barrel back in the derrick
and made up bit No. 17 (HTC J33, 12 $\frac{1}{4}$ "). R.I.H. to the shoe.
Simulated "hang off" drilling for 5 minutes. Filled pipe and
serviced the rig. R.I.H. to 2643m, laying down 12 joints of
grade "G" drill-pipe. Reamed core rathole from 2663-2669m.
(T.G. 12 units; 3 units background gas during reaming).
- 21/12/81 Drilled 12 $\frac{1}{4}$ " hole from 2669-2773 metres. Serviced swivel
packing and bushings (Gas: 53 units maximum; 5 to 6 units background)
- 22/12/81 Drilled 12 $\frac{1}{4}$ " hole from 2773-2786m (Gas: 43 units maximum,
3 units background). Pumped slug, and pulled 20 stands to
2219m. (The hole took 2 $\frac{1}{2}$ barrels on the trip out). R.I.H. and
drilled 12 $\frac{1}{4}$ " hole from 2786-2815m. (WTG: 4-21-11;
Gas: 28 units maximum, 2 units background). Circulated bottoms
up. Checked for flow, pumped slug, and POOH to 13 3/8" shoe.
Checked for flow, and serviced the rig. T.I.H. filled the pipe.
Circulated bottoms up. Pumped slug, and POOH to run wireline
logs (The spinning wrench was used up to the casing shoe).
Rigged up Schlumberger and ran the DLL-MSFL-GR logs.

- 23/12/81 Continued running the DLL-MSFL-GR logs from 2815-2460m. Retrieved, laid out and serviced tools. Carried out Run No. 2: LDT-CNL-GR from 2815-2460 metres. Laid out and serviced tools. Run No. 3: BHC-GR (2813-784m). The well took 33 bbls of mud during 12 hours of logging. Retrieved and laid out tools. Rigged up and ran the depth tool. Rigged down Schlumberger. T.I.H. and made a wiper trap.
- 24/12/81 Circulated and conditioned mud, and serviced the rig. Pumped a slug and then POOH. Rigged up the Schlumberger compensator line. Picked up tools and R.I.H. with the RFT equipment, and ran RFT No. 9 (misrun because of mechanical problems). Ran RFT No. 10 and retrieved the sample from 2659.4 metres.
- 25/12/81 Serviced and ran RFT No. 11. Retrieved the sample from 2779m, laid down tools and rigged down the compensator line. Made up rerun bit No. 15 and R.I.H. Simulated BOP drill. Filled pipe, and R.I.H. to 2815m. Circulated and cleaned hole for further logging. Well took 13½ bbls during 6½ hours of logging. Circulated hole clean. Pumped slug and POOH (using the spinning wrench as far as the casing shoe). Rigged up Schlumberger, made up and ran RFT No. 12. Recovered the sample from 2498.5m and rigged down Schlumberger. R.I.H. and pulled the wear bushing. Pulled up the test cup, put new cup on tool, T.I.H. and landed the tool.
- 26/12/81 Fully function tested the BOP to Esso specifications. Pulled the 18¾ x 13 3/8" test cup and broke down same. Ran the 18¾" x 13 3/8" wear bushing. Made up bit No. 18 (HTC J33, 12¼"), checked the float and Totco run. R.I.H. Simulated "hang off" drilling and filled pipe. Serviced the rig. R.I.H. to 2786m. Broke circulation and reamed from 2786 - 2815m (as a precaution). Drilled 12¼" hole from 2815 to 2883m (TG: 21 units at 2815m; Gas: 18 units maximum, 3 units background). Changed the swab on No. 1 pump. Pulled the caps on No. 2 pump (there was debris under the suction valve). Serviced the blocks, swivel and D.S.C.
- 27/12/81 Drilled 12¼" hole from 2883 - 2910m (Gas: 34 units maximum, 1 unit background). Made a 20 stand wiper trip from 2910 - 2343m. No tight spots encountered. Well took 5 barrels. Drilled 12¼" hole from 2910 - 2952 metres (WTG: 5-10-4 units; Gas: 30 units maximum, 1 unit background).
- 28/12/81 Drilled 12¼" hole from 2952-2955 metres. Low penetration rates indicated a dulled bit. Circulated bottoms up. Dropped survey and pumped slug. This was the final TD. POOH (hole took 13.5 bbls) and strapped the pipe. There was 32 Kips overpull at 2716 metres. Retrieved the survey (3^o). R.I.H. circulated bottoms up (TG: 2-5-2- units). Pumped slug and POOH. Rigged up Schlumberger and made the following logging runs:

28/12/81 (1) DLL-MSFL-GR (2951 - 2809m)
continued (2) LDT-CNL-GR (2953 - 2813m)

29/12/81 (3) BHC-GR-SP (2953 - 2813m)
(4) HDT (2955 - 2815m)
(5) Velocity survey.

Rigged down Schlumberger, made up the BHA, and RIH to 2949m. Broke circulation and reamed from 2949 - 2952 metres. Circulated out. POOH.

30/12/81 Rigged up Schlumberger and made RFT pretest runs 13 and 14. Rigged down the RFT tool and rigged up the CST tool. Made 2 sidewall core runs, recovering 101 plugs altogether. Rigged down Schlumberger. Made up the casing hanger and laid down same. Made up BHA and R.I.H.

31/12/81 R.I.H. to 2955m, and circulated out. Dropped multishot and POOH taking multishot and retrieving it at the 13 3/8" shoe. R.I.H. to 2955m and circulated out. Pumped slug and POOH (there was 40 to 50,000 lbs drag on the first 8 stands). Retrieved the wear bushing and ran the 9 5/8" casing.

1/1/82 Continued to run casing. Rigged up cement head and lines and conditioned mud prior to cementing. Tested cement lines to 3000 psi and pumped 40 bbls fresh water ahead of 900 sx Aust "N" cement mixed with 111 bbls fresh water. Released the plug and displaced with mud, however the cement would not fully displace (it was only displaced 470 bbls of the calculated 697 bbls. Pressured to 1500 psi, bled, then pressured up to 2000 psi. Checked cement head and opened the DV port for the 2nd cement stage. Circulated mud for 2 hours and pumped 40 bbls of water followed by 710 sx of Aust "N" cement mixed with 88 bbls of water and 0.8% HRGL. Installed on MSC closing plug in the cement head and displaced it with 368 bbls of mud at 300 psi. (Plug was bumped with 1800 psi).

2/1/82 Laid down the casing. Washed the wallhead and hanger. POOH and tested the BOP. Ran the wear bushing and pulled up the 8 1/2" BHA and R.I.H. Tagged the DV tool at 1499m and drilled out same (with bit No. 19: HTC, OSC IG, 8 1/2"). Pressure tested the casing to 2000 psi - OK. R.I.H. and tagged cement at 1998m. Laid down some drill pipe and drilled cement to 2190 metres.

3/1/82 Drilled cement to 2460m (currently the bit had been run for 18 3/4 hours, so it was pulled, and graded at 4-6-In. Changed the bit and R.I.H. with bit No. 20: HTC J2, 8 1/2", 3 x 16. Drilled cement to 2575m.

- 4/1/82 Drilled cement out to its lower limit at 2747m. Washed to the baffle plate and circulated bottoms up. Tested the casing to 2000 psi, flusher the riser, POOH and R.I.H. with the casing scraper. Tagged the baffle plate at 2895m, circulated, and conditioned mud. POOH to run wireline logs.
- 5/1/82 Ran CCL-GR. Rigged up the 4" perforating gun and perforated from 2890 - 2891.5m (4 SPF). Hole took 22 bbls of fluid. Ran the junk basket. Set a Baker (EZSV) packer at 2870m. Perforated from 1800 - 1801.5m (4 SPF). Made up cement stinger and R.I.H. Established pressure losses at 700 psi at 60 SPM and 1350 psi when stung in. Displaced heavy mud with 9.8 ppg mud, maximum gas 25 units which dropped down to 1 unit. Pressure tested the cement lines and pumped 40 bbls of water followed by 900 SX of Aust "N" cement and 2% HRGL (slurry weight: 15.6 ppg). Displaced the cement with 8 bbls of water and 147 bbls of mud. The total mud displacement should have been 158 bbls so the cement was under-displaced by 13 bbls. Reverse circulated out 50 bbls of contaminated mud. Circulated for 2 $\frac{3}{4}$ hours and POOH. Waited on cement for a further $\frac{1}{2}$ hour and closed the blind rams. Established an injection rate of 5 $\frac{1}{2}$ bbls/min at 1400 psi. RIH with the stinger, circulated bottoms up at 1800m (Gas: 1 unit). Pumped 14 bbls of water ahead of 100 SX of Aust "N" cement followed by 2 bbls of water and 96 bbls of mud (cement plug was set from 1800 - 1712m). Pulled up 8 stands, closed the upper pipe rams and pumped 10 bbls of mud.
- 6/1/82 Squeezed the cement and bled back 5 bbls. A total of 7 bbls of slurry was squeezed into the perforations. Pumped slug and POOH. R.I.H. with the scraper to 1727, and washed and drilled cement from 1727 - 1804 metres. R.I.H. to 2863m, circulated out, and POOH. Ran a CBL.
- 7/1/82 Removed the divertor packer and made up the fluted hanger, and R.I.H. to space out. RKB to top of hanger was 62.56m. (LPR to top of hanger was 1.52m).
- 8/1/82 Ran FIT No. 1 at 2779m. Recovered only filtrate (see RFT section of this report for full details). Tested the BOP and ran FIT No. 2 at 2661.5m. Recovered only filtrate.
- 9/1/82 Ran the gauge ring and junk basket, and set a packer at 2640m. Picked up 3 $\frac{1}{2}$ ", 9.3/ft tubing and ran in the hole.
- 10/1/82 Stabbed tubing into the packer at 2640 metres. Pressure tested the annulus to 500 psi. Halliburton tested the back-side and rigged down the circulating head. Spaced out tubing; function tested the latch and subsea test tree. R.I.H. with the subsea lubricating valve and Otis service test tree. Tested choke manifold and lines to 3000 psi. Rigged up slings for 3 $\frac{1}{2}$ " tubing.

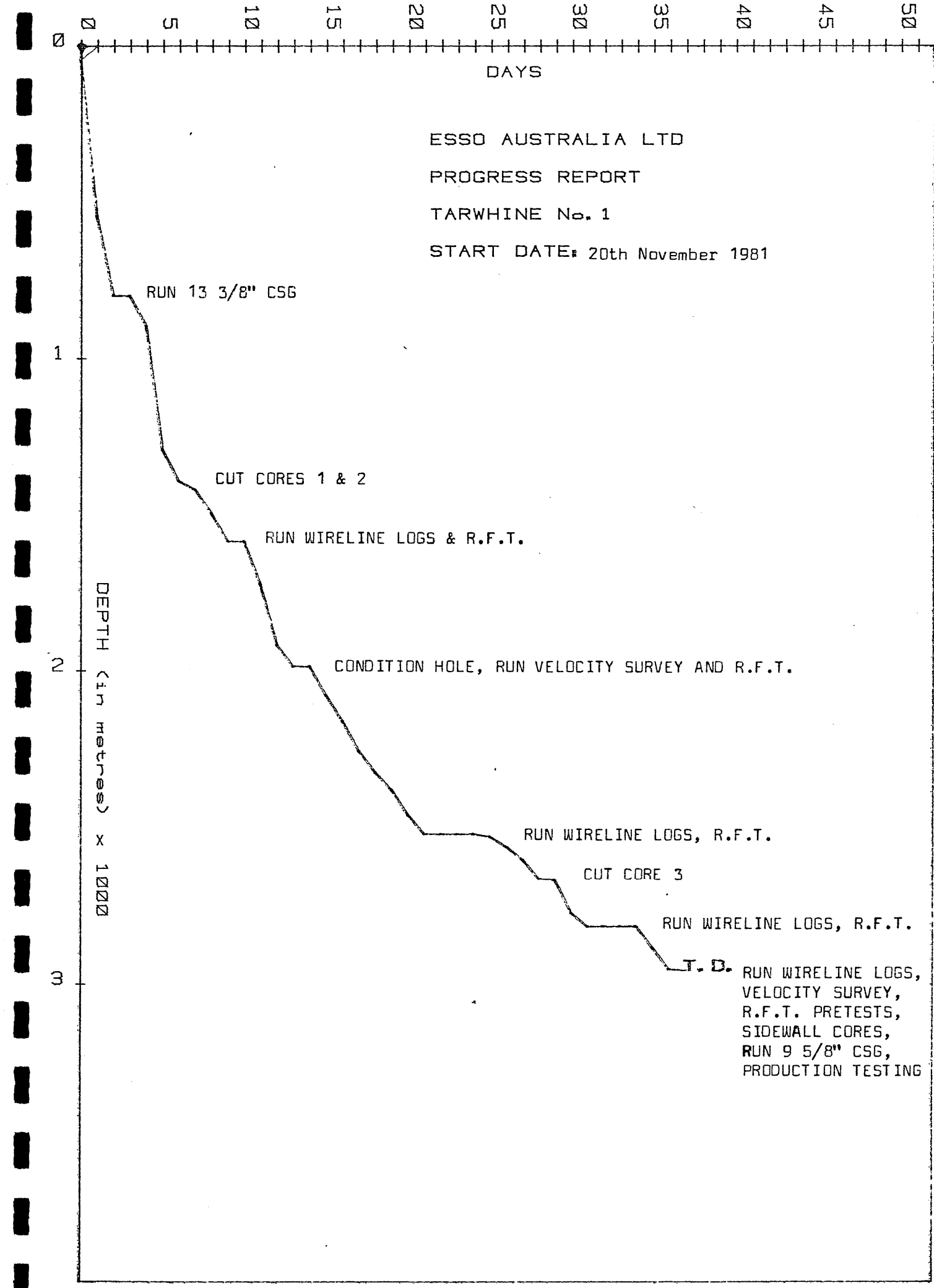
- 10/1/82
continued Turned down the pins for slings (too big for holes in thimbles). Rigged up slings. Made up surface tree and hung it on the slings from the blocks. Displaced tubing with diesel (5 bbls of water ahead plus 78 bbls diesel). Stung in packer - closed the lower pipe rams - pressure tested the annulus to 250 psi. Rigged up Schlumberger, well flowed 12 bbls ; shut in 450 psi on the tubing. Tested lubricator to 1,000 psi. R.I.H. with perforator gun and detonated. (No indication that shots fired). POOH, found primer cord had fired but shots had not fired. Rigged down Schlumberger. Waited on daylight to perforate - monitored well and annulus.
- 11/1/82 Rigged up the perforating gun. R.I.H. and perforated from 2656 - 2667.5m (Shot at 06.14 a.m., pressure 170 psi). Monitored pressure build-up, stabilizing at 425 psi. Schlumberger POOH and rigged down, while the well flowed through the test tank (maximum tubing pressure was 36 psi, maximum annular pressure was 270 psi). Rigged up Otis, swabbed the well (43 runs) and pumped 25.3 bbls diesel. The fluid level was 248 metres. Rigged down Otis, rigged up and ran Schlumberger logs: HP-Amerada.
- 12/1/82 Rigged down Schlumberger and rigged up Otis. Swabbed the well (7 runs, 7 bbls loading fluid, fluid level was 240m). Rigged down swabbing tool. Made up slick tool and lubricator and R.I.H. with same. Filled tubing with 6 $\frac{1}{4}$ bbls water. Pressured tubing to 500 psi. R.I.H. and opened the sleeve. POOH with Otis. Reverse circulated with 81.5 bbls of mud. Displaced tubing with 80 bbls of diesel. R.I.H. with Otis to close sliding sleeve. Rigged down Otis. Pressure tested annulus to 500 psi. Flowed the well.
- 13/1/82 The well produced 65.1 bbls. Swabbed 19 runs - recovered 32.7 bbls of fluid - total recovery was 97.8 bbls (68 bbls diesel, remainder was filtrate water). Swabbed well for another 51 runs, fluid recovered was 165.6 bbls (68 bbls diesel). Well stopped flowing at 22.30 hours, after 346.5 bbls had flowed. Shut-in well, R.I.H. with Schlumberger and carried out a pressure survey. Pressure at midnight was 220 psi.
- 14/1/82 Opened the well for flow. Surface pressure went from 225 to zero psi in 5 minutes. Closed the well. Final shut-in: tubing head pressure was 157 psi. POOH with Schlumberger gauges and rigged down same. The pressure was bled off the tubing. Rigged down the slings. Reverse circulated. Circulated through tubing to condition mud. POOH and laid down the Otis tree. R.I.H. and stung into the packer. Pressure tested cement lines to 3500 psi (OK). Attempted to establish injection rate - too low to pump cement. Set balance cement plug on top of packer - pumped 114 SX of cement. POOH 10 stands. Reverse circulated, but there were no cement returns. POOH, laying down the tubing.

- 15/1/82 Laid down BHA. Rigged up Schlumberger. Made up junk basket and gauge ring - ran to 1460m. Made up EZSV bridge plug and set it at 1450m. Rigged down Schlumberger. Retrieved wear bushing and tested the casing to 3000 psi (OK). R.I.H. with the test plug. Filled pipe with water to test the BOP. Tested the rams and preventers - all OK. POOH with the test plug. R.I.H. with the wear bushing. Rigged up Schlumberger. Set model D Packer with Schlumberger wireline at 1372 metres. Rigged down Schlumberger. Made up BHA, ran 3½" tubing and stung it into the packer. Tested the annulus to 500 psi and tubing to 2000 psi (OK). Made up the upper test assembly and compensator slings.
- 16/1/82 Rigged up the lines and tested the cement lines to 3000 psi. Unstung the tubing from the packer. Displaced the tubing with: 2 bbls water; 35 bbls diesel; and 2 bbls water. Stung the tubing and tested: the annulus to 200 psi; the cement lines, manifold and tubing to 1500 psi; the packer and casing to 2000 psi. Rigged up Schlumberger (BOP and lubricator) and made up and loaded the perforating gun. Tested the lubricator to 2000 psi. R.I.H. with the perforating gun and perforated from 1398 - 1400.5m (07.24 a.m., initial pressure: 300 psi). Removed perforating gun and the Schlumberger lubricator. Opened the well for initial flow at 08.25 a.m. on the 24/64 adjustable choke. Rigged up the gauges and closed in the well at 970 psi. Tested the Schlumberger lubricator to 2000 psi. Monitored bottom hole pressure. Flowed the well for 8 hours and shut-in same. POOH and rigged down Schlumberger.
- 17/1/82 Rigged up Otis and tested the lubricator to 2000 psi. R.I.H. and opened the sleeve. POOH. Made up the Otis lubricator. Reversed out of the tubing and burned off the reservoir fluid. R.I.H. with Otis and closed the sleeve. POOH. Rigged down the Otis lubricator and BOP. Unstung the tubing from the packer and reversed out - the maximum gas was 85 units. Circulated and conditioned the mud (maximum gas: 140 units; average gas: 80 - 100 units). Rigged down lines and POOH. Laid down Otis SSLV and SSTT. R.I.H. with drill-pipe to the top of the packer. Set 114 SX class "N" neat balanced cement plug on top of the packer. Cemented in place at 13.04 hours. Pulled 10 stands, and reversed out - no visible cement in returns. Pulled 10 stands, and reversed out - no visible cement in returns. Pumped a slug, POOH, and laid down the tubing. Pressure tested annulus to 3000 psi against shear rams (OK). Rigged up Schlumberger and ran the gauge ring and junk basket to 1020m. POOH. Ran and set EZSV bridge plug at 1000m. POOH. Rigged down Schlumberger. R.I.H. with 3½" tubing stinger on 5" drill pipe to 780m. Set 114 SX neat cement plug plus 14 bbls seawater (slurry weight: 15.9 ppg) from 780 - 680m. POOH to 500m and reversed out (no cement). Laid down drill-pipe. Rigged up and displaced riser with seawater. POOH laying down 5" drill-pipe and 4 stands of 3½" tubing. R.I.H. with DC's and 5" drill-pipe, and POOH laying them down. Pulled the wear bushing.

19/1/82 Pulled riser and BOP stack.

20/1/82 Pulled anchors and towed to the new location.

8. PROGRESS REPORT



ESSO AUSTRALIA LTD

PROGRESS REPORT

TARWHINE No. 1

START DATE: 20th November 1981

RUN 13 3/8" CSG

CUT CORES 1 & 2

RUN WIRELINE LOGS & R.F.T.

CONDITION HOLE, RUN VELOCITY SURVEY AND R.F.T.

RUN WIRELINE LOGS, R.F.T.

CUT CORE 3

RUN WIRELINE LOGS, R.F.T.

T.D. RUN WIRELINE LOGS,
VELOCITY SURVEY,
R.F.T. PRETESTS,
SIDEWALL CORES,
RUN 9 5/8" CSG,
PRODUCTION TESTING

DEPTH (in metres) x 1000

DAYS

0
1
2
3

0 5 10 15 20 25 30 35 40 45 50

9. BIT RECORD

BIT SIZE inches

BIT COST A dollars

JET SIZE Thirty seconds of an inch

DEPTHS Metres

HOLE MADE. Metres

DRILLING TIME. Hours

AVERAGE ROP. Metres/hour

AVERAGE COST/METRE . . . A dollars

BIT CONDITION. Teeth

Bearings

Gauge inches

COMPANY ESSO AUSTRALIA LTD.WELL TARWHINE No. 1

BIT RECORD

Sheet No. 1

S/N

Bit No.	Make	Type	IADC Code	Size $\frac{1}{4}$	Jets	Depth In m	Hole Made m	Drilling Time	On Bottom Hours	K Turns	Condition T B G	Remarks	COST	
MJ 804	1 RR	HTC	OSC 3AJ	111	17 $\frac{1}{2}$ 26	20 20 20 15 15 15	65	139	10 $\frac{3}{4}$	5.80	34	2-2-I	OUT FOR 20" CSG	7000
KX 788	2	HTC	OSC 3AJ	111	17 $\frac{1}{4}$	20 20 20	204	595	22 $\frac{1}{2}$	13.61	115	3-3-I	HOLE MADE + 10m OF CMT OUT TO RUN 13 3/8" CSG	5000
LS 196	3	HTC	X3A	114	12 $\frac{1}{4}$	16 16 16	799	494	31	21.11	162	3-5-I	OUT AFTER 31 HRS, NO TORQ/NOT WORN	1400
LR 569	4	HTC	X3A	114	12 $\frac{1}{4}$	16 16 16	1293	99	5 $\frac{1}{2}$	4.14	33	1-3-I	OUT AT CORE POINT	1400
80L05553	5 RR	CHRIST	C 22	4	8 $\frac{15}{32}$	TFA 13/13/ 13 EQUIV	1392	13	2 $\frac{1}{4}$	2.24	13	30% WN	CUT CORE NO: 1	15000
80L05553	5 RR	CHRIST	C 22	4	8 $\frac{15}{32}$	TFA 13/13/ 13 EQUIV	1405	13	3	3.02	16	80% WN	CUT CORE NO: 2	15000
KL 689	6	HTC	X3A	114	12 $\frac{1}{4}$	14 14 15	1418	77	6 $\frac{1}{4}$	4.27	35	7-6- $\frac{3}{16}$	DAMAGED WHILE REAMING ?	1400
LA 802	7	HTC	JD4	217	12 $\frac{1}{4}$	15 15 14	1495	90	9 $\frac{1}{4}$	7.22	50	7-5- $\frac{5}{16}$	(2 HOURS REAMING) DULLED BIT	1800
KZ 727	8	HTC	XDG	135	12 $\frac{1}{4}$	15 15 14	1585	0	1	0	0	1-1-I	REAM ONLY	1400
FL 595	9	HTC	J 22	517	12 $\frac{1}{4}$	15 15 14	1585	401	44 $\frac{1}{2}$	40.68	244	5-4- $\frac{3}{16}$	OUT FOR VEL SURV& RFT's	4200
KZ 727	8 RR	HTC	XDG	135	12 $\frac{1}{4}$	15 15 14	1986	0	8 $\frac{3}{4}$	0	0	1-1-I	REAM&WORK PIPE 11061986	1400
00 6PL	10	HTC	J 22	517	12 $\frac{1}{4}$	14 14 15	1986	175	33 $\frac{1}{4}$	29.75	176	8-5- $\frac{1}{8}$	BT. OUT DUE TO LOW ROP	4200
016 BL	11	HTC	J 33	527	12 $\frac{1}{4}$	14 14 14	2161	163	38	36.22	20	4-6- $\frac{3}{16}$	13 BT. OUT DUE TO LO ROP	6090
068 AL	12	HTC	J 33	527	12 $\frac{1}{4}$	14 14 14	2324	197	53	45.29	252	6-6- $\frac{1}{4}$	OUT FOR WIRELINE LOGS	6090
HT 210	13	HTC	J 7	316	12 $\frac{1}{4}$	14 14 14	2521	14	6 $\frac{1}{2}$	6.20	21	3-2-I	MILL JUNK	1800
104 AL	14	HTC	J 33	527	12 $\frac{1}{4}$	14 14 14	2535	65	10 $\frac{3}{4}$	8.77	54	5-3- $\frac{1}{8}$	OUT DUE TO WASHOUT	6090
105 AL	15	HTC	J 33	527	12 $\frac{1}{4}$	14 14 15	2600	63	15 $\frac{3}{4}$	13.94	76	3-3- $\frac{1}{8}$	OUT FOR CORE No.3	6090
81E61047	16	CHRIST	C 20	4	8 $\frac{15}{32}$	14/14/15 TFA EQUIV	2663.3	6	10 $\frac{1}{2}$	4.08	19	20% WN	CUT CORE No.3	15000
067 AL	17	HTC	J 33	527	12 $\frac{1}{4}$	14 14 15	2669	146	37	33.41	235	6-5- $\frac{3}{16}$	2 HRS REAMING OUT FOR WIRELINE LOGS	6090
027 BL	18	HTC	J 33	527	12 $\frac{1}{4}$	14 14 15	2815	140	41	36.54	218	6-6- $\frac{1}{4}$	DULLED BIT ; OUT AT T.D.	6090
2598F	19	HTC	OSC 16	131	8 $\frac{1}{2}$	28 28 28	1998	462	18 $\frac{3}{4}$	14.37	104	3-5-I	DRILLED CEMENT	900
PB 179	20	HTC	J 2	116	8 $\frac{1}{2}$	16 16 16	2460	287	8	5.46	35	2-2-I	DRILLED CEMENT	950
PB 179	20	HTC	J 2	116	8 $\frac{1}{2}$	16 16 16	-	-	10	-	-	2-2-I	DRILLED OUT DV & CMT	950

BIT RECORD



COMPANY ESSO AUSTRALIA LTD.
WELL TARWHINE No. 1

Sheet No. 1

S/N	Bit No.	Make	Type	IADC Code	Size"	Cost	Jets	Depth In _m	Depth Out _m	Hole Made _m	Drilling Time	On Bottom Hours	TurnsK	Average ROP	Average Cost/ _m	Condition T B G
MJ 804	1 RR	HTC	OSC 3AJ	111	17 1/2 26	7000	20 20 20 15 15 15	65	204	139	10 3/4	.80	34	24.0	241	2-2-I
KX 788	2	HTC	OSC 3AJ	111	17 1/2	5000	20 20 20	204	799	595	22 1/2	13.61	115	43.7	112	3-3-I
LS 196	3	HTC	X3A	114	12 1/4	1400	16 16 16	799	1293	494	31	21.11	162	23.4	195	3-5-I
LR 569	4	HTC	X3A	114	12 1/4	1400	16 16 16	1293	1392	99	5 1/2	4.14	33	23.9	377	1-3-I
80L05553	5 RR	CHRIST	C 22	4	8 15 32	15000	TFA 13/13/ 13 EQUIV	1392	1405	13	2 1/4	2.24	13	6.4	3366	30% WN
80L05553	5 RR	CHRIST	C 22	4	8 15 32	15000	TFA 13/13/ 13 EQUIV	1405	1418	13	3	3.02	16	4.3	4538	80% WN
KL 689	6	HTC	X3A	114	12 1/4	1400	14 14 15	1418	1495	77	6 1/4	4 .27	35	16.7	524	7-6-3/4
LA 802	7	HTC	J04	217	12 1/4	1800	15 15 14	1495	1585	90	9 1/4	7.22	50	12.5	571	7-5-5/16
KZ 727	8	HTC	XDG	135	12 1/4	1400	15 15 14	1585	1585	0	1	0	0	0	-	1-1-I
FL 595	9	HTC	J 22	517	12 1/4	4200	15 15 14	1585	1986	401	44 1/2	40.68	244	9.9	440	5-4-3/16
KZ 727	8 RR	HTC	XDG	135	12 1/4	1400	15 15 14	1986	1986	0	8 3/4	0	0	0	-	1-1-I
00 6PL	10	HTC	J 22	517	12 1/4	4200	14 14 15	1986	2161	175	33 1/4	29.75	176	5.9	806	8-5-1/8
016 BL	11	HTC	J 33	527	12 1/4	6090	14 14 14	2161	2324	163	38	36.22	207	4.6	1020	4-6-3/16
068 AL	12	HTC	J 33	527	12 1/4	6090	14 14 14	2324	2521	197	53	45.29	252	4.3	1029	6-6-1/4
HT 210	13	HTC	J 7	317	12 1/4	1800	14 14 14	2521	2535	14	6 1/2	6.20	21	2.3	4278	3-2-I
104 AL	14	HTC	J 33	527	12 1/4	6090	14 14 14	2535	2600	65	10 3/4	8.77	54	7.4	1119	5-3-1/8
105 AL	15	HTC	J 33	527	12 1/4	6090	14 14 15	2600	2663.3	63	15 3/4	13.94	76	4.5	1475	3-3-1/8
81E61047	16	CHRIST	C 20	4	8 15 32	15000	14/14/15 TFA EQUIV	2663.3	2669	6	10 1/2	4.08	19	1.4	11225	20% WN
067 AL	17	HTC	J 33	527	12 1/4	6090	14 14 15	2669	2815	146	37	33.41	235	4.4	1124	6-5-3/16
027 BL	18	HTC	J 33	527	12 1/4	6090	14 14 15	2815	2955	140	41	36.54	218	3.8	1265	6-6-1/4
259 BF	19	HTC	OSC 1G	131	8 1/2	900	28 28 28	1998	2460	462	18 3/4	14.37	104	32.2	175	3-5-I
PB 179	20	HTC	J 2	116	8 1/2	950	16 16 16	2460	2747	287	8	5.46	35	52.6	192	2-2-I
PB 179	20	HTC	J 2	116	8 1/2	950	16 16 16	-	-	-	10	-	-	-	-	2-2-I

BT
BT

10. MUD INFORMATION SHEETS

DEPTH Metres

MUD WEIGHT Pounds per gallon

FUNNEL VISCOSITY . . . A.P.I. seconds

PLASTIC VISCOSITY. . . Centipoise

YIELD POINT. Pounds/100 square feet

GEL : Initial/10 min . Pounds/100 square feet

FILTRATE A.P.I. cc

CAKE THICKNESS Thirty seconds of an inch

SALINITY : Ca/Cl . . . ppm

SOLIDS/SAND/OIL. . . . Percentage



MUD INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.
 WELL TARWHINE No. 1

Sheet No. 1

DEPTH	150	360	790	1060	1300	1355	1405
DATE	20 NOV 81	22 NOV 81	23 NOV 81	26 NOV 81	27 NOV 81	27 NOV 81	28 NOV 81
TIME	21:00	18:00	13:00	09:30	09:00	11:45	11:44
WEIGHT	8.6	8.9	9.0	8.9	10.0	10.1	10.3
FUNNEL VISCOSITY		28		28	41	41	44
PV/YP		2/2	3/14	4/6	9/12	7/19	9/16
N/K		.58/.10	.23/.10	.49/.49	.51/.85	.34/3.0	.44/1.57
GEL: INITIAL/10 MIN					8/19	10/19	6/28
pH					10.6	11.0	10.8
FILTRATE: API/API HTHP					16.1	13.3	11.2
CAKE					2	2	2
SALINITY - Cl					17K	16.5 K	17.0K
SAND					1/4	1/4	1/4
SOLIDS					10	10	10
OIL					0	0	tr
SALINITY - Ca						140	100
NITRATES							15

REMARKS: | | |
 SEAWATER SEAWATER GEL oil-defoamer added

DEPTH	1444	1495	1613	1816	1901	1980	1986
DATE	29 NOV 81	29 NOV 81	2 DEC 81	3 DEC 81	3 DEC 81	4 DEC 81	4 DEC 81
TIME	10:00	24:00	13:15	11:15	22:00	07:15	17:00
WEIGHT	10.1	10.1+	10.0+	10.2	10.1	10.0+	10.1
FUNNEL VISCOSITY	43	50	44	45	45	44	43
PV/YP	10/15	16/20	10/15	15/16	14/16	14/14	14/15
N/K	.49/1.21	.53/1.32	.49/1.21	.57/0.89	.55/.96	.58/.73	.57/.84
GEL: INITIAL/10MIN	5/20	8/29	4/18	4/14	6/19	4/16	4/17
pH	10.8	10.1	11.0	10.5	10.9	10.7	11.1
FILTRATE: API/API HTHP	7.8/14.2	7.4/13.2	8.2/14.2	5.8/11.6	6.9/ -	6.4/13.8	6.6/13.0
CAKE	2	2	2	1	1	1	1
SALINITY - Cl	17.5K	17.0K	16.0K	17.0K	17.0K	17.3K	17.3K
SAND	1/4	1/4	1/4	1/2	1/2	1/2	1/2
SOLIDS	10	11	9	11	10	10	9
OIL	TR	TR	TR	NIL	NIL	NIL	NIL
SALINITY -Ca	140	140	80	100	80	80	80
NITRATES ppm	220	175	176	75	25	90	112

REMARKS:



COMPANY ESSO AUSTRALIA LTD
WELL TARWHINE No. 1

MUD INFORMATION SHEET

Sheet No. 2

DEPTH	1986	1986	2001	2060	2115	2161	2190
DATE	5 DEC 81	5 DEC 81	6 DEC 81	6 DEC 81	7 DEC 81	7 DEC 81	8 DEC 81
TIME	11:00	13:30	13:00	22:15	12:00	20:30	16:30
WEIGHT	10.1	10.1	10.0+	10.0	10.0	10.0	10.0
FUNNEL VISCOSITY	44	45	50	46	43	44	45
PV/YP	16/17	15/16	17/21	15/19	15/15	16/17	16/16
N/K	.57/.94	.57/0.89	.53/1.37	0.53/1.27	0.58/0.78	0.57/0.94	0.58/0.84
GEL: INITIAL/10 MIN	4/19	4/17	6/18	5/16	7/16	6/19	6/18
pH	10.8	11.0	10.8	11.0	10.7	11.2	11.1
FILTRATE: API/API HTHP	6.5/13.4	6.8/13.6	7.8/14.5	6.6/13.2	7.0/13.0	6.6/12.4	6.8/12.8
CAKE	1	1	1	1	1	1	1
SALINITY - Cl	17.8K	18.0K	17.6K	17.8K	18.5K	18.6K	18.7K
SAND	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
SOLIDS	10	9	10	10	10	10	10
OIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
SALINITY - Ca	80	80	90	90	90	90	90
NITRATES ppm	15	130	180	155	98	108	112

REMARKS:

DEPTH	2250	2308	2324	2337	2377	2425	2457
DATE	8 DEC 81	9 DEC 81	9 DEC 81	10 DEC 81	10 DEC 81	11 DEC 81	11 DEC 81
TIME	22:00	22:00	13:50	22:40	12:30	23:00	22:00
WEIGHT	10.0	10.0	10.1	10.1	10.1	10.1	9.9+
FUNNEL VISCOSITY	46	46	47	49	47	47	45
PV/YP	15/18	15/22	14/20	13/30	17/30	14/18	13/16
N/K	0.54/1.14	0.49/1.73	.50/1.53	0.38/4.00	0.45/2.93	0.52/1.22	0.53/1.04
GEL: INITIAL/10MIN	5/17	7/22	5/19	6/20	7/22	7/19	6/18
pH	10.6	10.8	10.6	10.7	10.1	10.6	10.8
FILTRATE: API/API HTHP	7.0/13.2	7.0/13.6	7.7/13.2	7.8/13.4	7.8/13.2	7.5/13.2	7.2/13.0
CAKE	1	1	1	1	1	1	1
SALINITY - Cl	18.9K	17.5K	18.0K	18.5K	18.5K	18.5K	18.5K
SAND	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
SOLIDS	10	10	9	8	7	7	8
OIL	TR	TR	TR	TR	TR	TR	TR
SALINITY - Ca	80	60	80	80	60	80	80
NITRATES ppm	160	160	140	140	185	185	170

REMARKS:



MUD INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.
 WELL TARWHINE No. 1

Sheet No. 3

DEPTH	2458	2521	2521	2521	2521	2521	2526
DATE	12 DEC 81	12 DEC 81	13 DEC 81	14 DEC 81	14 DEC	15 DEC 81	16 DEC 81
TIME	10:40	23:00	23:15	17:30	21:00	23:30	22:00
WEIGHT	9.9+	9.9	10.0	10.1	10.0	10.0	10.0
FUNNEL VISCOSITY	47	45	61	49	54	54	50
PV/YP	13/19	11/17	12/18	12/18	10/21	11/20	10/14
N/K	0.49/1.49	0.48/1.42					
GEL: INITIAL/10 MIN	7/19	8/21	5/15	7/19	6/19	7/19	4/16
pH	10.5	10.6	10.3	10.6	10.6	10.6	11.0
FILTRATE: API/API HTHP	7.2/13.6	7.2/13.2	7.4/13.6	7.9/14.2	7.8/ -	8.0/14.4	8.0/14.6
CAKE	1	1	2	2	2	2	2
SALINITY Cl	18.0K	18.5K	18.0K	19.0K	19.0K	19.0K	19.0K
SAND	1/4	1/4	TR	TR	1/4	TR	TR
SOLIDS	8	7	7	7	7	7	7
OIL	TR	TR	TR	TR	TR	TR	TR
SALINITY Ca	80	60	80	93	93	93	93
NITRATES ppm	180	180	160	160	155	175	170

REMARKS: RUN E-LOGS RUN E-LOGS RUN RFTS

DEPTH	2669m	2700m	2806m	2856m	2950m	2955m	2555m
DATE	20 DEC 81	21 DEC 81	22 DEC 81	26 DEC 81	27 DEC 81	27 DEC 81	29 DEC 81
TIME	22:45	08:30	08:00	17:00	23:00	-	20.30
WEIGHT	10.1+	10.1	10.1	10.0	10.1	10.0	10.0
FUNNEL VISCOSITY	52	51	46	43	49	45	45
PV/YP	12/20	15/20	13/17	13/15	14/17	14/16	13/14
N/K	0.46/1.82	0.51/1.45	0.52/1.25	0.55/0.91	0.54/1.09	0.55/0.96	0.82/0.10
GEL: INITIAL/10MIN	18/19	9/23	6/19	6/18	6/23	6/17	5/17
pH	11	10.7	11	10.8	10.6	11.1	10.9
FILTRATE: API/API HTHP	7.2/13	7.6/13.4	7.6/12.6	6.6/14	8/14.2	6.8/13.6	6.8/13.0
CAKE	1	2	1	1	1	1	1
SALINITY Cl	18.5K	19.5K	19K	19.4K	19.2K	19.0K	19.0K
SAND	0.25	0.25	0.2	0.25	Tr	Tr	Tr
SOLIDS	7	7	7	10	9	9	9
OIL	Tr	Tr	Tr	Tr	1%	1%	1%
RETORT H ₂ O	93%	93%	93%	90%	90%	90%	90%
SALINITY Ca			100	80	80	80	80
NITRATES ppm	185	175	165	205	205	210	210

REMARKS: RUN E-LOGS



MUD INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.
 WELL TARWHINE NO.1

Sheet No. 4

DEPTH	2955m	2955m	2955m	1499m	2346m	2895m	2895m
DATE	30 DEC 81	31 DEC 81	1 JAN 82	2 JAN 82	3 JAN 82	4 JAN 82	5 JAN 82
TIME	23.45	11.15	23.13	11.10	09.30	13.30	21.45
WEIGHT	10.0+	10.1	10.1	10.1	9.9	10.1	9.8
FUNNEL VISCOSITY	48	50	47	45	45	56	49
PV/YP	13/15	15/14	14/15	15/15	13/12	16/15	12/11
N/K	0.55/0.91	0.60/0.68	0.57/0.84	0.58/0.78	0.60/0.58	0.60/0.73	0.61/0.53
GEL: INITIAL/10 MIN	4/14	6/17	4/17	5/15	3/11	6/15	4/11
pH	10.8	10.9	11.2	11.5	12.3	13.0	12.0
FILTRATE: API/API HTHP	68/12.8	7.2/13.3	6.9/13.8	7.3/14	9.8/23.5	18.6/34.2	12.9/26.2
CAKE	1	1	1	1	1	2	2
SALINITY Cl	18.5K	18.0K	18.0K	18.0K	17.0K	16.5K	15.5K
SAND	Tr	Tr	Tr	Tr	Tr	1/4	Tr
SOLIDS	9	8	9	8	8	10	5
OIL	1	1	1	1	1	1	1
SALINITY Ca	80	80	90	120	320	420	300
NITRATES ppm	220	210	190	190	170	100	70

REMARKS: RUN RFTS RUN 9 5/8 CMT CSG DRILL DRILL DRILL COND
 CSG COULD CMT CMT CMT MUD
 NOT
 DISP
 FULLY

DEPTH	2830m	2863m	2863m	2640m	2640m		
DATE	6 JAN 82	7 JAN 82	8 JAN 82	9 JAN 82	10 JAN 82		
TIME	04.45	10.15	23.45	23.45	15.00		
WEIGHT	9.8	9.8	9.8	9.8	9.8		
FUNNEL VISCOSITY	51	47	42	43	40		
PV/YP	11/10	15/10	13/10	12/11	11/9		
N/K	0.61/0.48	0.68/0.37	0.68/0.41	0.61/0.53	0.63/0.39		
GEL: INITIAL/10MIN	3/9	4/10	3/9	3/10	2/8		
pH	12.0	12.5	12.0	12.0	11.8		
FILTRATE: API/API HTHP	12.6	13.9/28.6	11.7/24.5	11.4/23.8	11.9/25.7		
CAKE	2	2	2	2	2		
SALINITY Cl	15.5K	15.5K	16.0K	15.5K	16.0K		
SAND	Tr	Tr	Tr	Tr	Tr		
SOLIDS	4	4	4	4	4		
OIL	.5	.5	.5	.5	.5		
SALINITY Ca	300	400	360	360	380		
NITRATES ppm	170	188	60	50	50		

REMARKS: CMT SQUEEZE RUN RUN TUBING PERFORATE
 CSG CMT FIT FOR PTW-1
 PWT-1 MISRUN

11. GEOLOGICAL SUMMARY.

GEOLOGICAL PROFILE - Tarwhine No. 1.

(All depths from RKB).

The main objective of the well was to assess the hydrocarbon potential of reservoir sandstone within the Latrobe "Coarse Clastic" in a well defined, faulted anticlinal structure. The secondary objective was to test for any intra-Latrobe seals that may have occurred due to thin shales and coals.

ALL DEPTH WERE MEASURED FROM THE KELLY BUSHING.

GIPPSLAND LIMESTONE 65m - 800m

Limestone, as expected, was the predominant lithology. The limestone had the basic characteristics of calcarenite: white - off white, gray to dark gray, brown, silty to a medium grain, with coral, forams and fossils in abundance throughout. In the depth interval of 525m to 640m, a grading to a coarse grained, clear, white, well rounded, sub-spherical, well sorted and loose sandstone had been observed. The limestone in the depth interval of 750m to 800m, trace amounts of glauconite were interspersed through the formation.

LAKES ENTRANCE FORMATION 800m - 1386m.

This formation was very distinct due to an initial, 50% inclusion of coarse grained sandstone. This sandstone was white to light gray, medium to very coarse grained, rounded, sub-spherical, moderately well sorted with a slight, very calcarious cement. The sandstone graded to a slightly calcarious siltstone that varied in texture from sub-fissile to gumbo. Its basic characteristics were light gray to gray, trace of shell fragments and coral, carbonaceous, and soft to moderately hard.

To the depth of 1010m, limestone was observed in varying amounts. This limestone was very similar to that encountered in the Gippsland Limestone.

Clay was found in the depth interval of 1200m to 1280m. It was a medium gray, very calcarious, silty with a trace of glauconite.

GURNARD FORMATION 1386m - 1410m.

Over this depth interval, sandstone, and not siltstone, was encountered. This sandstone was accompanied by very high gas readings of 850 units. The sandstone was clear to smokey in colour, coarse to very coarse grained, sub-rounded to angular, sub-spherical and loose. Consequently, two cores were cut.

LATROBE 1410m - 2485m.

The Latrobe was found to be predominantly coarse grained sandstone with interbedding of siltstone, coal and a slight amount of claystone. The sandstone was basically clear to smokey, loose, very coarse grained, sub-rounded, moderately well sorted, traces of pyrite, glauconite, mica, and some argillaceous material. The siltstone is dark grey, brown, and is carbonaceous, argillaceous, with pyrite inclusions, hard. The coal is dark brown to black, hard to very hard, brittle to very brittle, carying from fissile to blocky, and was shiney. The claystone was fairly hard to differentiate from shale at times, and varied from white, brown, slightly calcareous, arbonaceous in part, sandy, soft to dark brown, gray, carbonaceous, platy, fissile and firm.

INTRA-LATROBE 2485m - 2955m.

This section varied from predominantly siltstone to predominantly sandstone with both having interbedding of coal and shale. The coal, sandstone, and siltstone were all found to be very similar to those described above. The shale was dark brown to gray, highly carbonaceous, platy, fissile and firm.

12. OVERBURDEN GRADIENT CALCULATIONS

DEPTHmetres

BULK DENSITYgm/cc

OVERBURDEN PRESSURE INCREMENT .psi

CUMULATIVE OVERBURDEN PRESSURE .psi

OVERBURDEN PRESSURE GRADIENT . .psi/ft

OVERBURDEN EQUIVILANT DENSITY .Pounds per gallon

BULK DENSITY TAKEN FROM AVERAGED F.D.C. LOG, OR FROM SONIC LOG
FOR SECTIONS WHERE THE F.D.C.LOG IS NOT AVAILABLE.



OVERBURDEN AND STRESS RATIO WORK SHEET

COMPANY ESSO AUSTRALIA L.T.D.
 WELL TARWHINE No. 1

Sheet No. 1

DEPTH		Average Bulk Density	Overburden Pressure Increment	Cumulative Overburden Pressure	Overburden Pressure Gradient	Overburden Equivalent Density	Fracture Equivalent Density	Pore Pressure Equivalent Density	Stress Ratio
From	To								
M	M	gm/cc	PSI	PSI	PSI/FT	ppg EMW			
0	65	1.02	28.71	28.71	0.442	8.49			
65	800	2.13	677.88	706.59	0.883	16.99			
800	825	2.30	24.90	731.49	0.887	17.05			
825	850	2.29	24.79	756.28	0.890	17.11			
850	875	2.29	24.79	781.07	0.893	17.17			
875	900	2.32	25.11	806.18	0.896	17.23			
900	925	2.33	25.22	831.40	0.899	17.28			
925	950	2.35	25.44	856.84	0.902	17.34			
950	975	2.32	25.11	881.96	0.905	17.40			
975	1000	2.26	24.46	906.42	0.906	17.43			
1000	1025	2.20	23.82	930.24	0.908	17.45			
1025	1050	2.26	24.46	954.70	0.909	17.49			
1050	1075	2.36	25.55	980.25	0.912	17.54			
1075	1100	2.33	25.22	1005.47	0.914	17.58			
1100	1125	2.31	25.01	1030.48	0.916	17.61			
1125	1150	2.28	24.68	1055.16	0.918	17.64			
1150	1175	2.09	22.62	1077.78	0.917	17.64			
1175	1200	2.19	23.71	1101.49	0.918	17.65			
1200	1225	2.20	23.82	1125.30	0.919	17.67			
1225	1250	2.05	22.19	1147.49	0.918	17.65			
1250	1275	2.00	21.65	1169.14	0.917	17.63			
1275	1300	2.12	22.95	1192.09	0.917	17.63			
1300	1325	2.02	21.87	1213.96	0.916	17.62			
1325	1350	2.10	22.73	1236.69	0.916	17.62			
1350	1385	1.70	25.76	1262.45	0.912	17.53			
1385	1400	2.23	14.48	1276.94	0.912	17.54			
1400	1425	2.28	24.68	1301.62	0.913	17.57			
1425	1450	2.24	24.25	1325.87	0.914	17.58			
1450	1475	2.26	24.46	1350.33	0.915	17.61			
1475	1500	2.33	25.22	1375.55	0.917	17.64			
1500	1525	2.24	24.25	1399.80	0.918	17.65			
1525	1550	2.23	24.14	1423.94	0.919	17.67			



OVERBURDEN AND STRESS RATIO WORK SHEET

COMPANY ESSO AUSTRALIA L.T.D.
 WELL TARWHINE No. 1

Sheet No. 2

DEPTH		Average Bulk Density	Overburden Pressure Increment	Cumulative Overburden Pressure	Overburden Pressure Gradient	Overburden Equivalent Density	Fracture Equivalent Density	Pore Pressure Equivalent Density	Stress Ratio
From	To	gm/cc	PSI	PSI	PSI/FT	ppg EMW			
M	M								
1550	1575	2.26	24.46	1448.41	0.920	17.69			
1575	1600	2.25	24.36	1472.76	0.920	17.70			
1600	1625	2.24	24.25	1497.01	0.921	17.72			
1625	1650	2.29	24.79	1521.80	0.922	17.74			
1650	1675	2.25	24.36	1546.16	0.923	17.75			
1675	1700	2.19	23.71	1569.86	0.923	17.76			
1700	1725	2.24	24.25	1594.11	0.924	17.77			
1725	1750	2.27	24.57	1618.68	0.925	17.79			
1750	1775	2.23	24.14	1642.82	0.926	17.80			
1775	1800	2.23	24.14	1666.96	0.926	17.81			
1800	1825	2.26	24.46	1691.43	0.927	17.82			
1825	1850	2.21	23.92	1715.35	0.927	17.83			
1850	1875	2.25	24.36	1739.71	0.928	17.84			
1875	1900	2.21	23.92	1763.63	0.928	17.85			
1900	1925	2.27	24.57	1788.20	0.929	17.86			
1925	1950	2.27	24.57	1812.78	0.930	17.88			
1950	1975	2.33	25.22	1838.00	0.931	17.90			
1975	2000	2.29	24.79	1862.79	0.931	17.91			
2000	2025	2.35	25.44	1888.23	0.932	17.93			
2025	2050	2.33	25.22	1913.45	0.933	17.95			
2050	2075	2.40	25.98	1939.43	0.935	17.97			
2075	2100	2.39	25.87	1965.30	0.936	18.00			
2100	2125	2.36	25.55	1990.85	0.937	18.02			
2125	2150	2.42	26.20	2017.04	0.938	18.04			
2150	2175	2.39	25.87	2042.92	0.939	18.06			
2175	2200	2.38	25.76	2068.68	0.940	18.08			
2200	2225	2.40	25.98	2094.66	0.941	18.10			
2225	2250	2.41	26.09	2120.75	0.943	18.13			
2250	2275	2.45	26.52	2147.27	0.944	18.15			
2275	2300	2.42	26.20	2173.47	0.945	18.17			
2300	2325	2.33	25.22	2198.69	0.946	18.19			
2325	2350	2.46	26.63	2225.32	0.947	18.21			

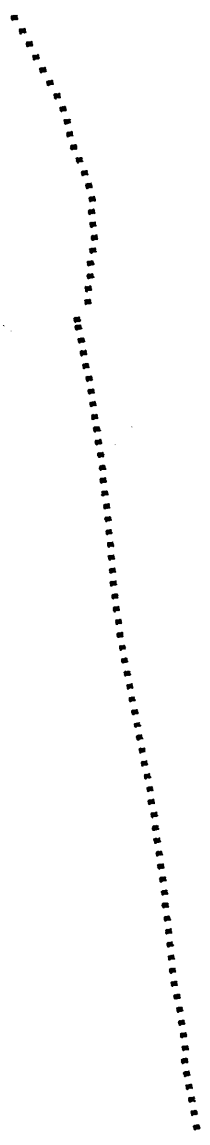
DEPTH (in metres) x 1000

ESSO AUSTRALIA LTD
TARWHINE No. 1
OVERBURDEN GRADIENT

PSI/FT.

.5 .6 .7 .8 .9 1.0

0
1
2
3



13. F.I.T. / R.F.T. DATA.

CORE LABORATORIES INTERNATIONAL

PORE PRESSURE DATA SHEET

DATA FROM R.F.T. RUNS

COMPANY : ESSO AUSTRALIA LTD.WELL : TARWHINE No. 1

DEPTH (FROM RKB)	DEPTH (FROM MSL)	PORE PRESSURE	PORE PRESSURE GRADIENT E.M.W.(MSL)	PORE PRESSURE GRADIENT
M.	M.	P.S.I.G.	P.P.G.	P.S.I.G./FT.
1559.5	1515.7	2225.20	8.60	.447
1522.0	1478.2	2214.80	8.78	.457
1538.0	1494.2	2194.44	8.61	.448
1522.9	1479.1	2181.80	8.64	.449
1522.5	1478.7	2170.44	8.60	.447
1515.5	1471.7	2163.76	8.62	.448
1508.5	1464.7	2150.22	8.60	.447
1498.0	1454.2	2135.34	8.61	.447
1489.5	1445.7	2124.00	8.62	.448
1480.0	1436.2	2110.19	8.62	.448
1470.0	1426.2	2096.50	8.62	.448
1460.0	1416.2	2082.00	8.62	.448
1439.0	1395.2	2053.15	8.62	.448
1416.5	1372.7	2022.4	8.63	.449
1412.0	1368.2	2015.3	8.63	.449
1431.0	1387.2	2041.07	8.62	.448
1407.0	1363.2	2008.50	8.63	.448
1402.0	1358.2	2004.80	8.65	.450
1399.0	1355.2	2002.83	8.66	.450
1396.7	1352.9	2000.50	8.69	.452
1400.7	1356.9	2003.60	8.65	.450

CORE LABORATORIES INTERNATIONAL

PORE PRESSURE DATA SHEET

DATA FROM R.F.T. RUNS

COMPANY : ESSO AUSTRALIA LTD.WELL : TARWHINE No. 1

DEPTH (FROM RKB)	DEPTH (FROM MSL)	PORE PRESSURE	PORE PRESSURE GRADIENT E.M.W.(MSL)	PORE PRESSURE GRADIENT
M.	M.	P.S.I.G.	P.P.G.	P.S.I.G./FT.
1397.7	1353.0	2000.9	8.66	.450
1552.0	1508.2	2214.9	8.61	.447
1797.0	1753.2	2561.0	8.56	.445
1973	1929.2	2810.3	8.54	.440
2166.5	2122.7	3079.3	8.50	.442
2216.5	2172.7	3149.8	8.50	.442
2298.0	2254.2	3266.4	8.50	.442
2503.0	2459.2	3564.6	8.49	.442
2489.0	2445.2	3539.3	8.48	.441
2482.0	2438.2	3529.2	8.48	.441
2470.0	2426.2	3512.8	8.48	.441
2461.5	2417.7	3501.1	8.48	.441
2453.0	2409.2	3488.2	8.48	.441
2442.0	2398.2	3473.1	8.48	.441
2435.5	2391.7	3463.7	8.48	.441
2426.0	2382.2	3449.9	8.48	.441
2411.0	2367.2	3427.6	8.48	.441
2403.5	2359.7	3418.2	8.48	.441
2405.0	2361.2	3419.3	8.48	.441
2397.5	2353.7	3410.4	8.49	.442
2394.5	2350.7	3410.2	8.49	.442

CORE LABORATORIES INTERNATIONAL

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PORE PRESSURE DATA SHEET

DATA FROM R.F.T. RUNS

COMPANY : ESSO AUSTRALIA LTD.WELL : TARWHINE No. 1

DEPTH (FROM RKB)	DEPTH (FROM MSL)	PORE PRESSURE	PORE PRESSURE GRADIENT E.M.W.(MSL)	PORE PRESSURE GRADIENT
M	M	P.S.I.G.	P.P.G.	P.S.I.G./FT.
2378.5	2334.7	3387.5	8.50	.442
2369.0	2325.2	3367.3	8.48	.441
2365.5	2321.7	3363.3	8.51	.443
2359.5	2315.7	3362.6	8.51	.442
2352.5	2308.7	3343.9	8.48	.441
2336.0	2292.2	3320.3	8.48	.441
2490.5	2446.7	3541.7	8.48	.442
2498.5	2454.7	3554.9	8.49	.441
2509.5	2465.7	3570.6	8.49	.441
2513.0	2469.2	3575.0	8.49	.441
2512.5	2468.7	3574.2	8.49	.441
2501.5	2457.7	3562.4	8.50	.442
2504.4	2460.6	3566.9	8.50	.442
2507.5	2463.7	3567.5	8.49	.441
2536.5	2492.7	3611.2	8.49	.442
2540.5	2496.7	3615.6	8.49	.441
2547.0	2503.2	3624.6	8.49	.441
2489.0	2445.2	3539.9	8.48	.441
2803.0	2759.2	4006.4	8.51	.442
2796.2	2752.4	3996.5	8.51	.443
2792.0	2748.2	3989.3	8.51	.442

CORE LABORATORIES INTERNATIONAL

PORE PRESSURE DATA SHEET

DATA FROM RFT PRETESTS

COMPANY : ESSO AUSTRALIA LTD

WELL : TARWHINE No 1

DEPTH (FROM RKB)	DEPTH (FROM MSL)	PORE PRESSURE	PORE PRESSURE GRADIENT E.M.W.(MSL)	PORE PRESSURE GRADIENT
M	M	P.S.I.G.	P.P.G.	P.S.I.G./FT.
2779.0	2735.2	3981.4	8.53	.444
2769.0	2725.2	3961.1	8.52	.443
2749.0	2705.2	3935.5	8.53	.443
2743.8	2700.0	3915.6	8.50	.442
2732.4	2688.6	3902.8	8.51	.442
2718.0	2674.2	3898.5	8.54	.444
2712.4	2668.6	3872.7	8.51	.442
2686.0	2642.2	3854.2	8.55	.445
2661.8	2618.0	3796.2	8.50	.442
2665.6	2621.8	3804.2	8.50	.442
2614.0	2570.2	3723.0	8.49	.441
2595.0	2551.2	3694.1	8.49	.441
2578.5	2534.7	3669.1	8.48	.441
2568.7	2524.9	3655.2	8.49	.441
2555.0	2511.2	3637.0	8.49	.441
2547.0	2503.2	3634.9	8.51	.443
2503.0	2459.2	3562.9	8.49	.442
2690.8	2647.0	3846.0	8.52	.443
2664.0	2620.2	3798.0	8.50	.442
2843.0	2799.2	4063.0	8.51	.442
2721.5	2677.7	3893.0	8.52	.443

CORE LABORATORIES

R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD.

WELL TARWHINE No. 1

RUN No. 1

CHOKE SIZE .03/.02 PRESS. GAUGE TYPE HP

	CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal		CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal
SEAT No.			OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	1406.4	1406.4	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TOOL SET	: :	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	: :	: :	RESISTIVITY (Ωm)	0.52 @23°C	1.05 @23°C
CHAMBER OPEN	: :	: :	C1 (frm. resis.) ()		
CHAMBER FULL	: :	: :	C1 (frm. titrat.) (ppm)	7.5 K	4.55 K
FILL TIME	: :	: :	NO ₃ (ppm)	11	9
START BUILD UP	: :	: :	pH	6.5	6.4
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	: :	: :	(d) OTHER SAMPLE		
TOOL RETRACT	: :	: :	PROPERTIES		
TOTAL TIME	: :	: :			
B. SAMPLE PRESSURES			E. MUD PROPERTIES:		
IHP ()			TYPE		
ISIP ()			RESISTIVITY ()	@ °	@ °
IFP ()			C1 (frm. resis.) ()		
FFP ()			C1 (frm. titrat.) ()		
FSIP ()			NO ₃ (ppm) 1st. circ ()	/	/
FHP ()			pH		
TEMP. CORR. if app ()			OTHER TRACERS ()		
COMMENTS			COMMENTS		
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED ()					
MAX. REC. TEMP (°)					
TIME CIRC. STOPPED	: /	: /			
TIME SINCE CIRC.	: :	: :			
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	100	100			
VOL. GAS (cf)	0.24	0.35			
VOL. OIL ()					
VOL. WATER (L)	0.24	0.35			
VOL. FILTRATE ()					
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C1 (ppm)	19 000	117 000	NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected.		
C2 (ppm)	1 300	6 700			
C3 (ppm)	1 200	5 800			
C4 (ppm)	360	1 200			
C5 ()	NIL	NIL			
C6 + ()	NIL	NIL			
CO ₂ (%)	NIL	NIL			
H ₂ S (ppm)	NIL	NIL			
(b) OIL PROPERTIES					
DENSITY: HYDROMETER @ °					
REFRACTOMETER @ °					
COLOUR					
FLUORESCENCE					
G.O.R. ()					

CORE LABORATORIES

R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD

WELL TARWHINE No. 1

RUN No. 3

CHOKE SIZE .03/.02 "

PRESS. GAUGE TYPE HP

	CHAMB. 1 SIZE <u>6 gal</u>	CHAMB. 2 SIZE <u>1 gal</u>		CHAMB. 1 SIZE <u>6 gal</u>	CHAMB. 2 SIZE <u>1 gal</u>
SEAT No.			OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	1396.6	1396.6	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TOOL SET	: :	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	: :	: :	RESISTIVITY ()	@ °	@ °
CHAMBER OPEN	: :	: :	C1 (frm. resis.) ()		
CHAMBER FULL	: :	: :	C1 (frm. titrat.) (ppm)	8.0 K	
FILL TIME	: :	: :	NO ₃ (ppm)	13	
START BUILD UP	: :	: :	pH	7.4	
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	: :	: :	(d) OTHER SAMPLE PROPERTIES		
TOOL RETRACT	: :	: :			
TOTAL TIME	: :	: :			
B. SAMPLE PRESSURES			E. MUD PROPERTIES:		
IHP ()			TYPE		
ISIP ()			RESISTIVITY ()	@ °	@ °
IFP ()			C1 (frm. resis.) ()		
FFP ()			C1 (frm. titrat.) ()		
FSIP ()			NO ₃ Drld/1st circ ()	/	/
FHP ()			pH		
TEMP. CORR. if vapp ()			OTHER TRACERS ()		
COMMENTS			COMMENTS		
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED ()					
MAX. REC. TEMP (°)					
TIME CIRC. STOPPED	: /	: /			
TIME SINCE CIRC.	: :	: :			
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	100	100			
VOL. GAS (cf)	3.06	4.8			
VOL. OIL (L)	.350	.720			
VOL. WATER ()					
VOL. FILTRATE (L)	.950	.110			
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C1 (ppm)	450 000	304 000	NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected.		
C2 (ppm)	78 800	92 200			
C3 (ppm)	61 400	115 000			
C4 (ppm)	7 200	36 900			
C5 (ppm)	1 870	7 490			
C6 + ()	124	391			
CO ₂ (%)	NIL	NIL			
H ₂ S (ppm)	NIL	NIL			
(b) OIL PROPERTIES					
DENSITY: HYDROMETER	62API@22°C	62API@22°C			
REFRACTOMETER	63API@23°C	63API@23°C			
COLOUR					
FLUORESCENCE					
G.O.R. (cf/bbl)	1390	1060			

CORE LABORATORIES
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R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD

WELL TARWHINE No. 1

RUN No. 4

CHOKE SIZE .03/.02" PRESS.GUAGE TYPE HP

	CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal		CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal
SEAT No.	34	34	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	1387.7	1387.7	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TCOL SET	: :	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	: :	: :	RESISTIVITY (Ωm) .28 @ 140	@ °	@ °
CHAMBER OPEN	: :	: :	C1 (frm. resis.) ()		
CHAMBER FULL	: :	: :	C1 (frm. titrat) (ppm) 18.0 K		
FILL TIME	: 08:20	: 02:00	NO3 (ppm) 94		
START BUILD UP	: :	: :	pH 6.8		
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	: :	: :	(d) OTHER SAMPLE		
TOOL RETRACT	: :	: :	PRUPERTIES		
TOTAL TIME	: :	: :			
B. SAMPLE PRESSURES			E. MUD PROPERTIES:		
IHP (psig) 2423			TYPE		
ISIP (psia) 1993.3			RESISTIVITY () @ ° @ °		
IFP (psia) 1963.0	1885.8		C1 (frm. resis.) (Ω)		
FFP (psia) 1665.7			C1 (frm. titrat) ()		
FSIP (psia) 1992.8	1992.9		NO3 Drld/1st. circ () / /		
FHP (psia) 2422			pH		
TEMP. CORR. if app ()			OTHER TRACERS ()		
COMMENTS			COMMENTS		
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED (m) 1403					
MAX. REC. TEMP (°C) -					
TIME CIRC. STOPPED 14:45 5/DEC : /					
TIME SINCE CIRC. 11:45 :					
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psia) 1450					
VOL. GAS (cf) 64.3					PRESERVED SAMPLE
VOL. OIL (L) 11.3					
VOL. WATER ()					
VOL. FILTRATE (L) 3.1					
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C1 (ppm) 469 300			NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected.		
C2 (ppm) 29 700					
C3 (ppm) 20 500					
C4 (ppm) 2 700					
C5 (ppm) 330					
C6 + (ppm) TR					
CO2 (%) NIL					
H2S (ppm) NIL					
(b) OIL PROPERTIES					
DENSITY: HYDROMETER 65.8 @ 14°C					
REFRACTOMETER @ °					
COLOUR HONEY BROWN					
FLUORESCENCE BRT BLU WHT					
G.O.R. (cf/bbl) 905					

CORE LABORATORIES

R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD. WELL TARWHINE No. 1

RUN No. 5 CHOKE SIZE .03/.020" PRESS. GAUGE TYPE HP

	CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal		CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal
SEAT No.	35	35	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	1399	1399	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TCOL SET	: :	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	05:32;	05:44;	RESISTIVITY (Ωm)	.28 @18°C	@ °
CHAMBER OPEN	: :	: :	C1 (frm. resis.) (ppm)	17.0 K	
CHAMBER FULL	: :	: :	C1 (frm. titrat.) (ppm)	16.0 K	
FILL TIME	:08:25	:02:25	NO ₃ (ppm)	187	
START BUILD UP	: :	: :	pH	6.8	
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	: :	: :	(d) OTHER SAMPLE PROPERTIES		
TOOL RETRACT	: :	: :			
TOTAL TIME	: :	: :			
B. SAMPLE PRESSURES			E. MUD PROPERTIES:		
IHP (psig)	2441		TYPE		
ISIP (psia)	2000		RESISTIVITY ()	@ °	@ °
IFP (psia)	1882.6	1898.0	C1 (frm. resis.) ()		
FFP (psia)	1678	1885	C1 (frm. titrat.) ()		
FSIP (psia)	2000.5	2001.1	NO ₃ or 1st. circ (ppm)	180 / 170	180 / 170
FHP (psig)			pH		
TEMP. CORR. if vapp ()			OTHER TRACERS ()		
COMMENTS			COMMENTS		
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED (m)	1399				
MAX. REC. TEMP (°C)	60.4				
TIME CIRC. STOPPED	14:45 5 DEC	: /			
TIME SINCE CIRC.	15:15	:			
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	1220				
VOL. GAS (cf)	33.9				
VOL. OIL (L)	6.3				
VOL. WATER ()					
VOL. FILTRATE (L)	11.2				
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C1 (ppm)	348 400				
C2 (ppm)	29 700				
C3 (ppm)	37 600				
C4 (ppm)	11 600				
C5 (ppm)	1 700				
C6 + (ppm)	200				
CO ₂ (%)	NIL				
H ₂ S (ppm)	NIL				
(b) OIL PROPERTIES					
DENSITY: HYDROMETER	64.4 @18°C				
°API REFRACTOMETER	@ °				
COLOUR	LT HONEY BN				
FLUORESCENCE	BRT BLU WH				
G.O.R. (cf/bbl)	860				
			NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected.		

PRESERVED SAMPLE

COMPANY ESSO AUSTRALIA LTD.

WELL TARWHINE No. 1

RUN No. 7

CHOKE SIZE .03/.02 "PRESS. GAUGE TYPE HP

	CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal		CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal
SEAT No.	77	77	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	2403.4	2403.4	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TOOL SET	: :	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	: :	: :	RESISTIVITY (Ωm) @ 22°C	0.26 @ 22°C	@ °
CHAMBER OPEN	: :	: :	Cl (frm. resis.) ()		
CHAMBER FULL	: :	: :	Cl (frm. titrat) (ppm)	19.0 K	
FILL TIME	01:30:	: :	NO ₃ (ppm)	140	
START BUILD UP	: :	: :	pH	9.2	
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	: :	: :	(d) OTHER SAMPLE PROPERTIES		
TOOL RETRACT	: :	: :			
TOTAL TIME	: :	: :			
B. SAMPLE PRESSURES			E. MUD PROPERTIES:		
IHP (psig)	4210		TYPE		
ISIP (psia)	3419.3		RESISTIVITY (Ω) @ °	@ °	@ °
IFP (psia)	400	380	Cl (frm. resis.) ()		
FFP (psia)	155 0	2280	Cl (frm. titrat) ()		
FSIP (psia)		3417	NO ₃ Drld/1st. circ ()	/	/
FHP (psig)	4200		pH		
TEMP. CORR. if app ()			OTHER TRACERS ()		
COMMENTS			COMMENTS		
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED ()					
MAX. REC. TEMP (°C)	91				
TIME CIRC. STOPPED	: /	: /			
TIME SINCE CIRC.	: :	: :			
D. SAMPLE RECOVERY					SAMPLE PRESERVED
SURFACE PRESSURE (psig)	1127				
VOL. GAS (cf)	35.92				
VOL. OIL (L)	0.1				
VOL. WATER ()					
VOL. FILTRATE (L)	5.5				
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C ₁ (ppm)	447 700		NOTE: Gas volume does not take liquid displacement into account, unless noted.		
C ₂ (ppm)	7 660		Take mud nitrates when tested zone was drilled and last circulation.		
C ₃ (ppm)	1 760		Unless otherwise noted, pressures are temperature corrected.		
C ₄ (ppm)	560				
C ₅ (ppm)	180				
C ₆ + (ppm)	TR				
CO ₂ (%)	0.7				
H ₂ S (ppm)	NIL				
(b) OIL PROPERTIES					
DENSITY: HYDROMETER @ °	@ °				
REFRACTOMETER @ °	@ °				
COLOUR					
FLUORESCENCE	WH BLU				
G.O.R. ()	--				

CORE LABORATORIES
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R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD

WELL TARWHINE No. 1

RUN No. 8

CHOKE SIZE .03/.02" PRESS. GAUGE TYPE HP

	CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal		CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal
SEAT No.	78	78	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	2365.5	2365.5	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TOOL SET	: :	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	:60:	:06:	RESISTIVITY (Ω m)	0.25 @20°C	@ °
CHAMBER OPEN	: :	: :	C1 (frm. resis.) (ppm)	17.0 K	
CHAMBER FULL	: :	: :	C1 (frm. titrat.) (ppm)	19.0 K	
FILL TIME	: :	: :	NO ₃ (ppm)	120	
START BUILD UP	: :	: :	pH	8.7	
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	: :	: :	(d) OTHER SAMPLE		
TOOL RETRACT	: :	: :	PROPERTIES		
TOTAL TIME	: :	: :			
B. SAMPLE PRESSURES			E. MUD PROPERTIES:		
IHP (psig)	4138		TYPE		
ISIP (psia)	3363.3		RESISTIVITY ()	@ °	@ °
IIFP (psia)	380	520	C1 (frm. resis.) ()		
FFP (psia)	1300.0	530.0	C1 (frm. titrat.) ()		
FSIP ()			NO ₃ Drlg/1st. circ ()	/	/
FHP ()			pH		
TEMP. CORR. if app ()			OTHER TRACERS ()		
COMMENTS			COMMENTS		
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED ()					
MAX. REC. TEMP (°C)	88				
TIME CIRC. STOPPED	: /	: /			
TIME SINCE CIRC.	: :	: :			
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	1142				
VOL. GAS (cf)	30.7				SAMPLE PRESERVED
VOL. OIL (L)	0.50				
VOL. WATER ()					
VOL. FILTRATE (L)	9.75				
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C ₁ (ppm)	394 045		NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected.		
C ₂ (ppm)	7 056				
C ₃ (ppm)	2 200				
C ₄ (ppm)	448				
C ₅ (ppm)	54				
C ₆ + (ppm)	39				
CO ₂ (%)	0.3				
H ₂ S (ppm)	NIL				
(b) OIL PROPERTIES					
DENSITY: HYDROMETER	@ °				
REFRACTOMETER	@ °				
COLOUR					
FLUORESCENCE	WH BLU				
G.O.R. (cf/bbl)	9560				

CORE LABORATORIES

R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD

WELL TARWHINE No. 11

RUN No. 10

CHOKE SIZE .03/.02 PRESS.GUAGE TYPE HP

	CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal		CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal
SEAT No.	128	128	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	2659.4	2659.4	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TOOL SET	21:04;	: :	COMMENTS		
PRETEST OPEN	21:05;	: :	(c) WATER PROPERTIES:		
TIME OPEN	:01;	: :	RESISTIVITY (Ω m)	0.22 @22°C	0.24 @22°C
CHAMBER OPEN	21:06;	21:50;	C1 (frm. resis.) ()		
CHAMBER FULL	21:48;	21:58;	C1 (frm. titrat.) (ppm)	17.5 K	18.1 K
FILL TIME	:42;	:08;	NO ₃ (ppm)	158	143
START BUILD UP	: :	: :	pH		
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	21:48;	: :	(d) OTHER SAMPLE PROPERTIES		
TOOL RETRACT	: :	: :	FILTRATE HAS FLUORESCENCE :	DUL GRN/YEL FLU	DUL GRN / YEL FLU
TOTAL TIME	:44;	:20;	E. MUD PROPERTIES:		
B. SAMPLE PRESSURES			TYPE		
IHP (psig)	4665		RESISTIVITY (Ω m)	1.2 @22°C	1.2 @22°C
ISIP (psia)	3792.6	3782.0	C1 (frm. resis.) ()		
IFP (psia)	431	120	C1 (frm. titrat.) (ppm)	19.2 K	
FFP (psia)	3778.8	3779.8	NO ₃ Drld/1st. circ ()	/	/
FSIP (psia)		3782.9	pH		
FHP (psig)	4665.1		OTHER TRACERS ()		
TEMP. CORR. if app()			COMMENTS		
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED (m)	2659.4				
MAX. REC. TEMP (°C)	91				
TIME CIRC. STOPPED	02:30 24/DEC	: /			
TIME SINCE CIRC.	19:00	: :			
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	527	630			
VOL. GAS (cf)	2.1	0.44			
VOL. OIL ()					
VOL. WATER ()					
VOL. FILTRATE (L)	21.3	3.5			
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C ₁ (ppm)	67 500	243 000	NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected.		
C ₂ (ppm)	2 150	6 470			
C ₃ (ppm)	687	2 260			
C ₄ (ppm)	760	152			
C ₅ (ppm)	NIL	NIL			
C ₆ + (ppm)	NIL	NIL			
CO ₂ (%)	NIL	NIL			
H ₂ S (ppm)	NIL	NIL			
(b) OIL PROPERTIES					
DENSITY: HYDROMETER @ °					
REFRACTOMETER @ °					
COLOUR					
FLUORESCENCE					
G.O.R. ()					

CORE LABORATORIES

R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD

WELL TARWHINE No. 1

RUN No. 11

CHOKE SIZE .03/.02 " PRESS. GAUGE TYPE HP

	CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal		CHAMB. 1 SIZE 6 gal	CHAMB. 2 SIZE 1 gal
SEAT No.	129	129	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	2779	2779	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TOOL SET	02:34:	: :	COMMENTS		
PRETEST OPEN	02:34:	: :	(c) WATER PROPERTIES:		
TIME OPEN	:02:	: :	RESISTIVITY (Ω m)	0.26 @ 21°C	0.24 @ 28°C
CHAMBER OPEN	02:36:	03:29:	C1 (frm. resis.) ()		
CHAMBER FULL	03:27:	03:36:	C1 (frm. titrat.) (ppm)	17.2 K	17.1 K
FILL TIME	:51:	:07:	NO ₃ (ppm)	143	165
START BUILD UP	: :	: :	pH		
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	03:27:	03:43:	(d) OTHER SAMPLE PROPERTIES		
TOOL RETRACT	: :	03:44:	FILTRATE HAS FLUORESCENCE :	DUL GRN / YEL	DUL GRN / YEL
TOTAL TIME	53 :	:15:	E. MUD PROPERTIES:		
B. SAMPLE PRESSURES			TYPE		
IHP (psig)	4864		RESISTIVITY (Ω)	@ °	@ °
ISIP (psia)	3975.9	3970.8	C1 (frm. resis.) ()		
IFP (psia)	354	150	C1 (frm. titrat.) ()		
FFP (psia)		3970	NO ₃ Drld / 1st. circ ()	/	/
FSIP ()			pH		
FHP ()			OTHER TRACERS ()		
TEMP. CORR. if app ()			COMMENTS		
COMMENTS			F. GENERAL COMMENTS		
C. TEMPERATURE					
DEPTH TOOL REACHED ()					
MAX. REC. TEMP (°C)	97				
TIME CIRC. STOPPED	02:30 24 DEC	: /			
TIME SINCE CIRC.	25:25	: :			
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	483	600			
VOL. GAS (cf)	2.24	0.52			
VOL. OIL ()					
VOL. WATER ()					
VOL. FILTRATE (L)	21.1	3.65			
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C1 (ppm)	63 600	73 700	NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected.		
C2 (ppm)	1 520	1 760			
C3 (ppm)	283	328			
C4 (ppm)	38	440			
C5 (ppm)	NIL	NIL			
C6 + (ppm)	NIL	NIL			
CO ₂ (%)	NIL	NIL			
H ₂ S (ppm)	NIL	NIL			
(b) OIL PROPERTIES					
DENSITY: HYDROMETER	@ °				
REFRACTOMETER	@ °				
COLOUR					
FLUORESCENCE					
G.O.R. ()					

CORE LABORATORIES

F.I.T/R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD. WELL TARWHINE No. 1RUN No. RFT 12 PRESSURE GAUGE TYPE H.P.

CHAMBER No.	1.	2.		CHAMB. 1.	CHAMB. 2.
CHAMBER CAPACITY (gal)	6.00	2.75			
CHOKE SIZE (sq in)	0.030	0.040			
SEAT No.	130	130			
DEPTH (m) (frm. RKB)	2498.5	2498.5			
A. RECORDING TIMES					
	HH:MM:SS	HH:MM:SS			
TOOL SET	19:35:	-:-			
PRETEST OPEN	19:35:	-:-			
TIME OPEN	00:01:	-:-			
CHAMBER OPEN	19:36:	20:20:			
CHAMBER FULL	20:19:	20:43:			
FILL TIME	00:43:	00:21:			
START BUILD UP	20:12:	20:40:			
FINISH BUILD UP	20:17:	20:42:			
BUILD UP TIME	00:05:	00:02:			
SEAL CHAMBER	20:19:	20:44:			
TOOL RETRACT	-:-	20:44:			
TOTAL TIME	00:44:	00:22:			
B. SAMPLE PRESSURES					
IHP (psig)	4480	-			
ISIP (psia)	3554.1	-			
IFP (psia)	78	98			
FFP (psia)	3550	3550			
FSIP (psia)	3553.2	3553.1			
FHP (psig)	-	4397			
TEMP. CORR. if app()	-	-			
COMMENTS	-	-			
C. TEMPERATURE					
DEPTH TOOL REACHED (m)	2540	-			
MAX. REC. TEMP. (°C)	82	-			
TIME CIRC. STOPPED	13:00 25/DEC	-:- /			
TIME SINCE CIRC.	06:30	-:-			
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	432	10			
VOL. GAS (cf)	1.22	.098			
VOL. OIL (L)	3.36	1.24			
VOL. WATER (L)	-	-			
VOL. FILTRATE (L)	21.9	9.0			
VOL. CONDENSATE (L)	0.12	0.14			
VOL. OTHER SAND (L)	0.002	0.001			
E. SAMPLE PROPERTIES					
(a) GAS COMP. C1 (ppm)	138 000	INSUFFICIENT GAS			
C2 (ppm)	1 140	TO MEASURE			
C3 (ppm)	162				
C4 (ppm)	23				
C5 (ppm)	NIL				
C6 + (ppm)	NIL				
CO2 (%)	NIL				
H2S (ppm)	NIL				
(b) OIL PROPERTIES					
DENSITY: HYDROMETER	62.3 @15°C	62.4 @15°C			
(A.P.I.) REFRACTOMETER	62.4 @15°C	62.9 @15°C			
COLOUR	HONEY/BRN	HONEY/BRN			
FLUORESCENCE	BRT BLU	BRT BLU			
G.O.R. (SCF/STB)	57.7	-			
OIL PROPERTIES CONT.					
SMELL		HI-SULPHUR		HI-SULPHUR	
POUR POINT (C°)		<-4		<-4	
COMMENTS					
(c) WATER PROPERTIES:					
RESISTIVITY (Ω m)	0.32 @22°C	0.28 @22°C			
C1 (frm. resis.) (ppm)	17.6K	17.0 K			
C1 (frm. titrat.) (ppm)	18.8 K	18.2 K			
NO ₃ (ppm)	99	121			
pH	9.0	8.7			
OTHR. TRACERS IPA (ppm)	146	149			
DENSITY (ppp)	9.8	9.8			
FLUORESCENCE	DUL GN/YEL	DL GN/YEL			
COLOUR	DK BRN	DK BRN			
COMMENTS		FILTRATE		FILTRATE	
(d) OTHER SAMPLE PROPERTIES					
E. MUD PROPERTIES:					
TYPE	S/W GEL	S/W GEL			
RESISTIVITY (Ω m)	0.34 @24°C	0.34 @24°C			
C1 (frm. resis.) (ppm)	17.8 K	17.8 K			
C1 (frm. titrat.) (ppm)	16.9 K	16.9 K			
NO ₃ Drld/1st. circ (ppm)	105/100	105/100			
pH	8.9	8.9			
OTHER TRACERS I.P.A. (ppm)	155	155			
DENSITY (ppp)	9.8	9.8			
F. GENERAL COMMENTS					
NOTE: Gas volume does not take liquid displacement into account, unless noted.					
Take mud nitrates when tested zone was drilled and last circulation.					
Unless otherwise noted, pressures are temperature corrected.					
Chamber 1 is the first chamber to be opened.					

CORE LABORATORIES

F.I.T/R.F.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD. WELL TARWHINE No. 1

RUN No. RFT 12 PRESSURE GAUGE TYPE H.P.

CHAMBER No.	1.	2.		CHAMB. 1.	CHAMB. 2.	
CHAMBER CAPACITY (gal)	6.00	2.75				
CHOKER SIZE (sq in)	0.030	0.040				
SEAT No.	130	130				
DEPTH (m) (frm.RKB)	2498.5	2498.5				
A. RECORDING TIMES						
	HH:MM:SS	HH:MM:SS				
TOOL SET	19:35:	: :				
PRETEST OPEN	19:35:	: :				
TIME OPEN	00:01:	: :				
CHAMBER OPEN	19:36:	20:20:				
CHAMBER FULL	20:19:	20:43:				
FILL TIME	00:43:	00:21:				
START BUILD UP	20:12:	20:40:				
FINISH BUILD UP	20:17:	20:42:				
BUILD UP TIME	00:05:	00:02:				
SEAL CHAMBER	20:19:	20:44:				
TOOL RETRACT	: :	20:44:				
TOTAL TIME	00:44:	00:22:				
B. SAMPLE PRESSURES						
IHP (psig)	4480					
ISIP (psia)	3554.1	-				
IFP (psia)	78	98				
FFP (psia)	3550	3550				
FSIP (psia)		3553.1				
FHP (psia)		4397				
TEMP. CORR. if app()						
COMMENTS						
C. TEMPERATURE						
DEPTH TOOL REACHED (m)	2540					
MAX. REC. TEMP. (°C)	82					
TIME CIRC. STOPPED	13:00 25/DEC	: /				
TIME SINCE CIRC.	06:30	:				
D. SAMPLE RECOVERY						
SURFACE PRESSURE (psia)	432	10				
VOL. GAS (cf)	1.22	.098				
VOL. OIL ()						
VOL. WATER ()						
VOL. FILTRATE (L)	21.9	9.0				
VOL. CONDENSATE ()						
VOL. OTHER ()						
E. SAMPLE PROPERTIES						
(a) GAS COMP. C1 (ppm)	138 000	INSUFFICI	NOTE: Gas volume does not take liquid displacement into account, unless noted. Take mud nitrates when tested zone was drilled and last circulation. Unless otherwise noted, pressures are temperature corrected. Chamber 1 is the first chamber to be opened.			
C2 (ppm)	1 140	ENT GAS				
C3 (ppm)	162	TO				
C4 (ppm)	23	MEASURE				
C5 (ppm)	NIL					
C6 + (ppm)	NIL					
CO2 (%)	NIL					
H2S (ppm)	NIL					
(b) OIL PROPERTIES						
DENSITY HYDROMETER ()	@ °	@ °				
REFRACTOMETER ()	@ °	@ °				
COLOUR						
FLUORESCENCE						
G.O.R. ()						
OIL PROPERTIES CONT.:						
SMELL						
POUR POINT (°)						
COMMENTS						
(c) WATER PROPERTIES:						
RESISTIVITY (Ω m)		@ °	@ °			
C1 (frm. resis.) ()						
C1 (frm. titrat.) (ppm)	18.8 K		18.2 K			
NO3 (ppm)	99		121			
pH	9.0		8.7			
OTHR. TRACERS ()						
DENSITY ()						
FLUORESCENCE	DUL GN/YEL		DL GN/YEL			
COLOUR	DK BRN		DK BRN			
COMMENTS	FILTRATE		FILTRATE			
(d) OTHER SAMPLE PROPERTIES						
E. MUD PROPERTIES:						
TYPE						
RESISTIVITY (Ω)		@ °	@ °			
C1 (frm. resis.) ()						
C1 (frm. titrat.) ()						
NO3 Drlg/1st. circ ()	/		/			
pH						
OTHER TRACERS ()						
DENSITY ()						
F. GENERAL COMMENTS						

CORE LABORATORIES

F.I.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD.

WELL TARWHINE No. 1

RUN No. 1

CHOKE SIZE 0.20/0.20 PRESS. GAUGE TYPE ST.GGE

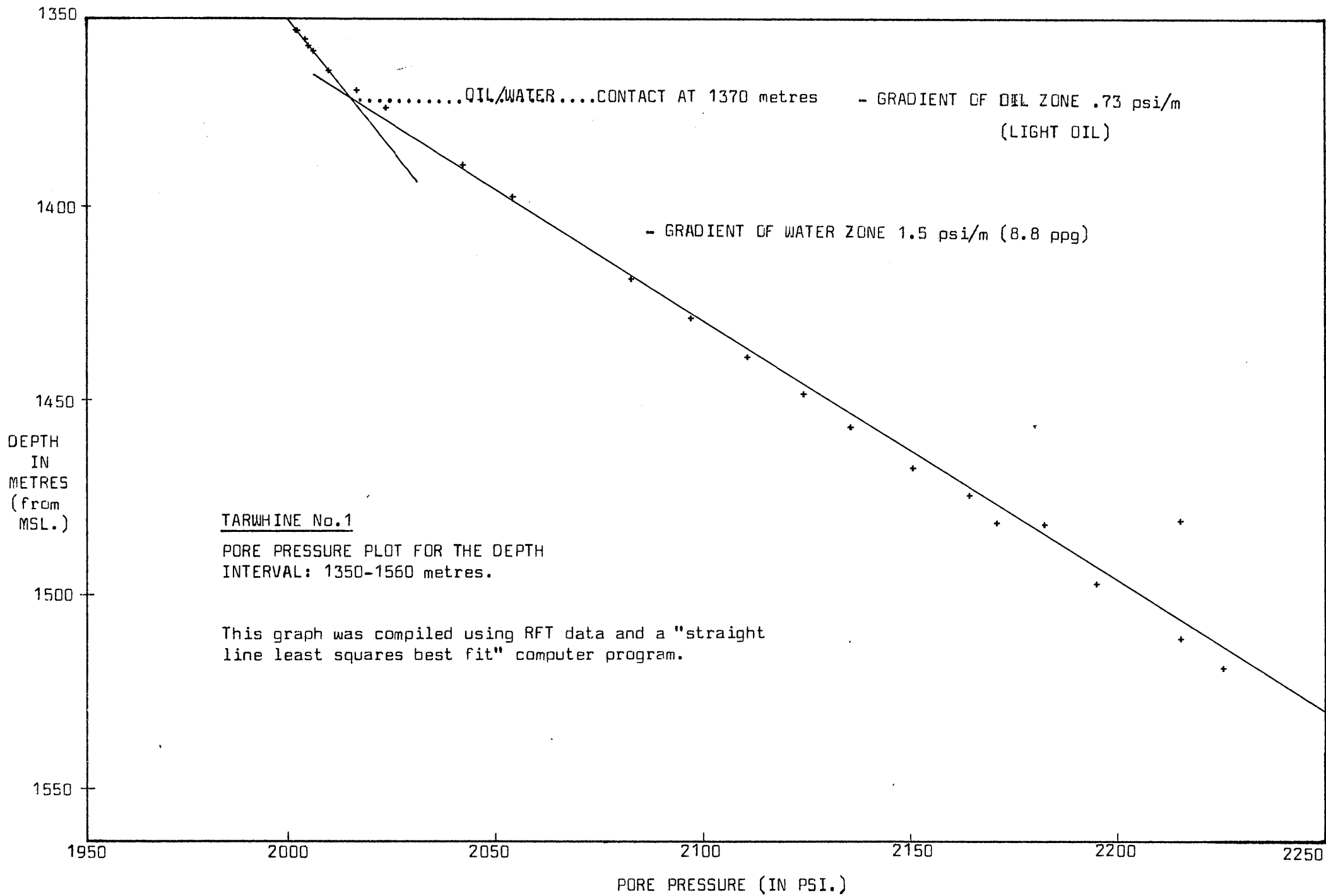
	CHAMB. 1 SIZE 12 gal	CHAMB. 2 SIZE 660ml		CHAMB. 1 SIZE 12 gal	CHAMB. 2 SIZE 660ml
SEAT No.	1	1	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	2779	2779	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TCOL SET	: :	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	: :	: :	RESISTIVITY (Ωm)	0.32 @ 22°C	0.28 @ 22°C
CHAMBER OPEN	02 : 00:	06 : 30:	C1 (frm. resis.) (ppm)	12.0 K	14 .4 K
CHAMBER FULL	: :	: :	C1 (frm. titrat) (ppm)	14.5 K	13.0 K
FILL TIME	: :	: :	NO ₃ (ppm)	248	264
START BUILD UP	: :	: :	pH	11.8	11.4
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	06 : 30:	06 : 45:	(d) OTHER SAMPLE		
TOOL RETRACT	: :	: :	PROPERTIES WT ppg	9.8	9.8
TOTAL TIME	04 : 30:	00 : 15:	FILTRATE HAS	PALE YELL/	DUL OLIVE
B. SAMPLE PRESSURES			FLUORESCING SCUM :	GRN FLU	GRN FLU
IHP ()			E. MUD PROPERTIES:		
ISIP ()			TYPE	SEAWATER	GEL
IFP (psig)	4540	4621	RESISTIVITY (Ωm)	0.33 @ 22°C	0.33 @ 22°C
FFP (psig)	4662	4625	C1 (frm. resis.) (ppm)		
FSIP ()			C1 (frm. titrat) (ppm)	14.5 K	14.5 K
FHP (psig)		5310	NO ₃ Drld/1st. circ (ppm)	170 / 55	170 / 55
TEMP. CORR. if vapp ()			pH	12.3	12.3
COMMENTS			OTHER TRACERS ()		
C. TEMPERATURE			COMMENTS		
DEPTH TOOL REACHED ()			F. GENERAL COMMENTS		
MAX. REC. TEMP (°)			RECOVERED FLUID APPEARS TO BE CONTAMINATED		
TIME CIRC. STOPPED : /			FILTRATE WITH A TRACE OF OIL (FLU)		
TIME SINCE CIRC. : :					
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	350	115			
VOL. GAS (cf)	2.5	0.1			
VOL. OIL ()					
VOL. WATER ()					
VOL. FILTRATE (L)	30.50	0.600			
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES			NOTE: Gas volume does not take liquid displacement into account, unless noted		
(a) GAS COMP. C ₁ (ppm)	297 676	GAS VOL	displacement into account, unless noted		
C ₂ (ppm)	1 808	TUO SMALL	Take mud nitrates when tested zone was drilled and last circulation.		
C ₃ (ppm)	325		Unless otherwise noted, pressures are temperature corrected.		
C ₄ (ppm)	105				
C ₅ (ppm)	62				
C ₆ + (ppm)	NIL				
CO ₂ (%)	0.05				
H ₂ S (ppm)	NIL				
(b) OIL PROPERTIES					
DENSITY: HYDROMETER @ °					
REFRACTOMETER @ °					
COLOUR					
FLUORESCENCE					
G.O.R. ()					

CORE LABORATORIES

F.I.T. DATA SHEET - SAMPLING DATA

COMPANY ESSO AUSTRALIA LTD.WELL TARWHINE NO. 1RUN No. 2CHOKE SIZE 0.20/0.20 PRESS. GAUGE TYPE ST. GGE

	CHAMB. 1 SIZE 12 gal	CHAMB. 2 SIZE 660ml		CHAMB. 1 SIZE 12 gal	CHAMB. 2 SIZE 660 ml
SEAT No.	2	2	OIL PROPERTIES CONT:		
DEPTH (m) (frm RKB)	2661.5	2661.5	SMELL		
A. RECORDING TIMES			POUR POINT (°)		
TOOL SET	19:45:	: :	COMMENTS		
PRETEST OPEN	: :	: :	(c) WATER PROPERTIES:		
TIME OPEN	: :	: :	RESISTIVITY (Ω m)	0.24 @22°C	0.32 @22°C
CHAMBER OPEN	19:50:	24:00:	C1 (frm. resis.) (ppm)	16.4 K	12.1 K
CHAMBER FULL	: :	: :	C1 (frm. titrat.) (ppm)	15.0 K	13.5 K
FILL TIME	: :	: :	NO ₃ (ppm)	540	95
START BUILD UP	: :	: :	pH	11.8	12.0
FINISH BUILD UP	: :	: :	OTHR. TRACERS ()		
BUILD UP TIME	: :	: :	COMMENTS		
SEAL CHAMBER	24:00:	00:15:	(d) OTHER SAMPLE PROPERTIES		
TOOL RETRACT	: :	: :	DENSITY (ppg)	9.8	9.8
TOTAL TIME	04:10:	00:15:			
B. SAMPLE PRESSURES			E. MUD PROPERTIES:		
IHP ()			TYPE	SEAWATER	GEL
ISIP ()			RESISTIVITY (Ω m)	0.33 @22°C	0.33 @22°C
IFP (psig)	4460	4539	C1 (frm. resis.) (ppm)		
FFP (psig)	4495		C1 (frm. titrat.) (ppm)	14.0 K	14.0 K
FSIP (psig)	4602	4583	NO ₃ Drld/1st. circ (ppm)	185/55	185 / 55
FHP (psig)		5180	pH	12.2	12.2
TEMP. CORR. if app()			OTHER TRACERS		
COMMENTS			COMMENTS WT (ppg)	9.8	9.8
C. TEMPERATURE			F. GENERAL COMMENTS		
DEPTH TOOL REACHED ()					
MAX. REC. TEMP (°)			SAMPLE APPEARS TO BE	FILTRATE	
TIME CIRC. STOPPED : / :					
TIME SINCE CIRC. : :					
D. SAMPLE RECOVERY					
SURFACE PRESSURE (psig)	130	*			
VOL. GAS (cf)	1.5	NIL			
VOL. OIL ()					
VOL. WATER ()					
VOL. FILTRATE (L)	36.0	0.635			
VOL. CONDENSATE ()					
VOL. OTHER ()					
E. SAMPLE PROPERTIES					
(a) GAS COMP. C1 (ppm)	58 735		NOTE: Gas volume does not take liquid displacement into account, unless noted.		
C2 (ppm)	904		Take mud nitrates when tested zone was drilled and last circulation.		
C3 (ppm)	297		Unless otherwise noted, pressures are temperature corrected.		
C4 (ppm)	211		* Pressure too small to accurately measure		
C5 (ppm)	424				
C6 + (ppm)	99				
CO ₂ (%)	0.05				
H ₂ S (ppm)	NIL				
(b) OIL PROPERTIES					
DENSITY: HYDROMETER @ °					
REFRACTOMETER @ °					
COLOUR					
FLUORESCENCE					
G.O.R. ()					



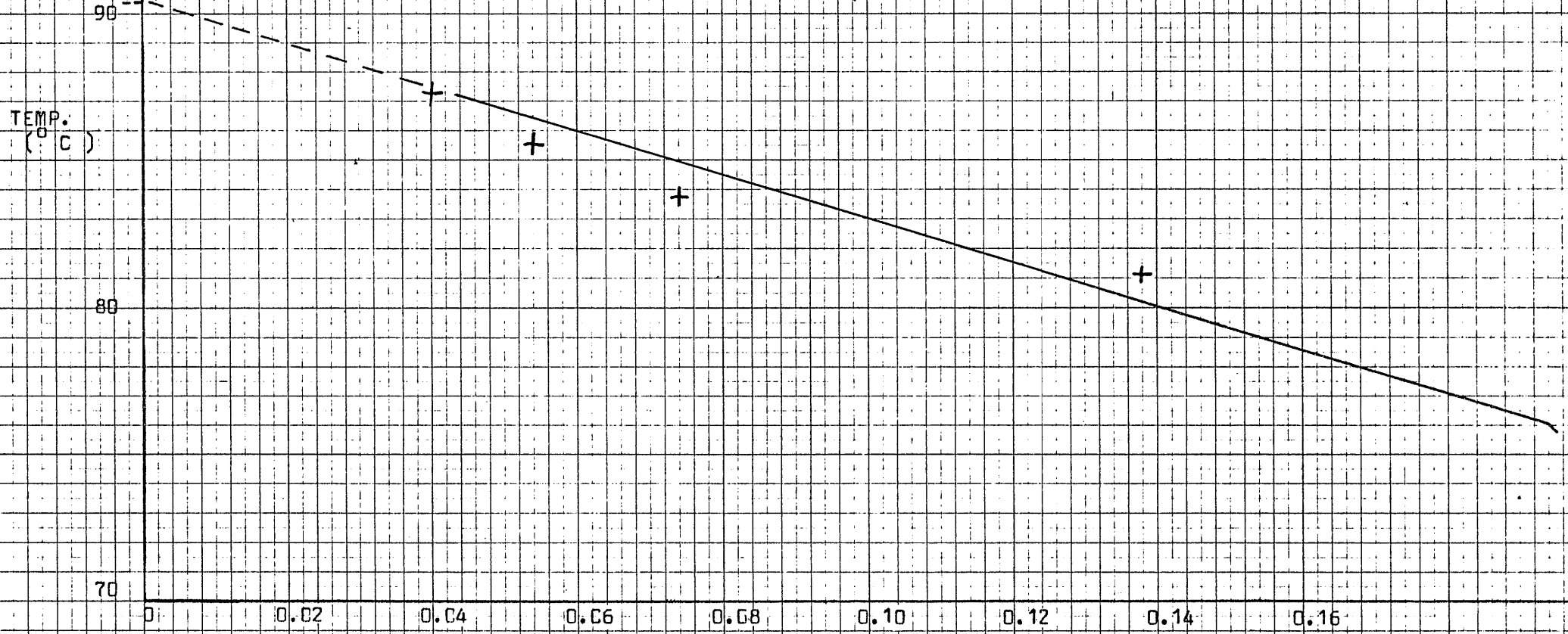
ESTIMATION OF B.H.T. AT 2519 m

WIRELINE No. 1

Extrapolated B.H.T. : 90.5° C

DATA FROM WIRELINE LOGS :-

	TEMP	T	1/T
Suite No. 4 , Run No 1	81.1	7.25	0.138
2	83.8	13.50	0.074
3	85.5	18.50	0.054
4	87.2	24.75	0.040



$\frac{1}{T}$

Where T is time in hours after circulation

TARWINE No. 1

ESTIMATION OF BOTTOM-HOLE TEMPERATURE AT 2955 metres (K.B.)

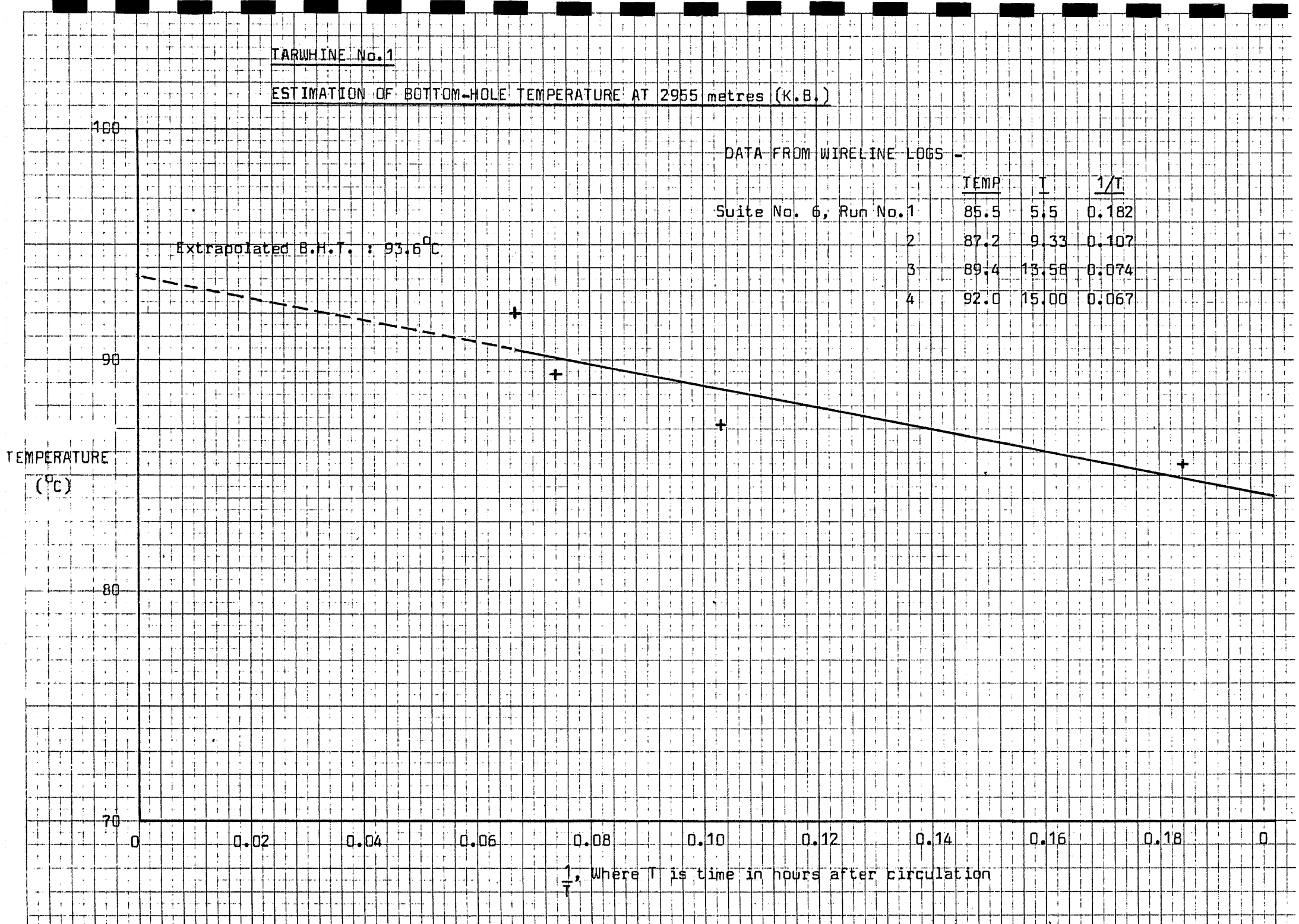
DATA FROM WIRELINE LOGS -

	TEMP	T	1/T
Suite No. 6, Run No.1	85.5	5.5	0.182
	87.2	9.33	0.107
	89.4	13.58	0.074
	92.0	15.00	0.067

Extrapolated B.H.T. : 93.6°C

TEMPERATURE
(°C)

$\frac{1}{T}$, Where T is time in hours after circulation



14. SIDEWALL CORE GAS ANALYSIS.

15. GAS COMPOSITION ANALYSIS

The composition of entrained reservoir gas in the mud is significant in determining the origin and the value of a show. Two graphical methods are employed for processing the mud gas chromatography results. These techniques however are empirical and by no means definitive.

LOG PLOT

The ratios of C1/C2, C1/C3, C1/C4, C1/C5 and C1/C6 are plotted on three-cycle log paper for each hydrocarbon show. The plots can be evaluated by the following criteria :

1. Productive dry gas zones may show only C1, but abnormally high shows of C1 are usually indicative of saltwater.
2. A ratio of C1/C2 between approximately 2 and 15 indicates oil and between 15 and 65, gas. If the C1/C2 ratio is below about 2, or above about 65, the zone is probably non-productive.

The actual values of the gas/oil/water limits will vary from area to area.
3. If the C1/C2 ratio is low in the oil section and the C1/C4 ratio is high in the gas section, the zone is probably non-productive.
4. If any ratio (with the exception of C1/C5, if oil is used in the mud) is lower than the preceding ratio, the zone is probably non-productive.
5. The ratios may not be definitive for low permeability zones; however, steep ratio plots may indicate a tight zone.

TRIANGULATION PLOT

The triangular diagram is obtained by tracing lines on three scales at 120 degrees to each other, corresponding respectively to the ratios of C2, C3 and normal C4 to the total gas (C1 to nC4). The scales are arranged in such a way that if the apex of the triangle is upward, a gas zone is indicated, while if the apex points downward, an oil zone is suggested.

A large triangle plot represents dry gas or low GOR oil, while small triangles represent wet gases or high GOR oils. The homothetic centre of the plot should fall inside the top part of the triangle, otherwise the heavier hydrocarbon is abnormal and may indicate a dead show, (or coal gas).

GAS COMPOSITION ANALYSES. Tarwhine No. 1.

The first three diagrams all represent oil zones. The show at 1386 metres suggests oil with a particularly high GOR is present. At 1384 and 1386 metres, the composition of the heavier hydrocarbons is abnormal. In particular the C_1 / C_4 ratios indicate much lower permeabilities than would be expected. The C_1 / C_2 and C_1 / C_3 ratios suggest excellent permeabilities in contrast.

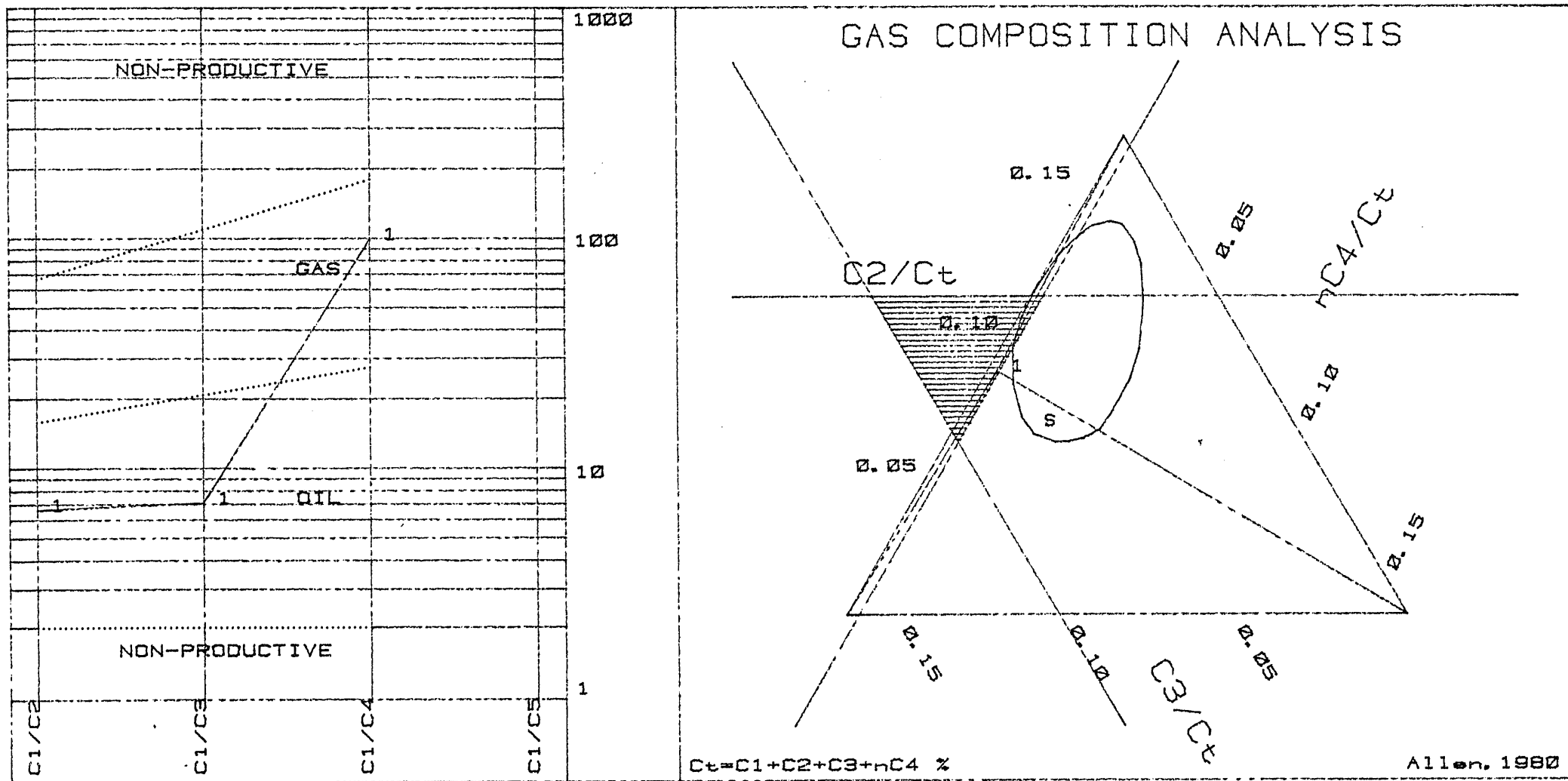
The next six gas composition analyses all exhibit similar features, i.e. each one represents a gas zone, though the gas at 2357, 2376 and 2499 ratios is probably non-productive. In all six zones the permeabilities appear to be fair to good. The wetness of these gas zones increases with depth, being dry at 2357 metres and moderately wet at 2573 metres.

The remaining diagrams all manifest non-productive dry gas zones with fair to average permeabilities, and are included in this report for reference purposes only.

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

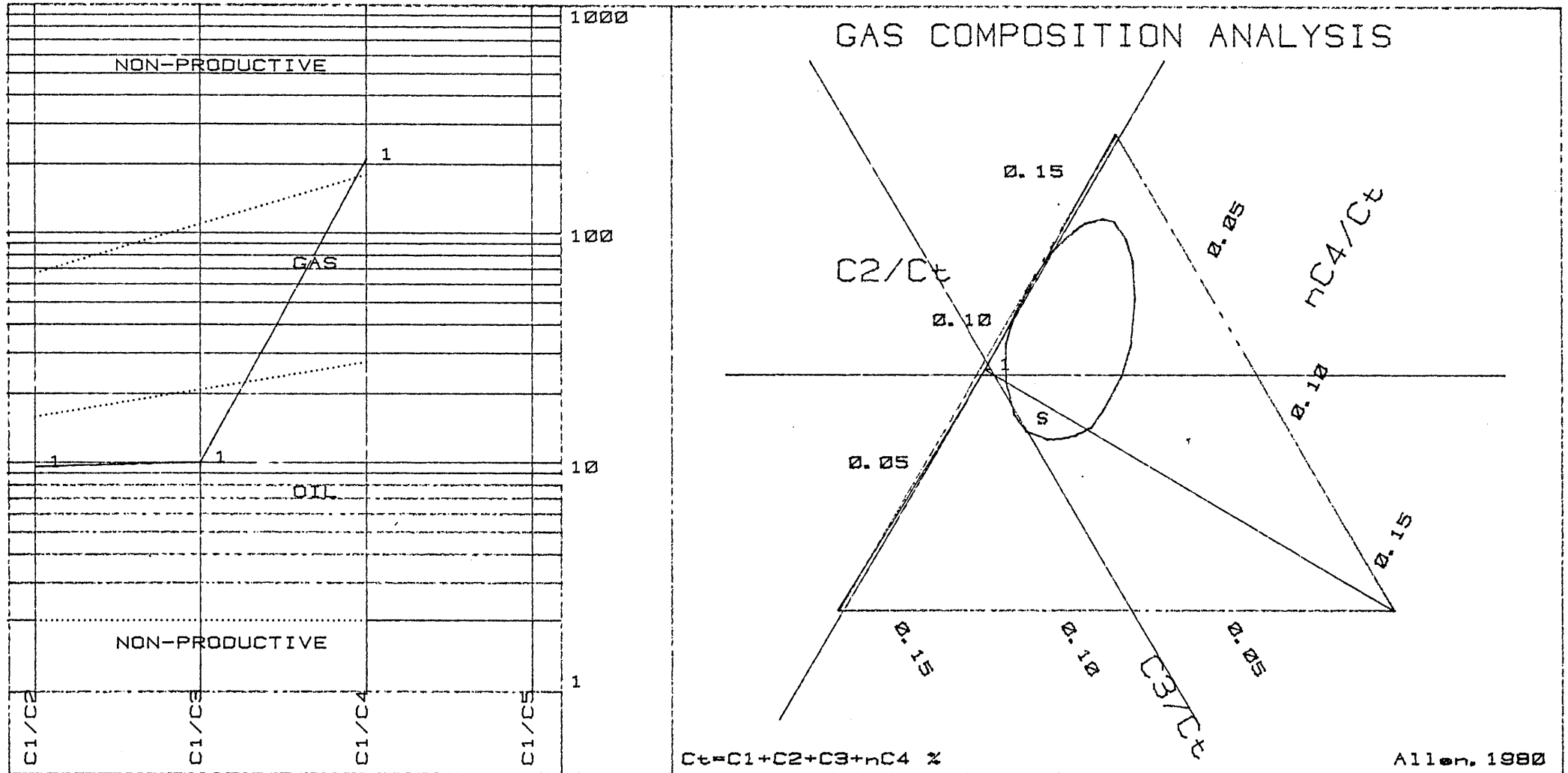


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	1384	19.900	3.000	2.800	0.100	0.100	0.000	0.000	25.800	7	7	100	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

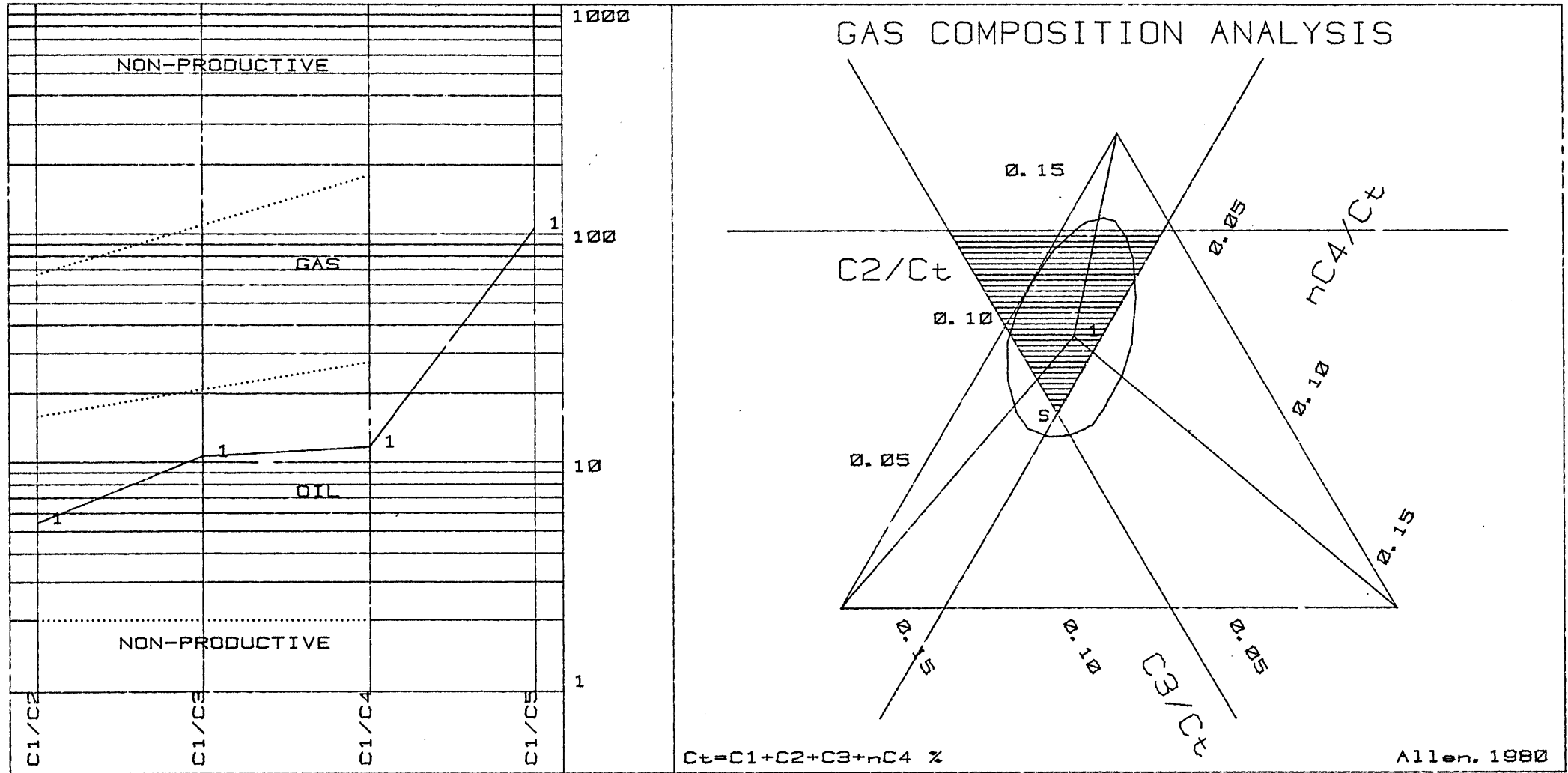


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	1386	42.200	4.400	4.200	0.100	0.100	0.000	0.000	50.900	10	10	211	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

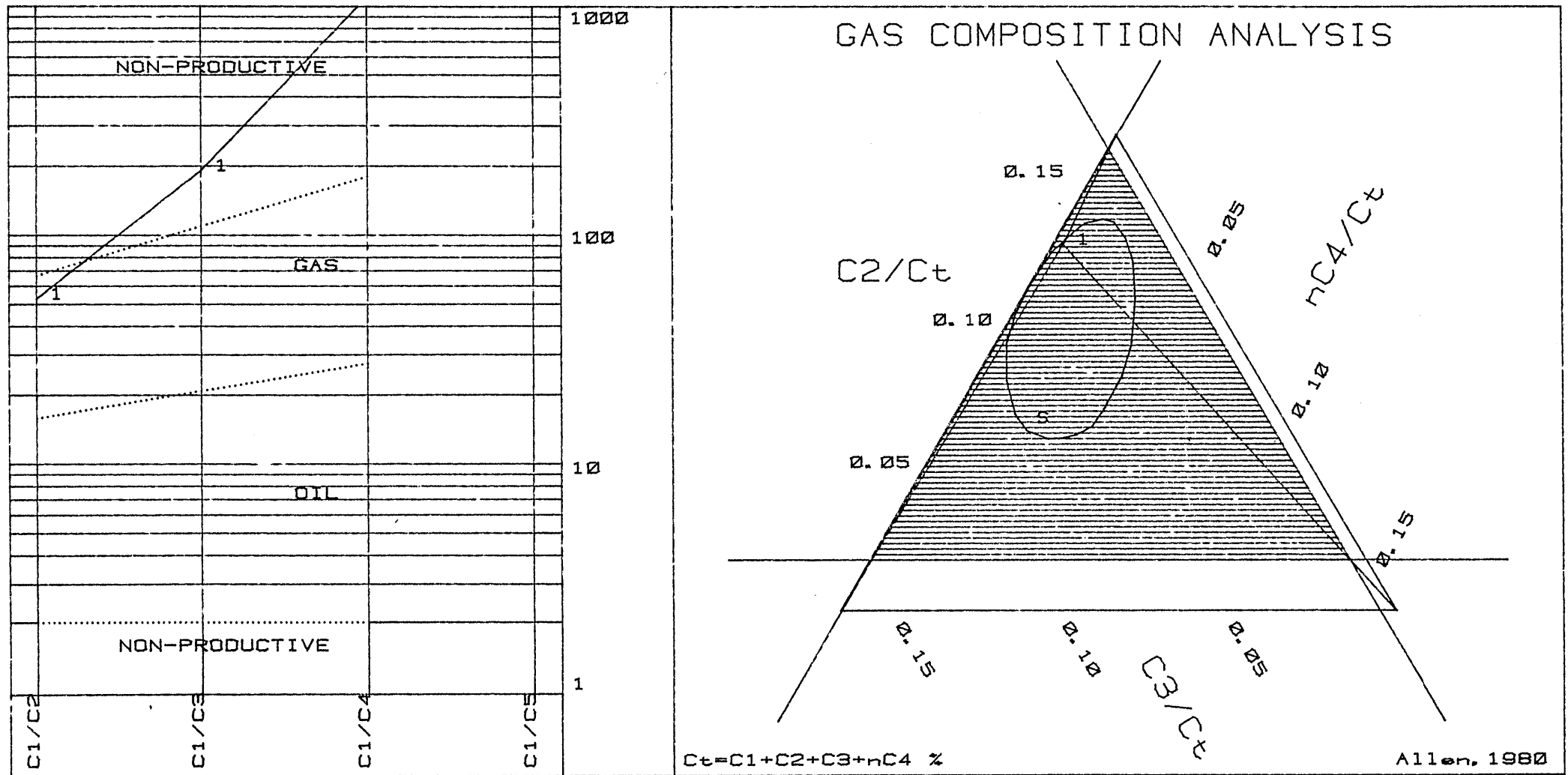


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 1392	4900.000	900.000	460.000	210.000	210.000	46.000	0.000	6470.000	5	11	12	107

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

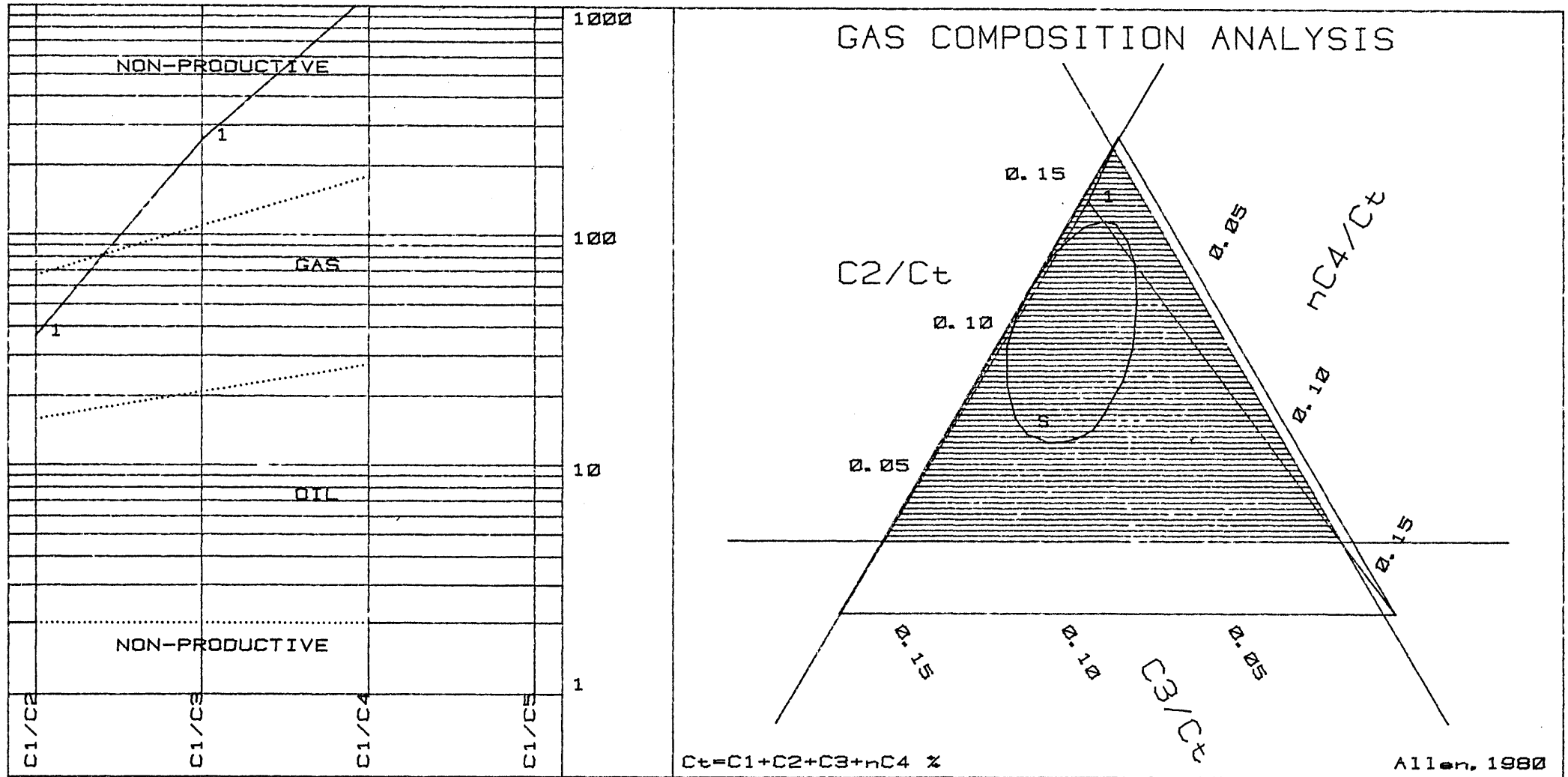


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2357	15322.000	290.000	80.000	7.000	7.000	0.000	0.000	15699.000	0.053	192	1094	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

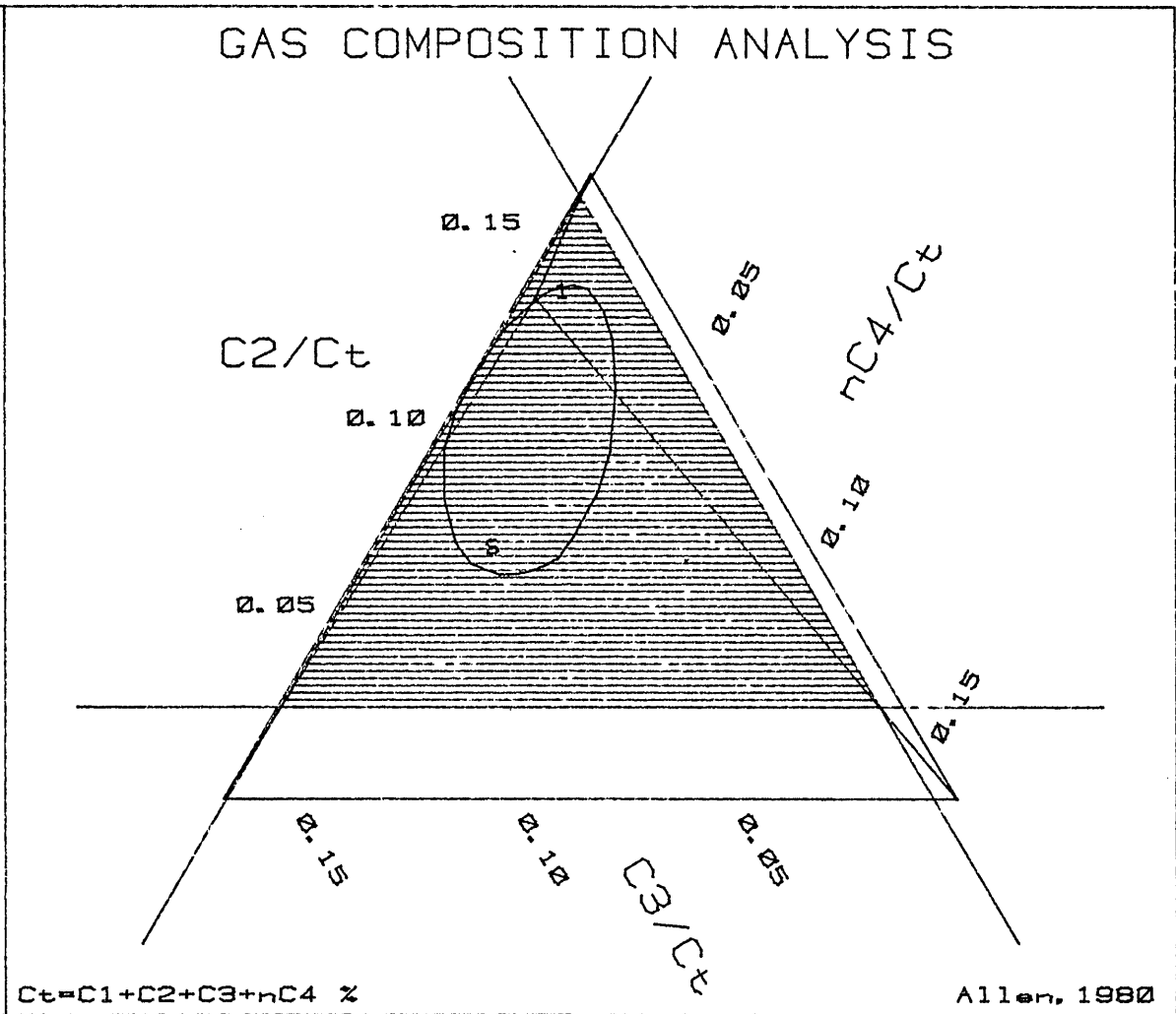
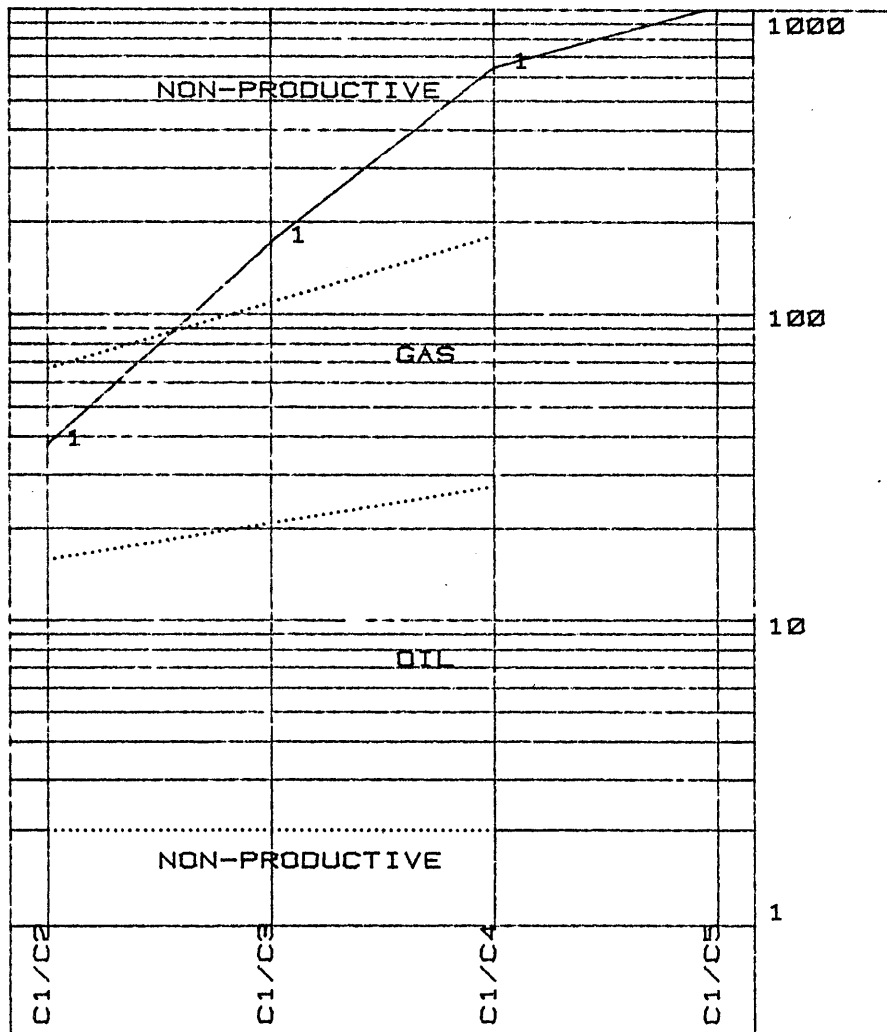


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2376	33868.00	929.00	131.00	15.00	15.00	0.00	0.00	34943.00	36	259	1129	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

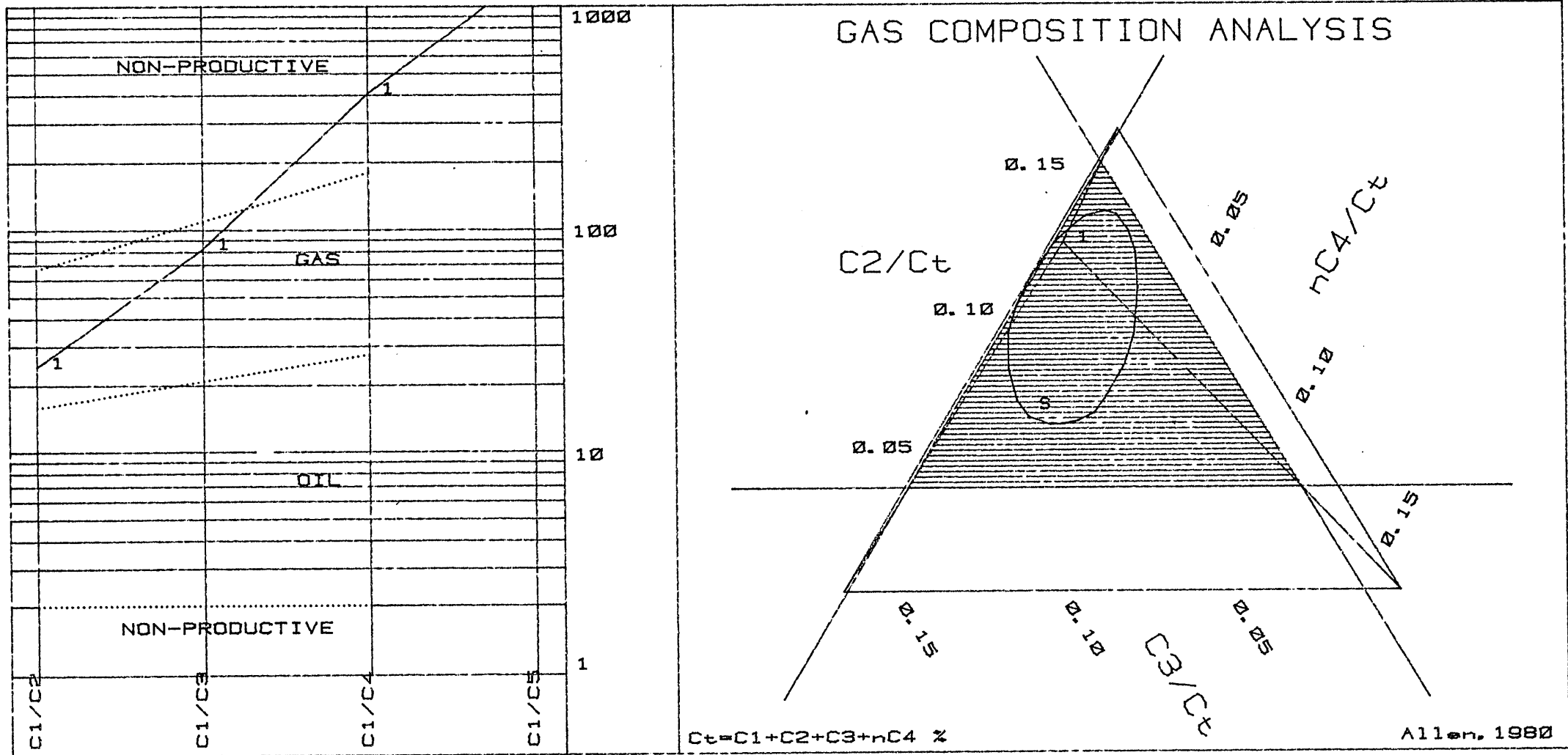


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2499	22580.000	600.000	131.000	17.500	17.500	22.000	0.000	23328.500	38	172	645	1026

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

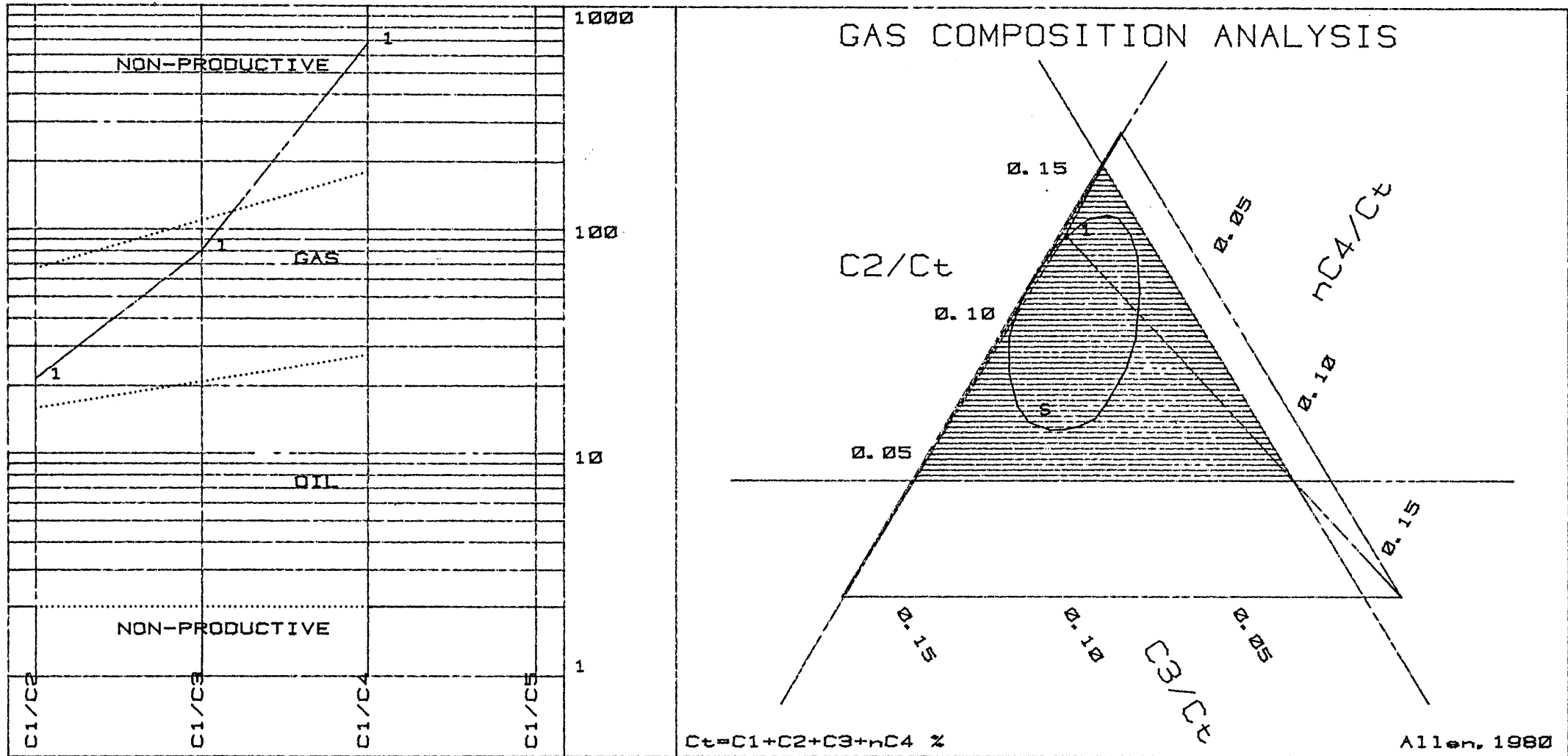


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2571	1.141	0.047	0.014	0.001	0.001	0.001	0.000	1.204	24	83	408	1427

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

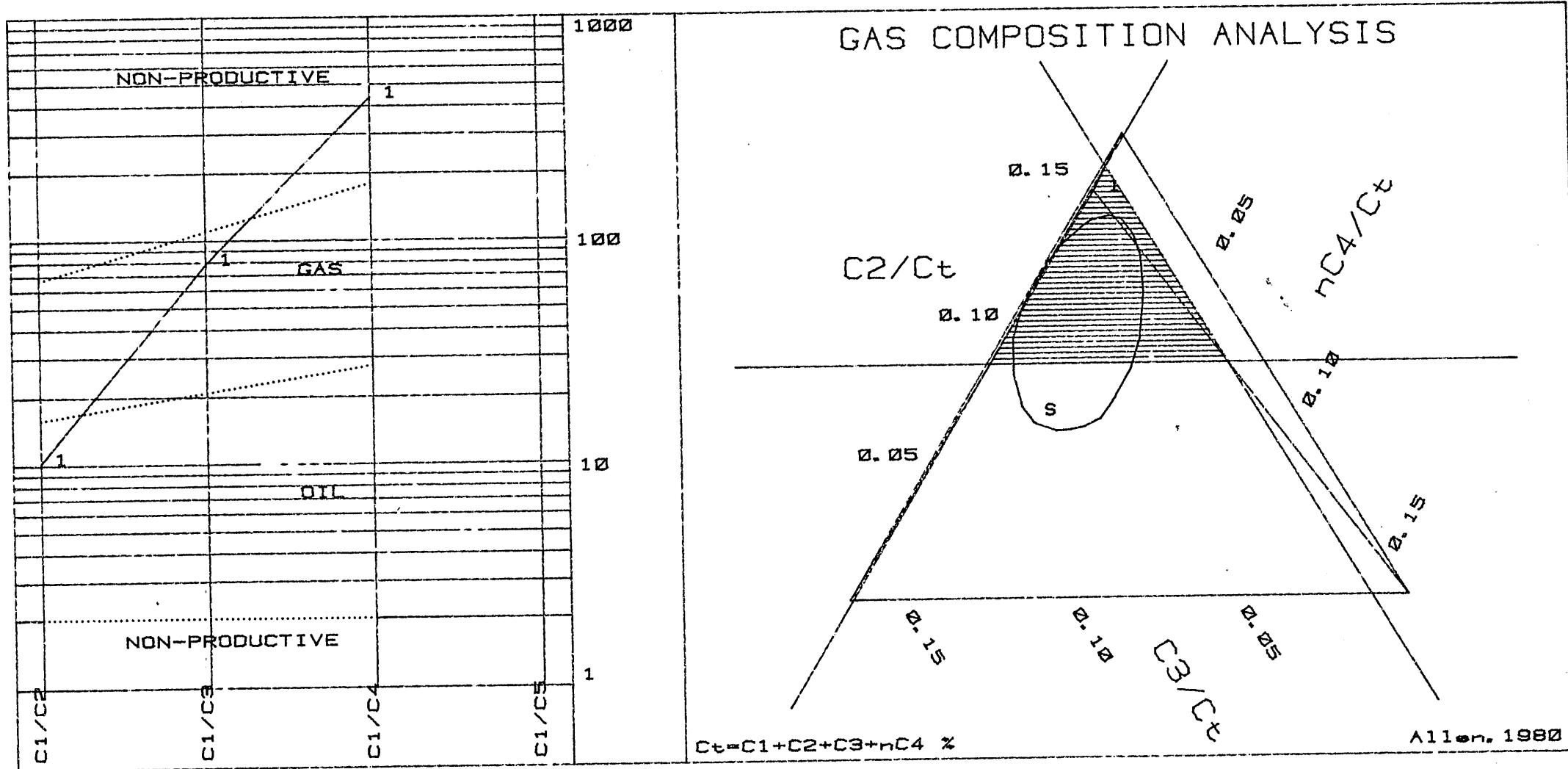


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2572	0.613	0.029	0.008	0.000	0.000	0.000	0.000	0.649	21	81	681	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE # 1

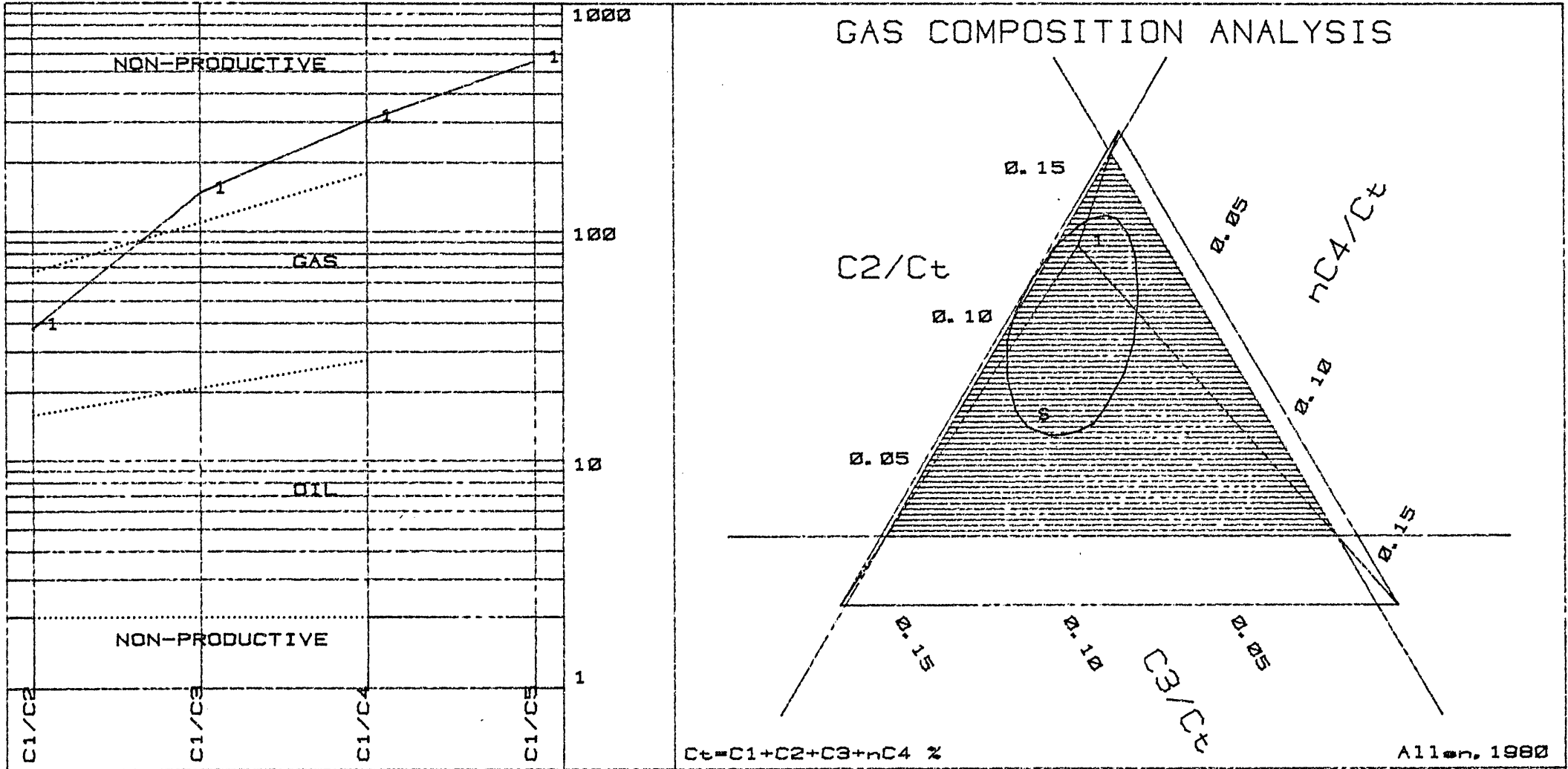


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2573	0.306	0.030	0.004	0.000	0.000	0.000	0.000	0.340	10	79	437	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO. 1

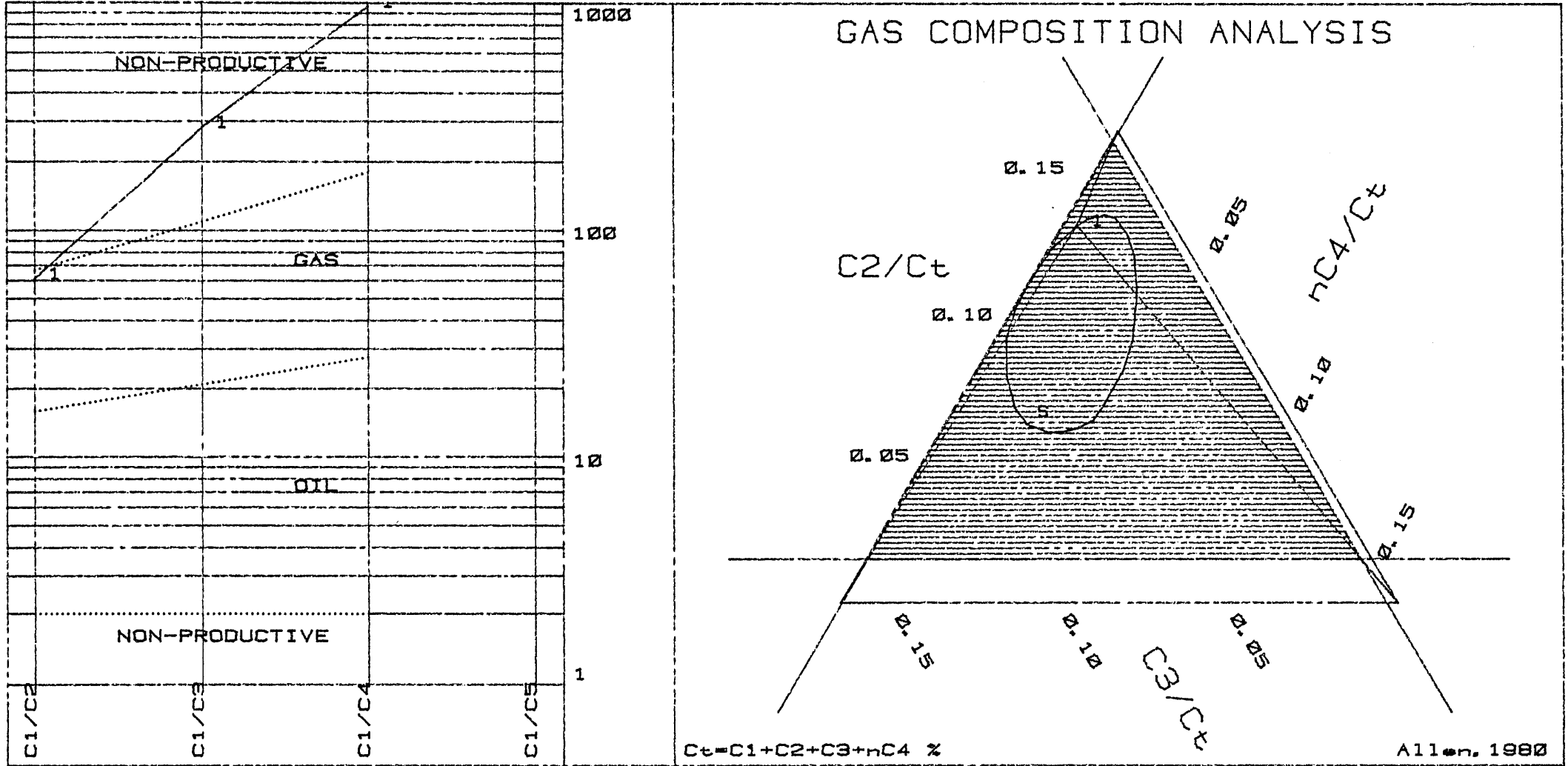


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2642	9466.000	250.000	64.000	15.500	15.500	17.000	24.000	9795.500	38	148	305	557

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO. 1

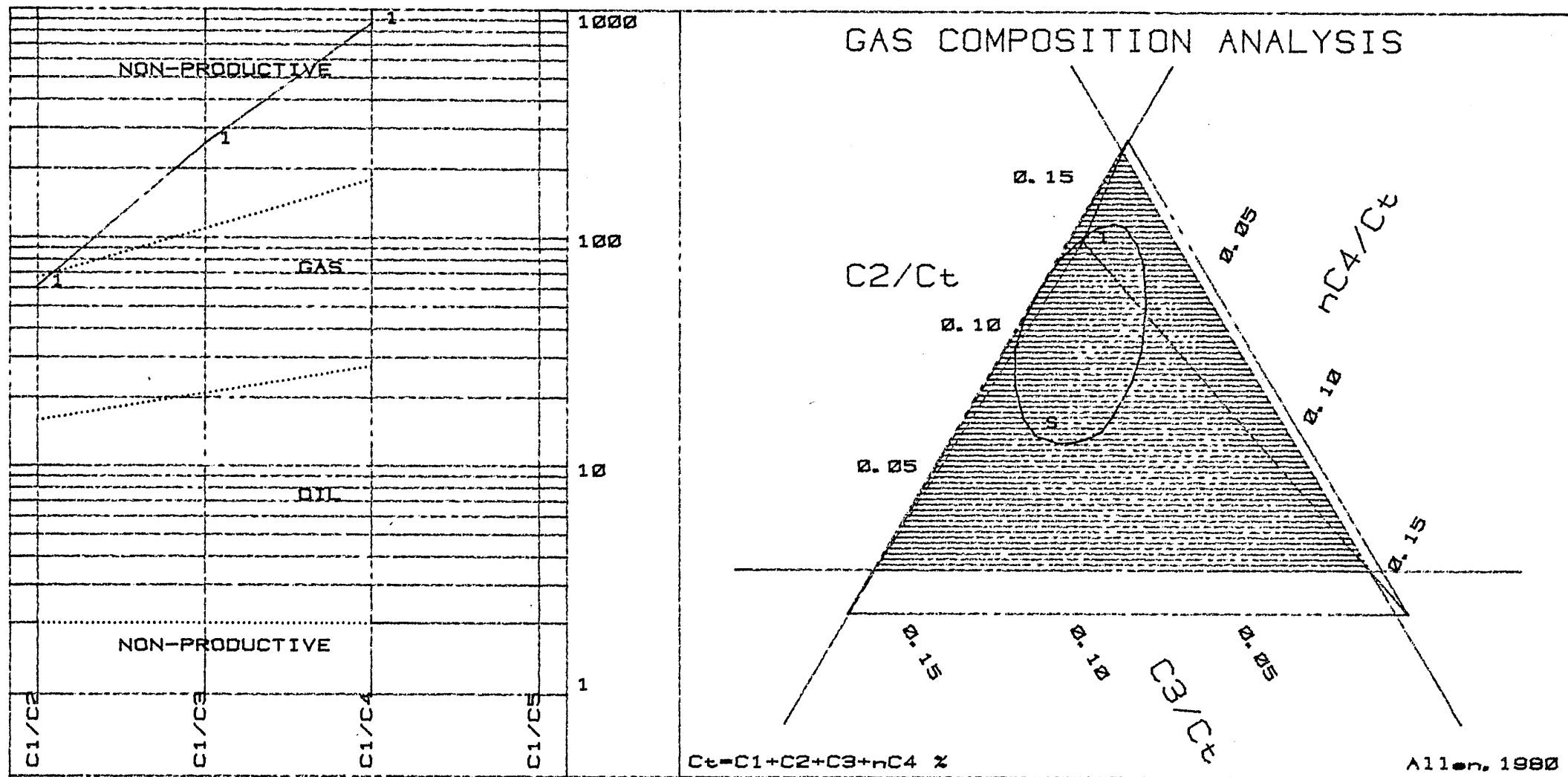


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2656	21158.000	346.000	75.000	11.000	11.000	0.000	0.000	21590.000	0.061	282	962	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO. 1

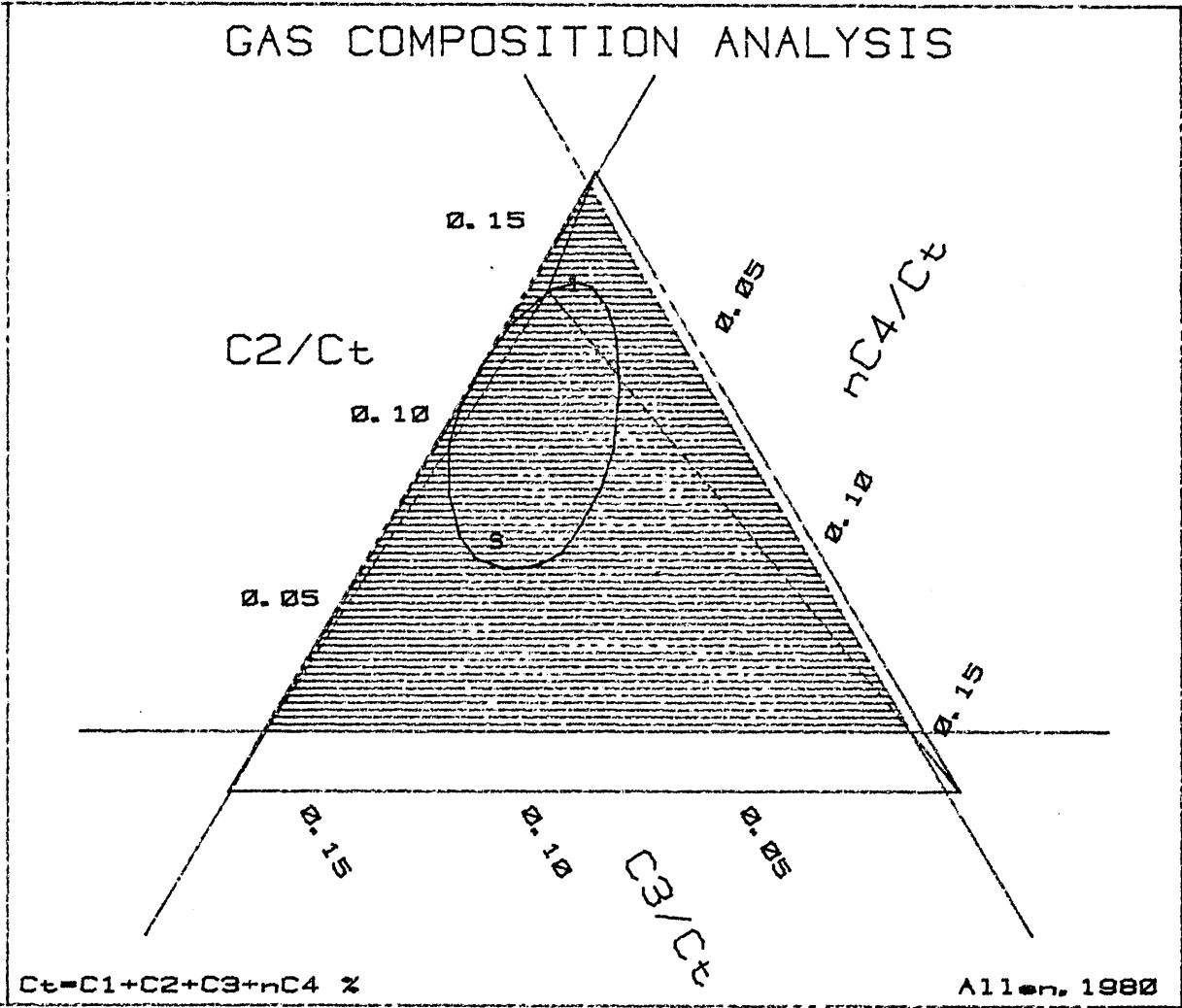
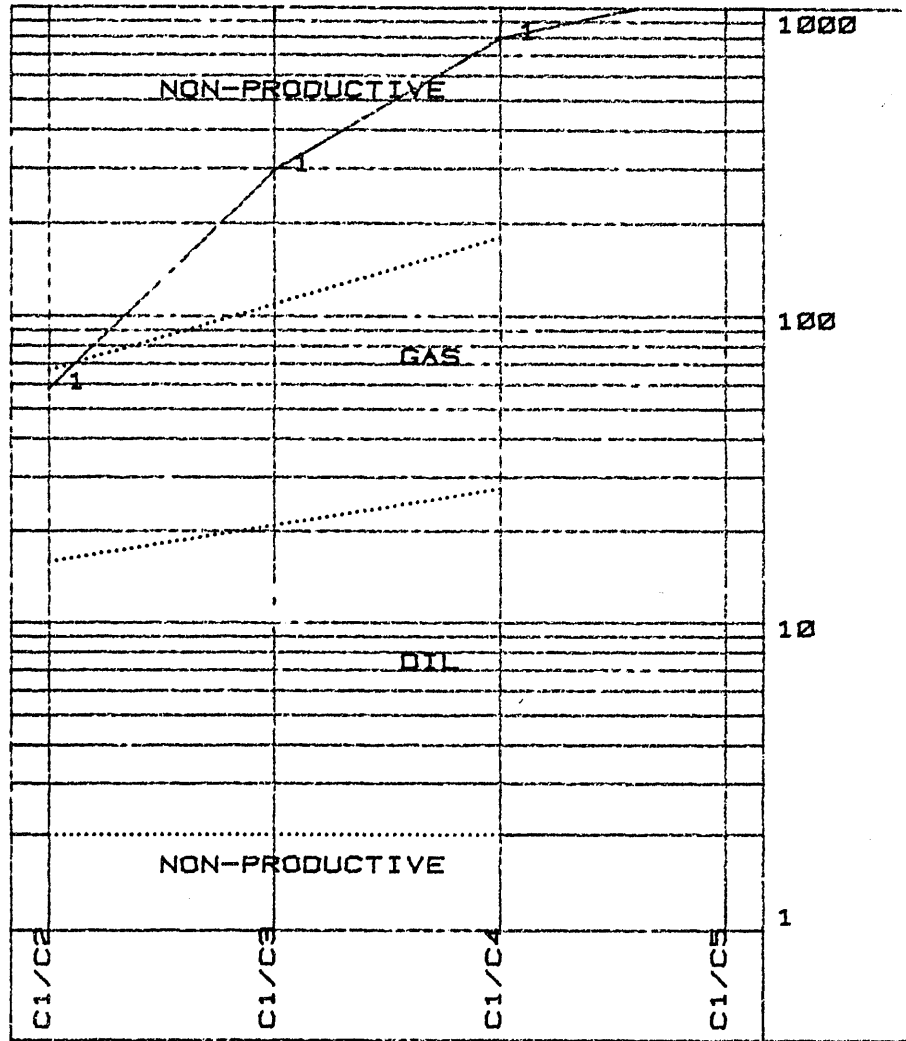


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2658	24500.000	400.000	95.000	14.000	14.000	0.000	0.000	25009.000	61	258	875	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO. 1

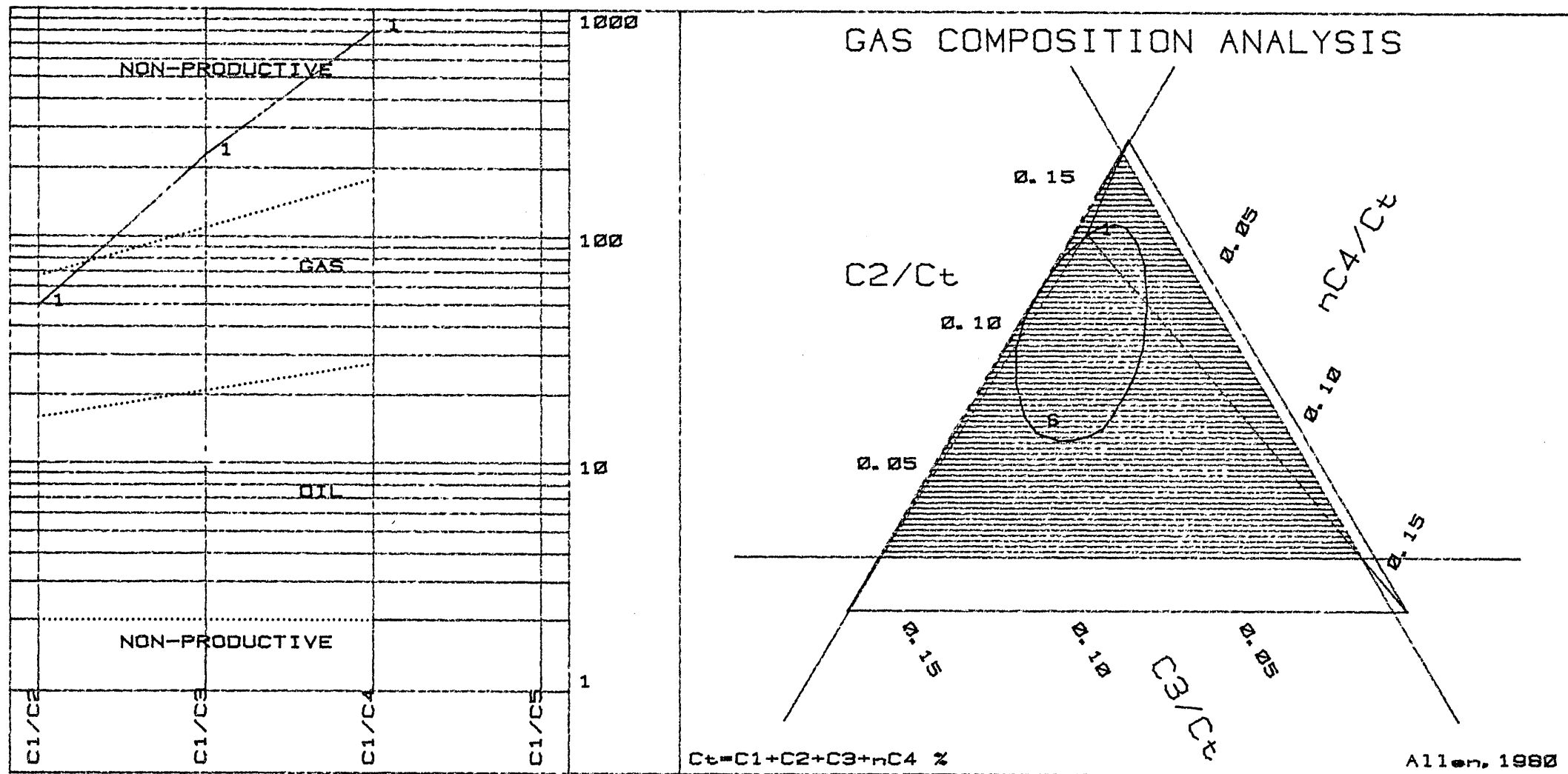


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2660	27840.000	477.000	94.000	17.500	17.500	24.000	0.000	28428.500	58	296	795	1160

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO. 1

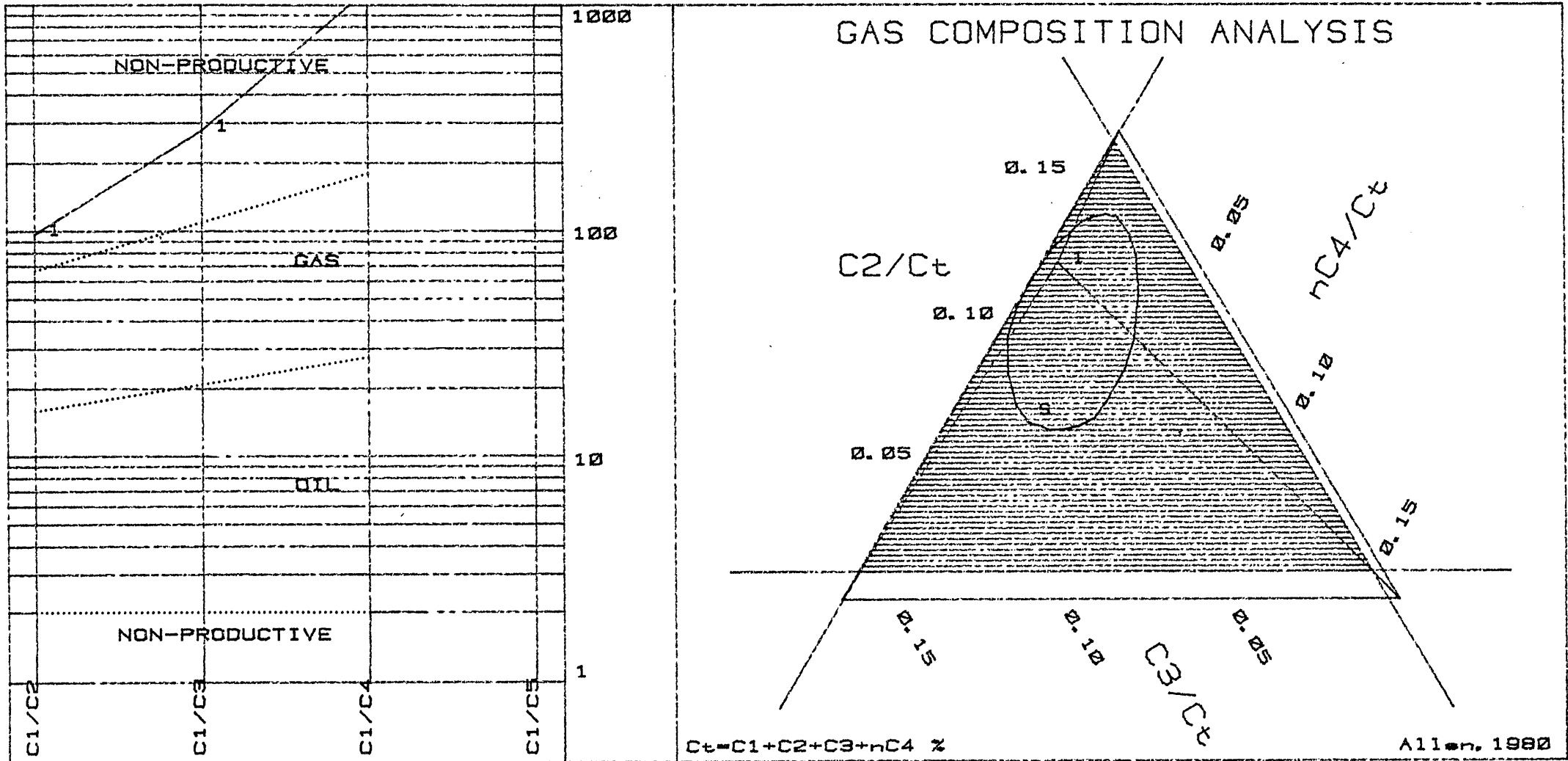


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2662	11414.000	231.000	50.000	7.000	7.000	0.000	0.000	11702.000	49	228	815	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO. 1

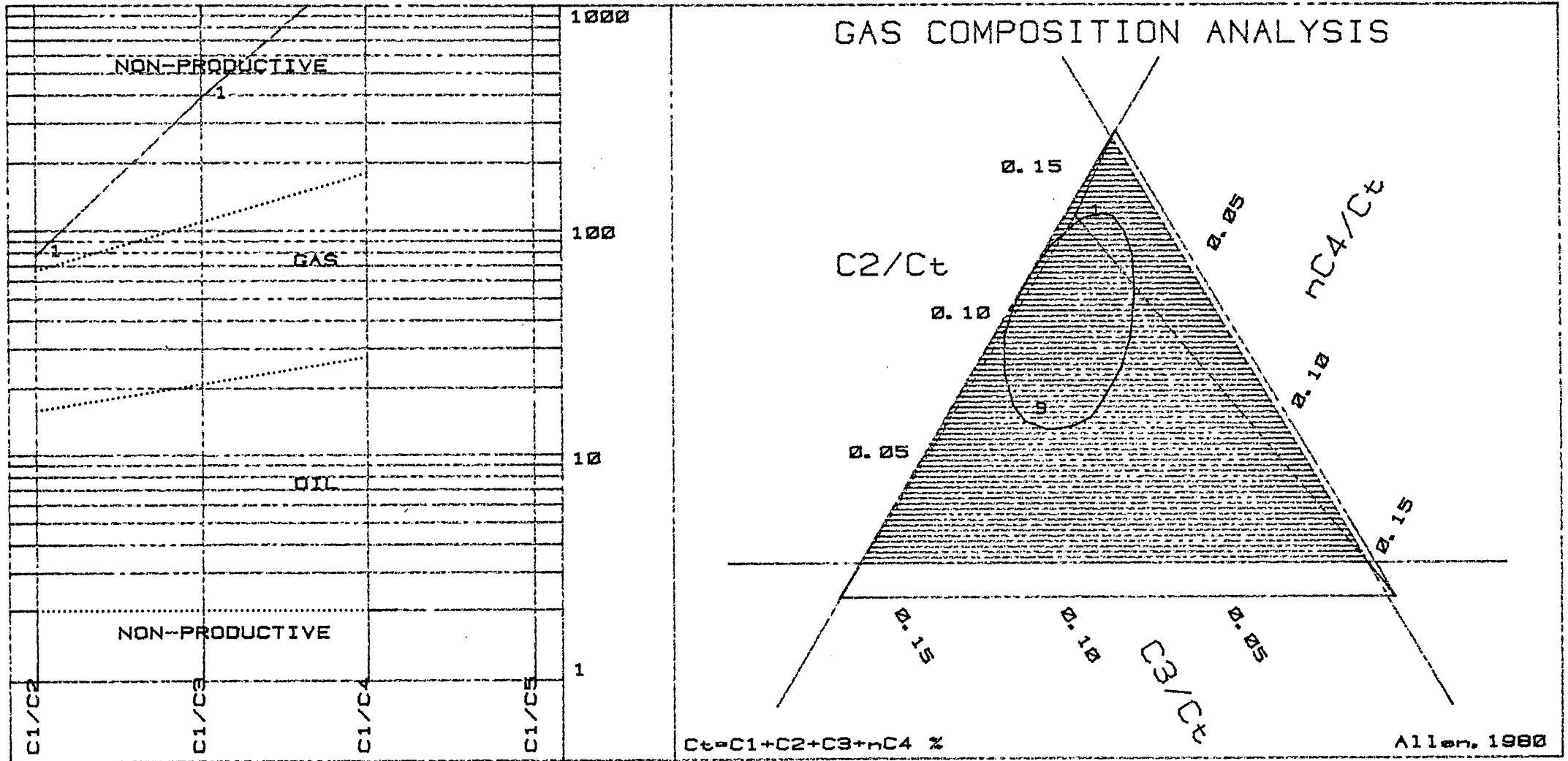


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2685	41700.00	431.00	150.00	18.00	18.00	0.00	0.00	42299.00	97	278	1158	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO.1

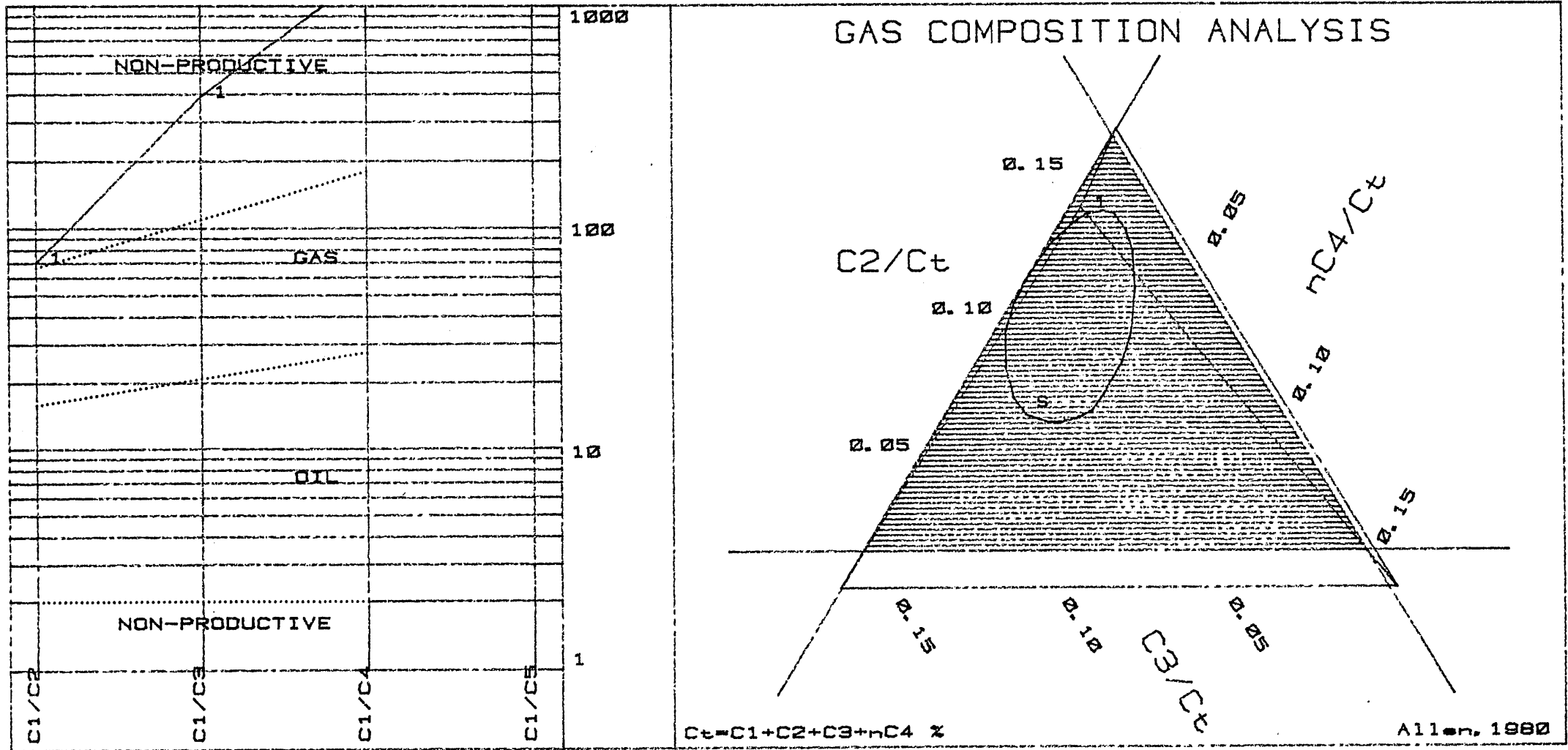


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2724	23385.000	300.000	80.000	7.000	7.000	0.000	0.000	23752.000	78	390	1670	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO.1

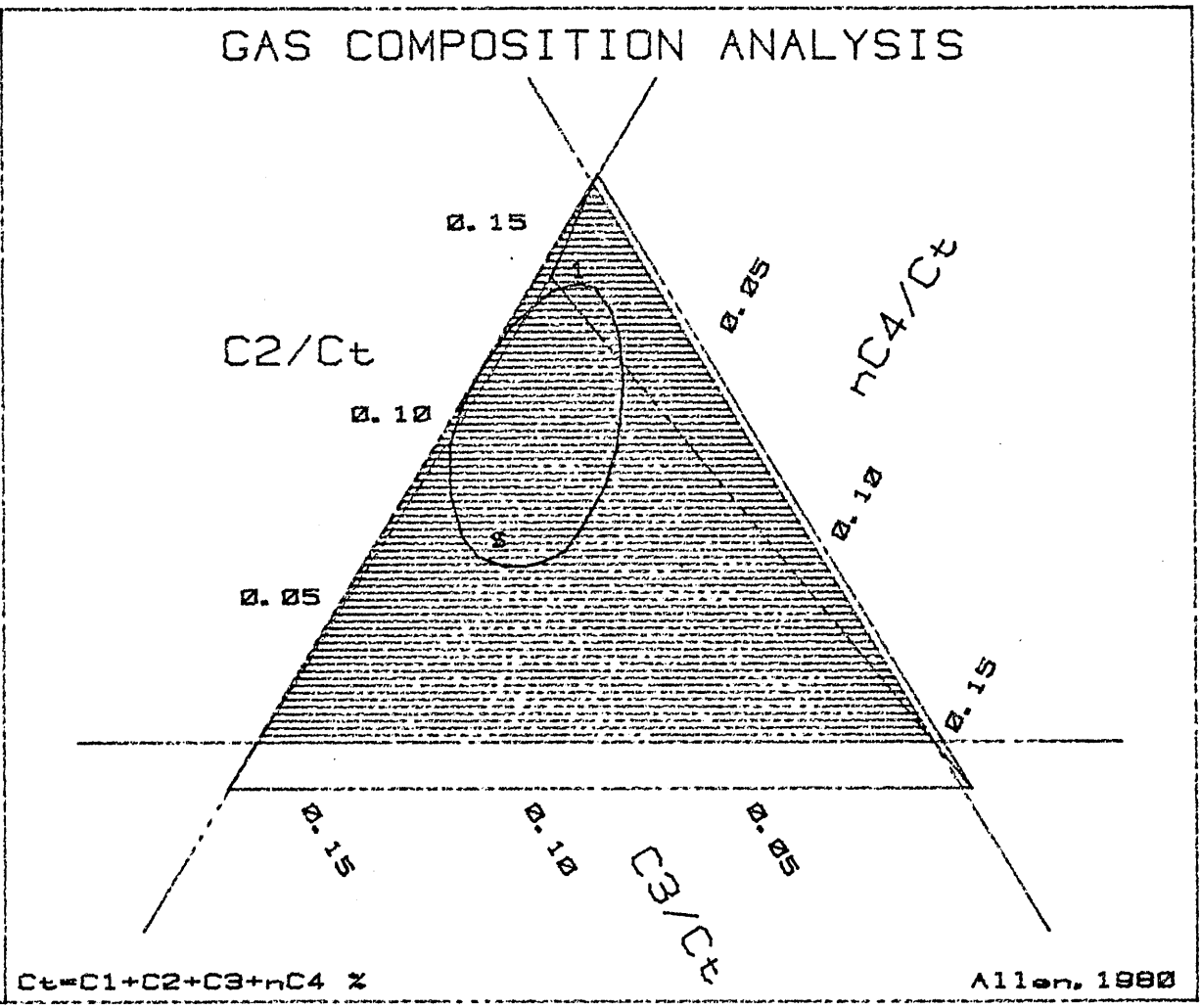
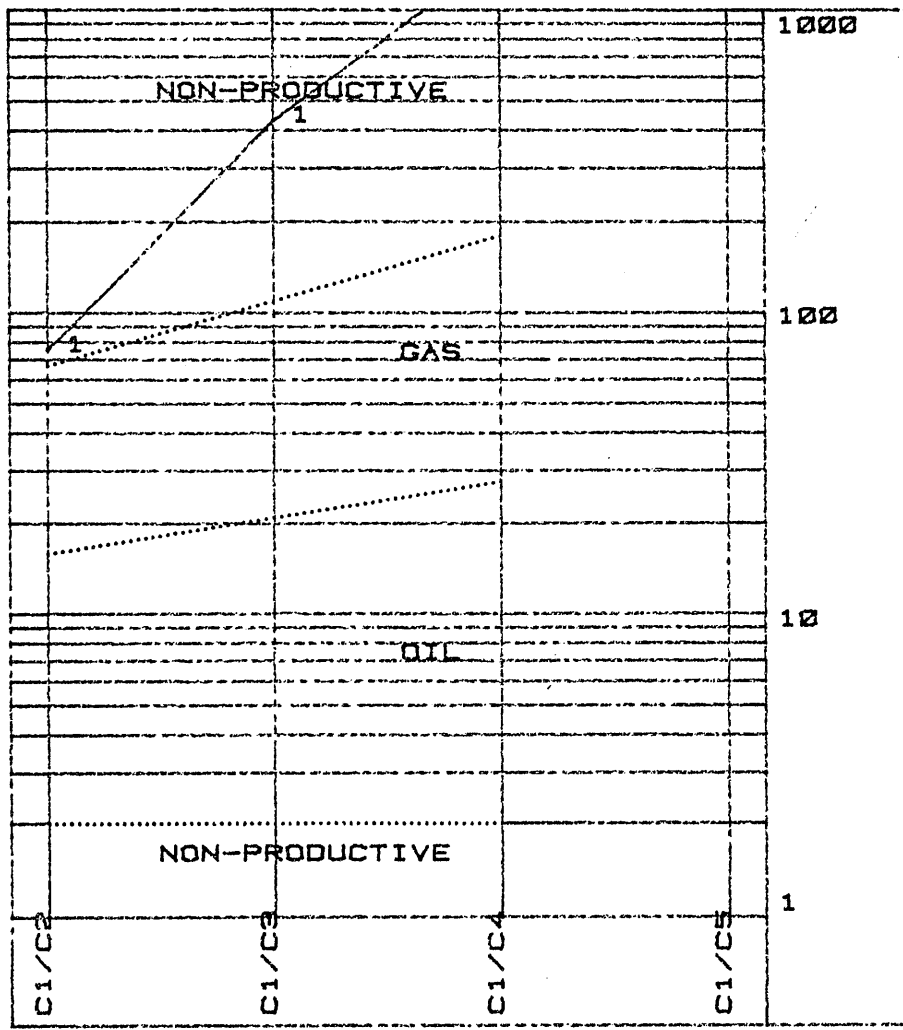


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2728	19488.000	277.000	50.000	7.000	7.000	0.000	0.000	19822.000	70	390	1392	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO. 1

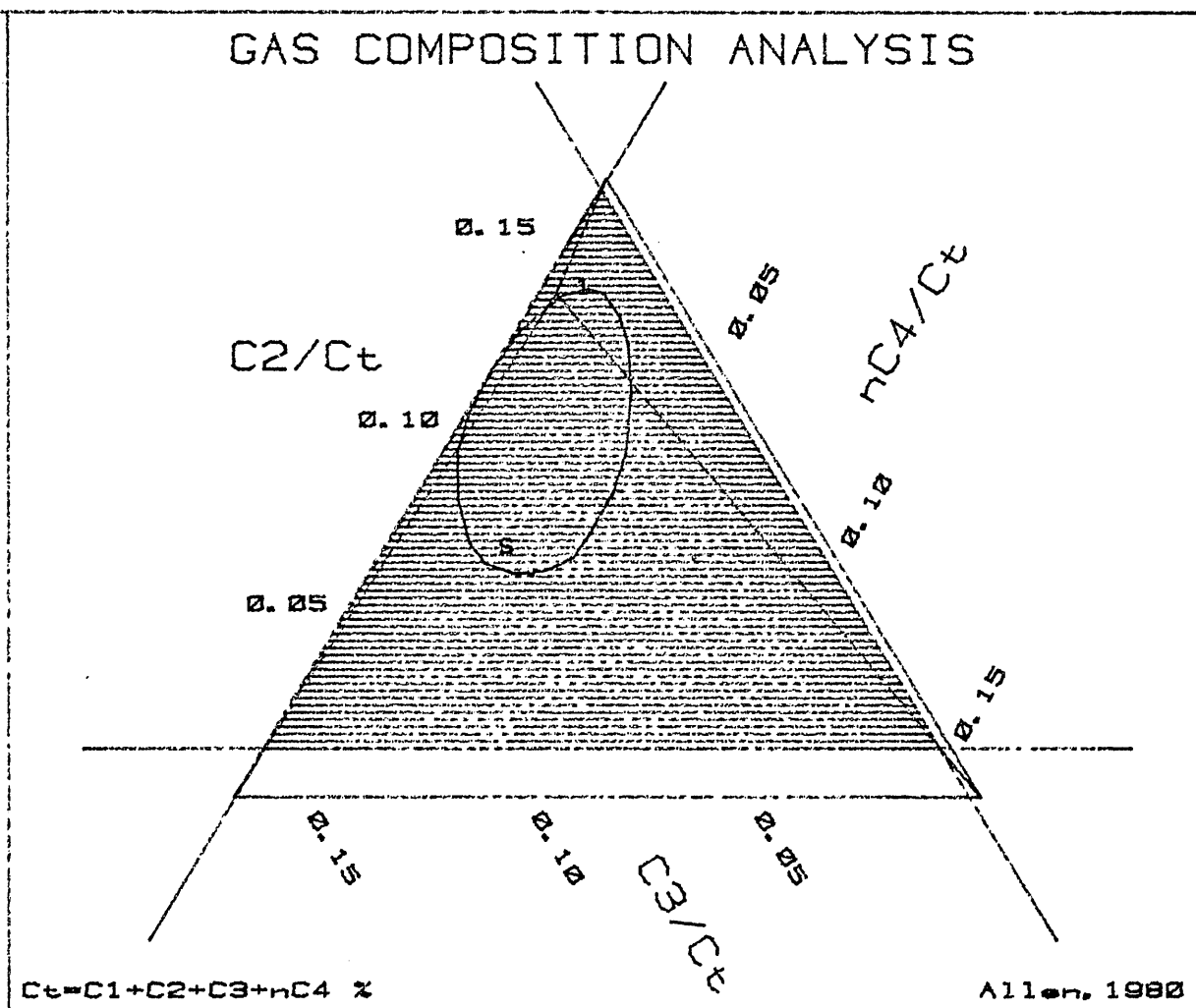
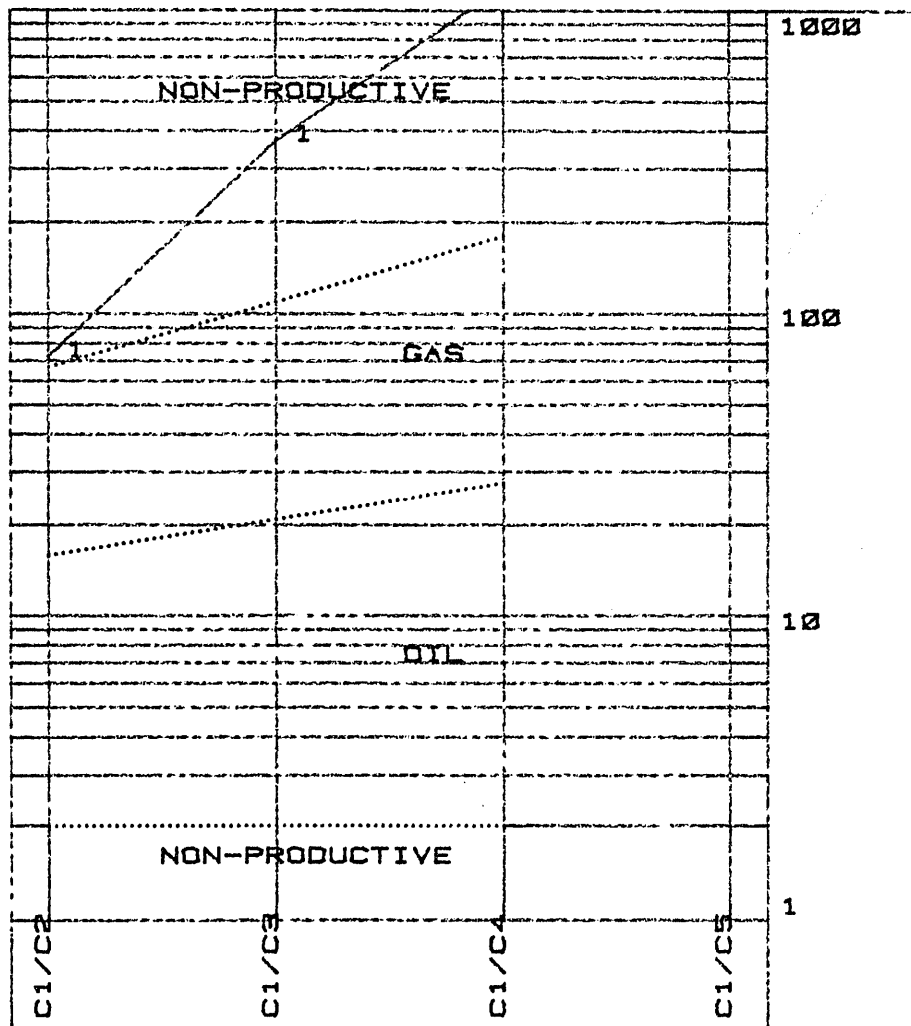


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2736	21437.000	285.000	50.000	7.000	7.000	0.000	0.000	21779.000	075	429	1531	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO.1

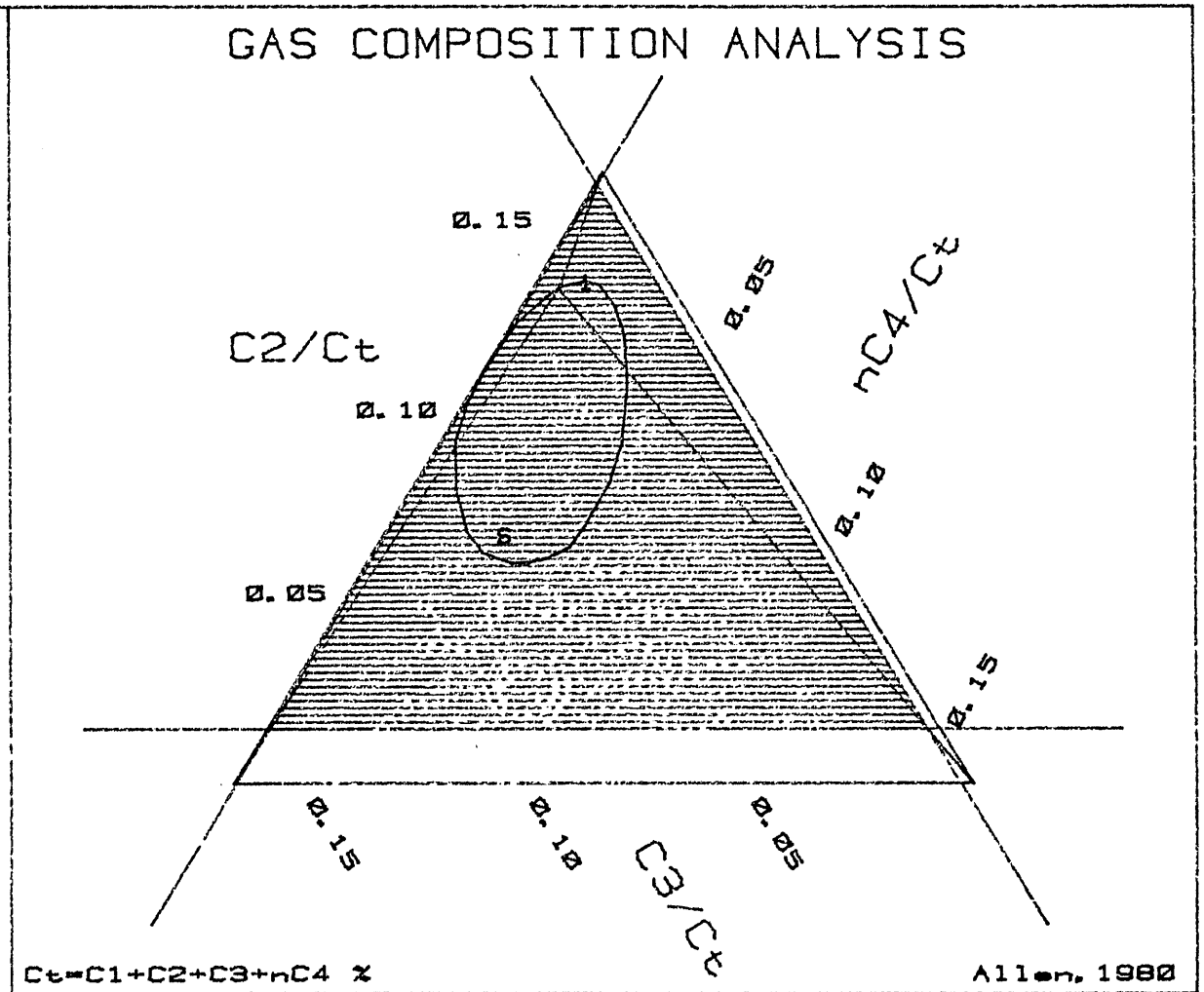
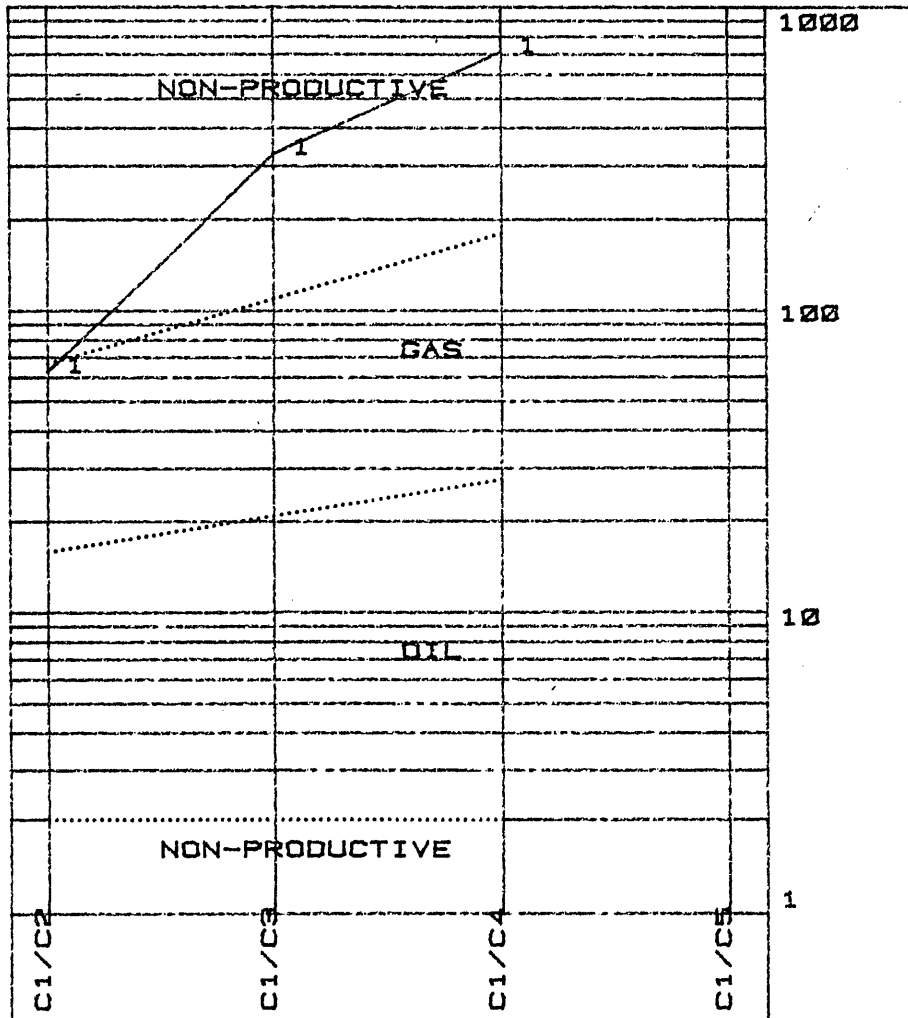


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2739	16704.000	231.000	45.000	7.000	7.000	0.000	0.000	16987.000	72	371	1193	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO.1

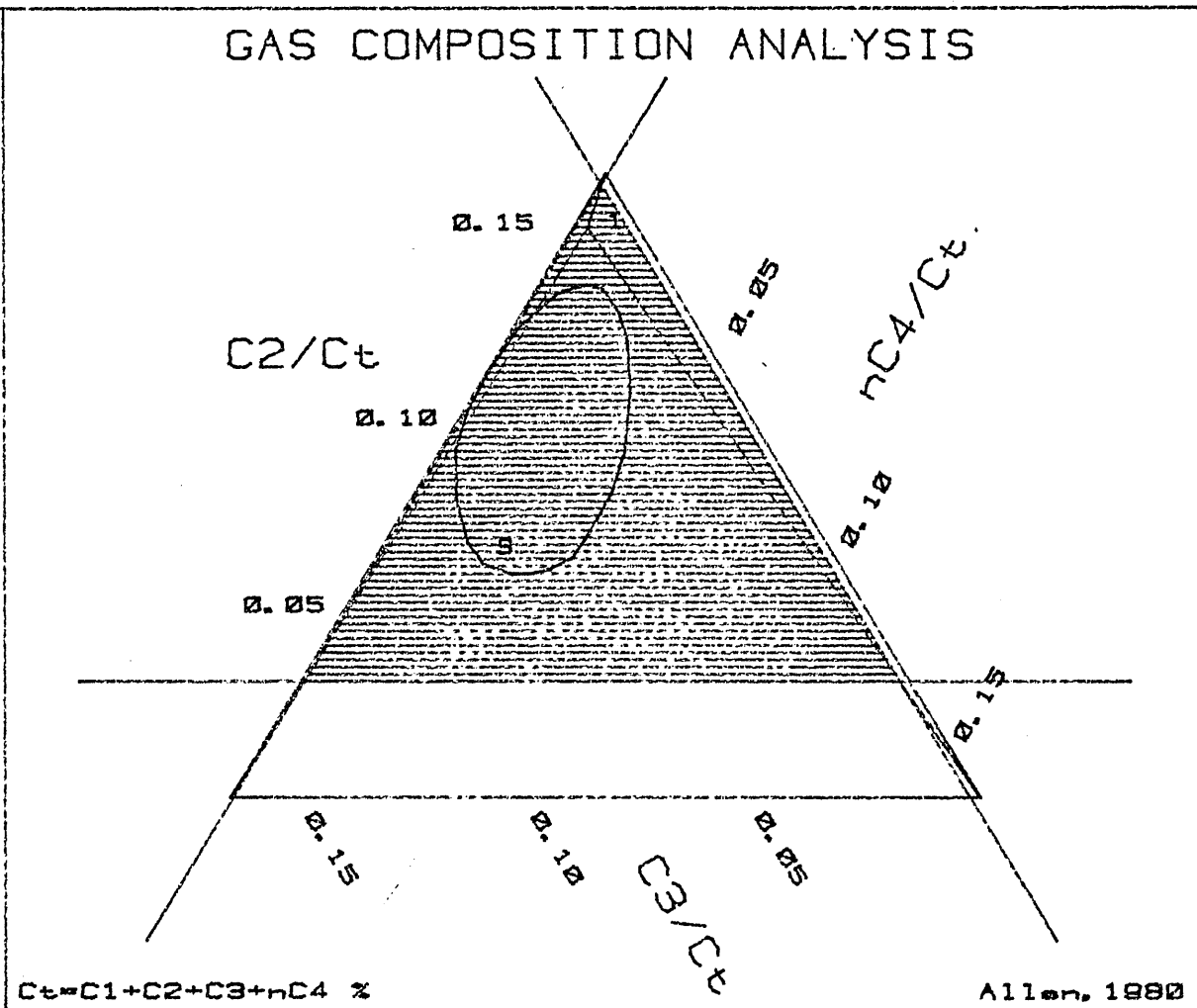
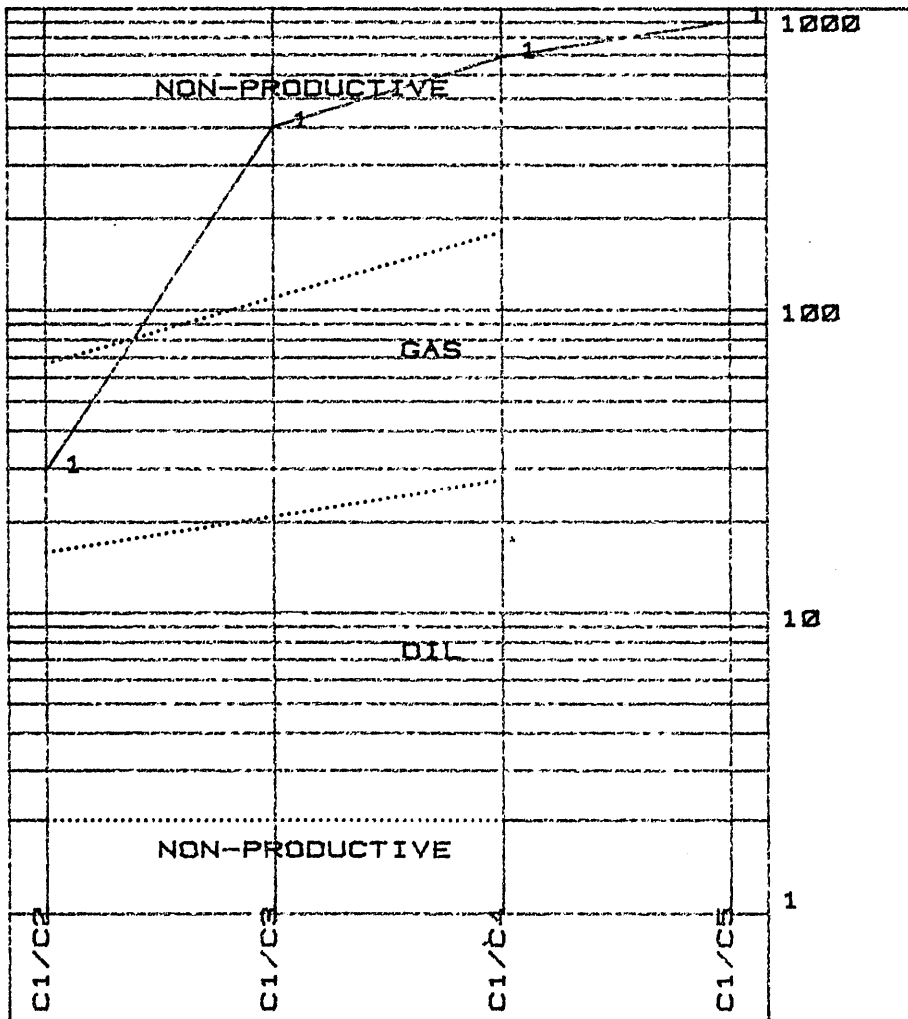


NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 x	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2764	16425.000	262.000	50.000	11.500	11.500	0.000	0.000	16748.500	50063	329	714	

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO.1

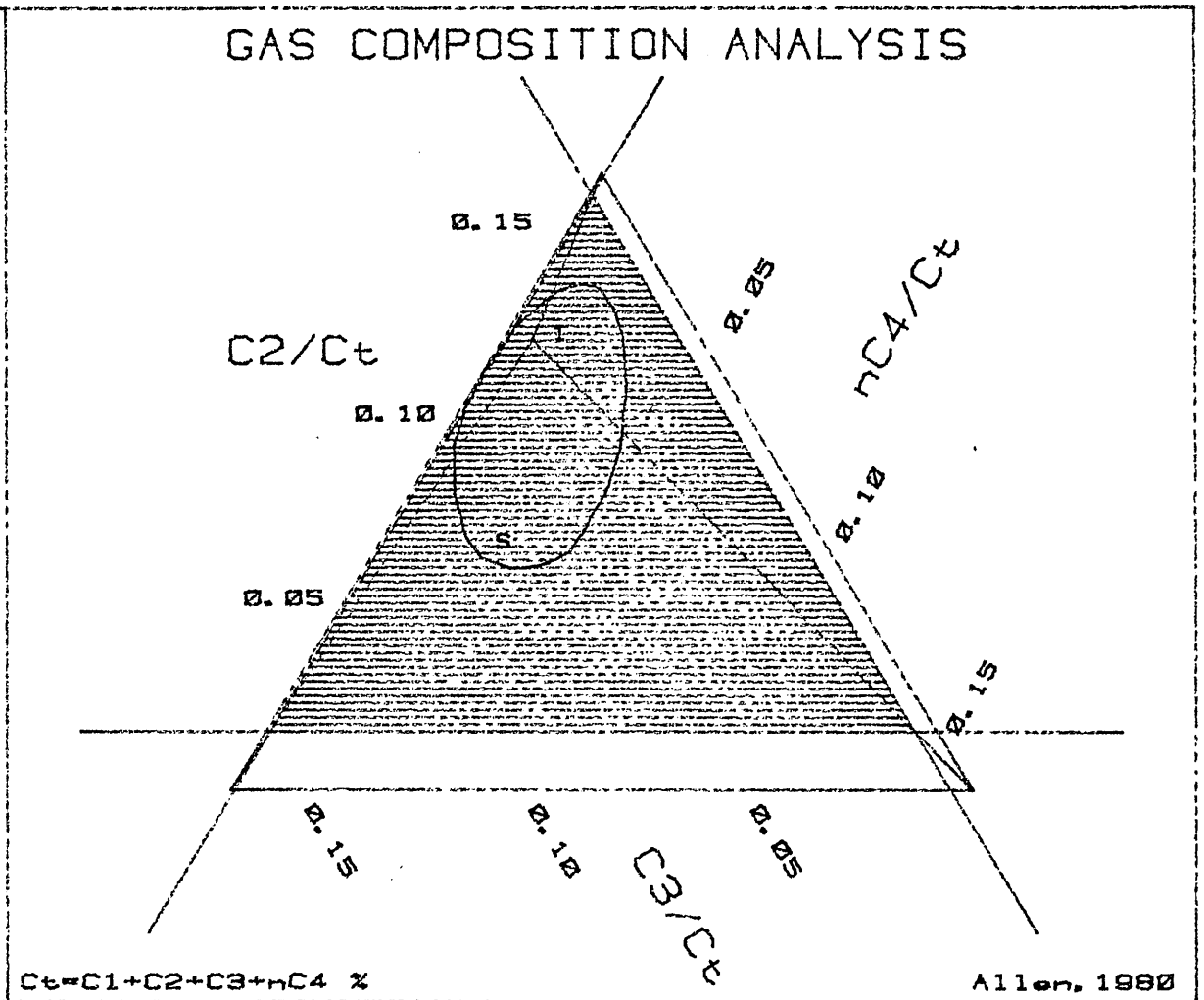
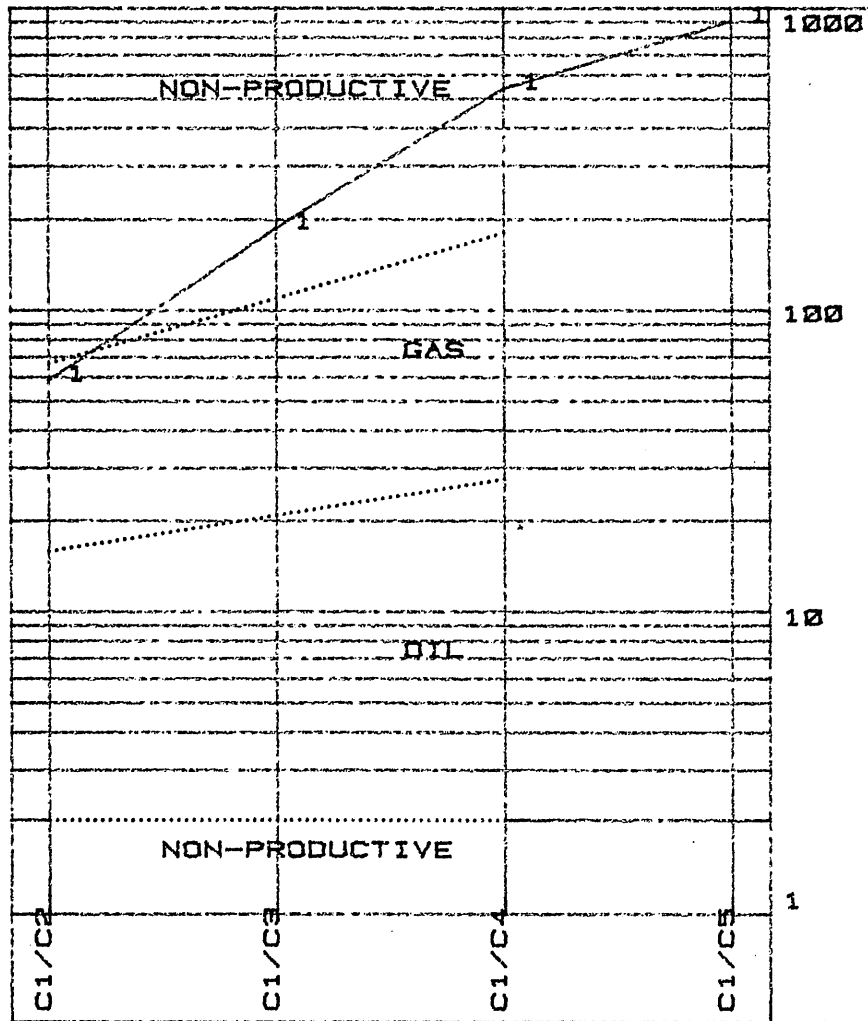


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2773	14476.000	493.000	36.000	10.500	10.500	16.000	23.000	15015.500	29	402	689	905

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO.1

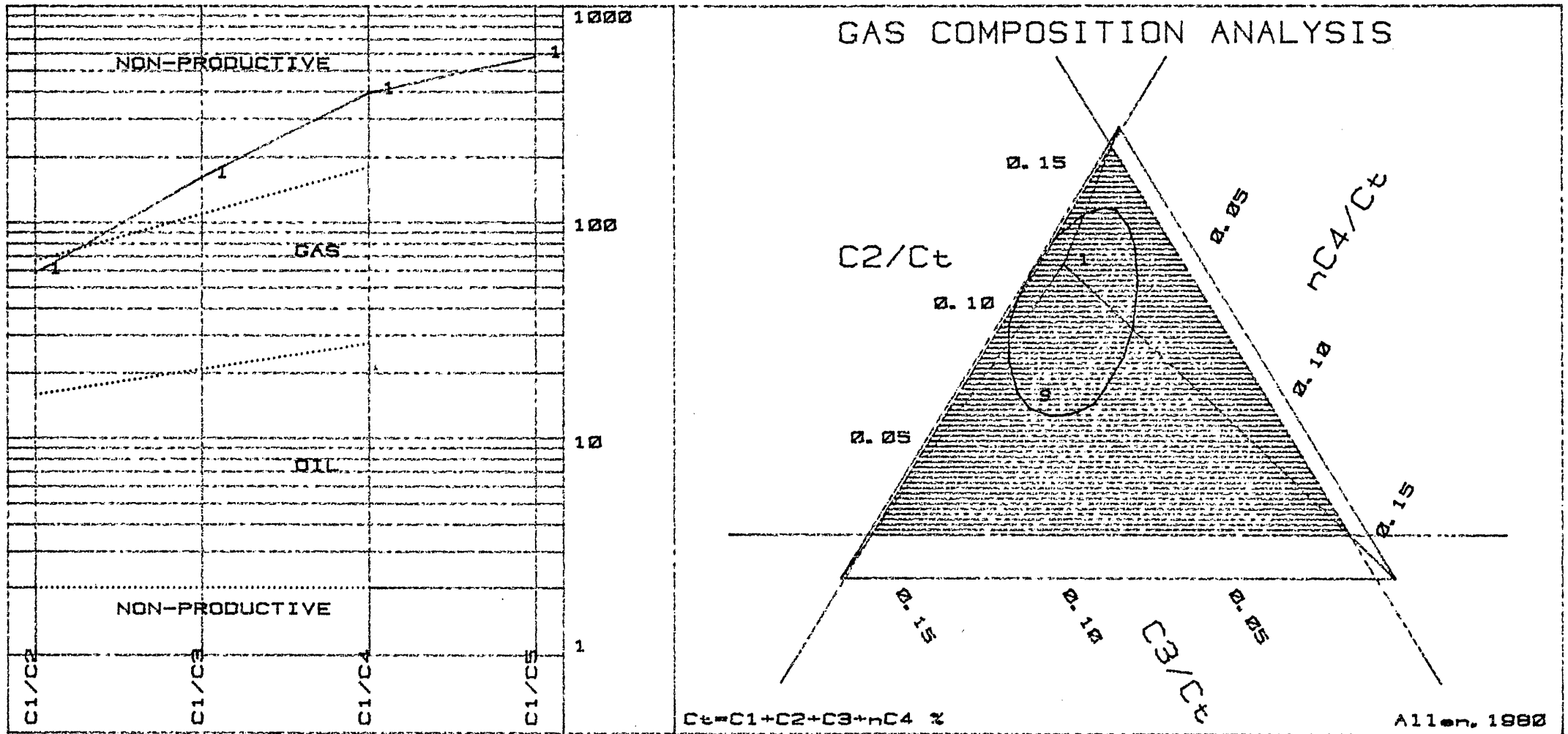


NO. DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1 2777	21715.000	370.000	116.000	20.000	20.000	24.000	33.000	22221.000	59	187	543	905

CORE LAB. INTL. LTD.

Client: ESSO AUSTRALIA LTD

Well: TARWHINE NO.1



NO.	DEPTH	C1	C2	C3	iC4	nC4	C5	C6 %	Ct	C1/C2	C1/C3	C1/C4	C1/C5
1	2788	19800.000	339.000	122.000	25.000	25.000	34.000	47.000	20286.000	0058	182	398	582

16. CORE - O - GRAPHS

CORE-O-GRAPH

CLIENT: ESSO AUSTRALIA LTD.

CORE NO: 1

WELL: TARWHINE No.1

INTERVAL CORED: 1392 - 1405 metres

CUT: 13 metres

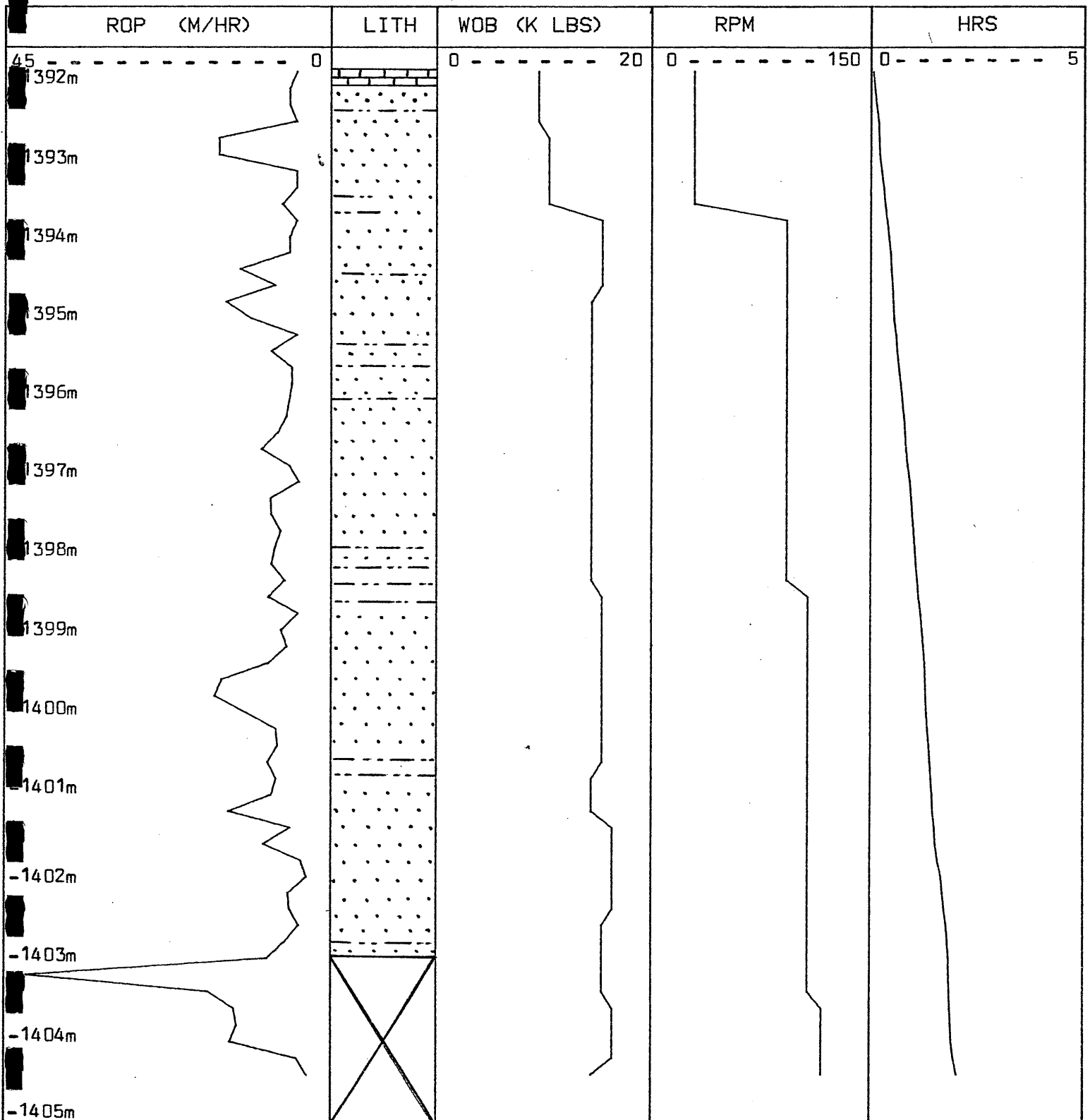
RECOVERED: 10.85 metres (83.5)

BIT MAKE AND TYPE: CHRISTENSEN C-22

BIT SIZE: 8 15/32"

FOUD WEIGHT: 10.4 ppg

FORMATION GROUP: LATROBE



CORE-O-GRAPH

CLIENT: ESSO AUSTRALIA LTD.

CORE NO: 2

WELL: TARWHINE No.1

INTERVAL CORED: 1405 - 1418 metres

CUT: 13 metres

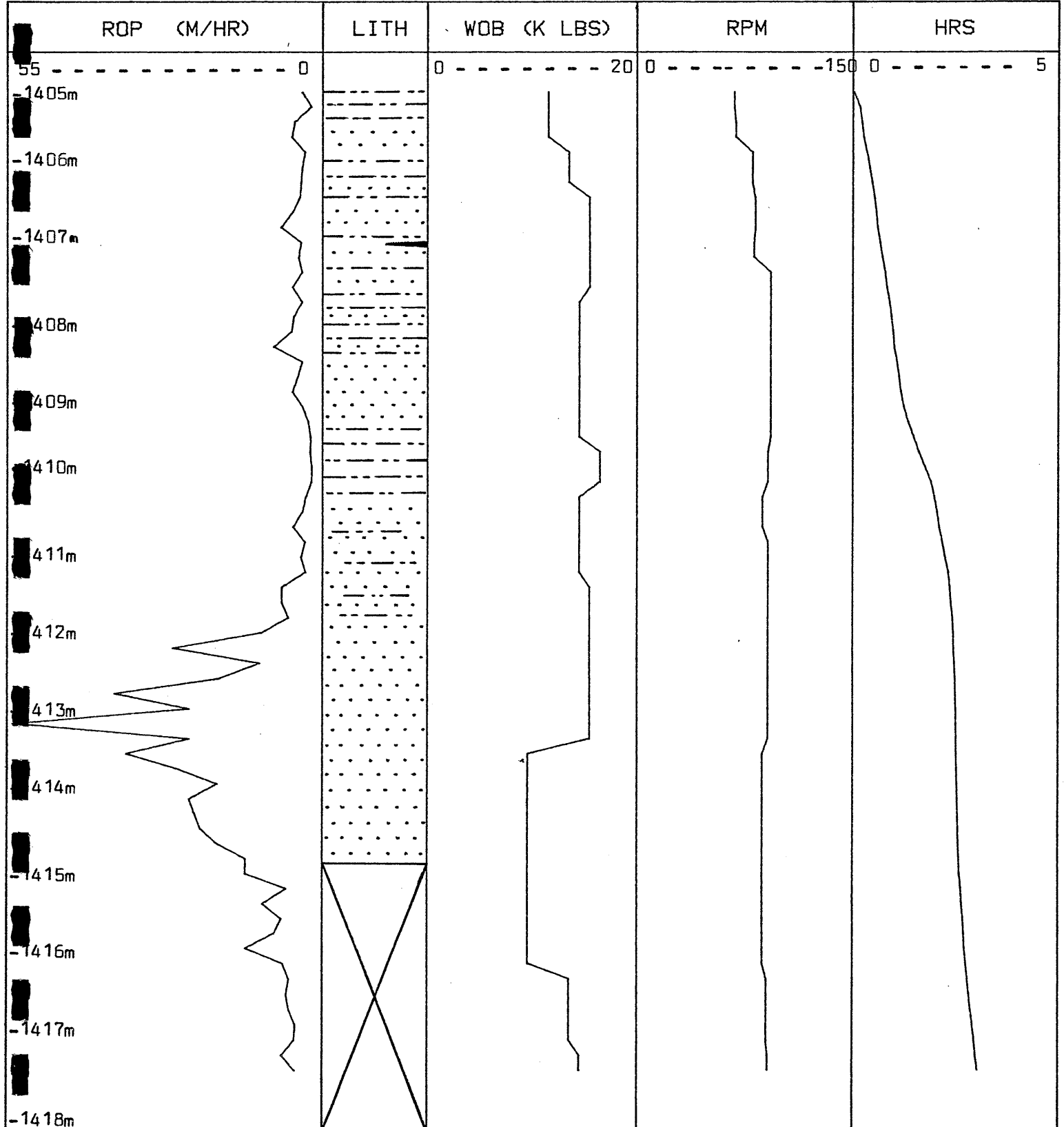
RECOVERED: 9.85 metres (76%)

BIT MAKE AND TYPE: CHRISTENSEN C-22

BIT SIZE: 8 15/32"

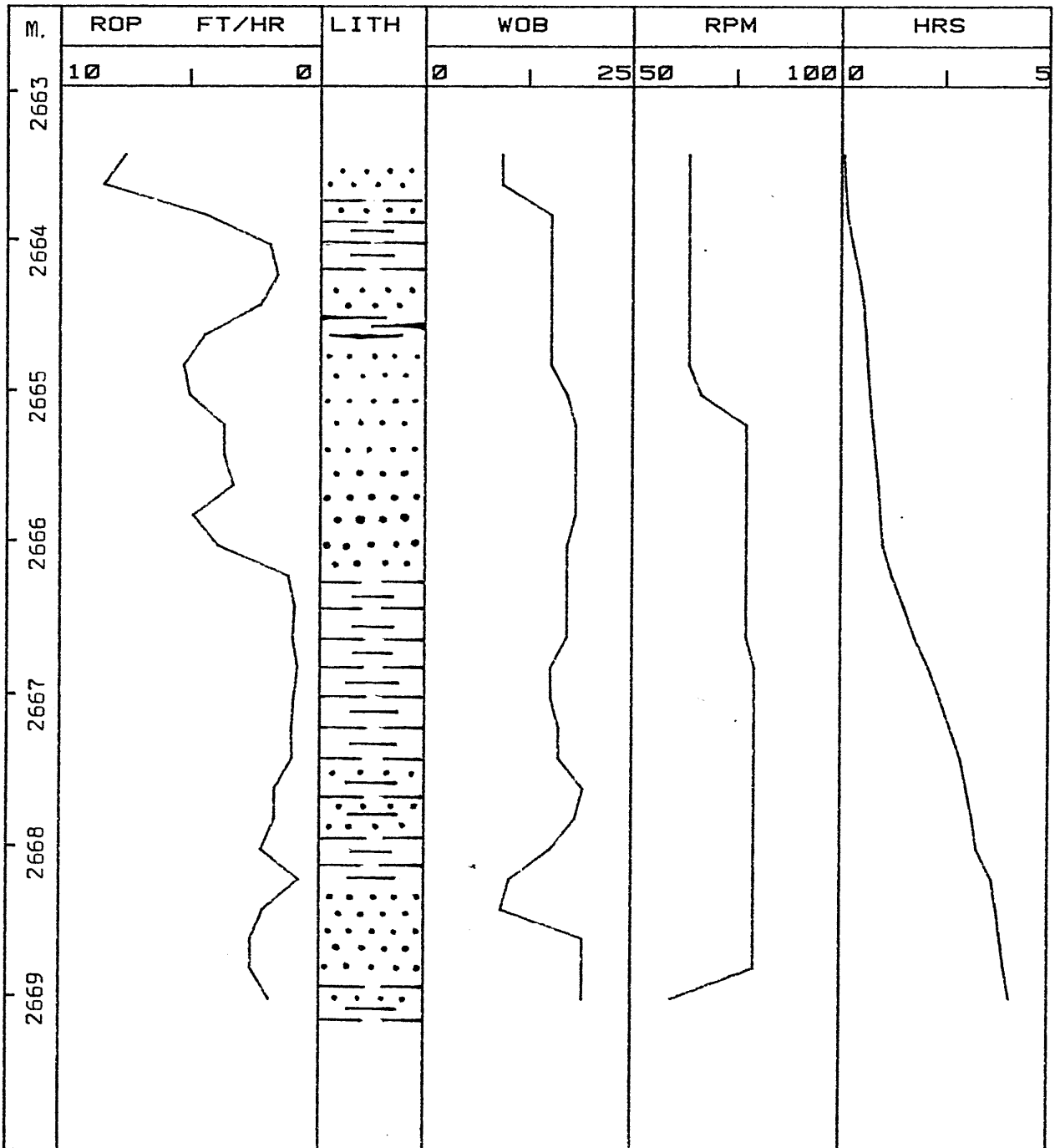
MUD WEIGHT: 10.1 ppg

FORMATION GROUP: LATROBE



CORE-O-GRAPH

CLIENT:	ESSO AUSTRALIA LTD
WELL:	TARWHINE NO. 1
CORE NO.:	3
INTERVAL CORED FROM	2663.3m. TO 2669.0m.
CUT: 6.0m	RECOVERED: 5.9m. (97.5%)
FORMATION:	INTER LATROBE
BIT MAKE & TYPE:	CHRISTENSEN C-20
CORE BARREL SIZE:	6.75in. x 4.00in. x 19.66m.
BIT SIZE: 8.47	MUD WT.: 10.0



18.10.1971

17. PORE PRESSURE SUMMARY AND L.O.T. / P.I.T. DATA.

PORE PRESSURE AND L.O.T. SUMMARY. Tarwhine No. 1.

Tarwhine No. 1 was drilled in the Gippsland basin region of the Bass Strait. It was correctly thought that this basin is normally pressured and abnormal pressure was therefore not expected. Core Laboratories unit FL 802 monitored and calculated various parameters associated with pressure detection, the primary means of detection being the "Drill Data Plot" (See plots at end of report).

The "Drill Data Plot" shows, amongst other information, the d'^c exponent trend. As can be seen from the plot a good trend does not develop until around 720 metres, in the calcareous section. There is a lateral shift in the trend at 880 metres, where the limestone loses its sandy and silty components. This normal trend is followed down to 965 metres where there is a reversal. The reversal extends down to a depth of 1280 metres, and is due to the lithology change from limestone to siltstone.

Between the depths 1280 and 1610 metres no significant trend can be established due to firstly, the thin interbedded sections of sandstones, siltstones and coals; and secondly, the profusion of bit changes in this interval. A good normal trend is established during bit run 9, between 1610 and 2000 metres, but that trend is shifted and steepened in bit run 10 (2000 - 2160 metres) owing to the cleaner nature of the sandstone in this latter section. An excellent normal trend then extends all the way to total depth at 2955 metres.

The only abnormality in the mud gas plot is the increase in background gas below 2350 metres from 1 unit to between 5 and 10 units. However, this results from the change in lithology rather than from any abnormality in formation pressure.

No shale density measurements were taken since only isolated thin beds of true shales were encountered.

As may be expected from the above discussions, the temperature plot does not show any deviations away from normal. The geothermal gradient was 1.52°C / 100m (2.74°F / 100m).

A "Wireline Plot" was not drawn as this log plots shale parameters and the few shale points encountered in the well were insufficient to facilitate an objective plot.

The "Pressure Plot" is the pressure conclusion log for the well. As can be seen it shows that the formations encountered in the drilling of Tarwhine No. 1 are believed to be normally pressured throughout. The quantitative data for this log is from the R.F.T. tests run in the sands between 1396 and 2926 metres. As can be seen from the R.F.T. data the sands had pressure gradients of between 1.444 and 1.499 psi/m, which are equivalent to pore pressures of 8.5 to 8.8 ppg (from M.S.L.). It is believed that a pore pressure of 8.6 ppg E.M.W. is representative of the pressure gradient for the formations above the Latrobe (as inferred from the R.F.T. data).

Overburden gradient calculations and a plot of the gradient are included in the report. It was not possible to derive a true fracture gradient as insufficient L.O.T.'s were taken. In fact only one P.I.T. was taken,

just below the 13 3/8" casing shoe. There was no need to carry out L.O.T.'s since high mud weights were not appreciated. The P.I.T. that was carried out gave a value of 13.5 p.p.g. E.M.W. (see Well History section). Based on this information the fracture gradient on the "Pressure Plot" was drawn. The shape of the curve is based on data from wells in the U.S. Gulf Coast basin, and offset to match local data. A true fracture gradient for the Gippsland Basin cannot be drawn until further leak-off data is available.

18. P.W.T. DATA.

COMPANY ESSO AUSTRALIA LTD.

WELL TARWHINE 1 PWT# 1 (INITIAL FLOW)

PERFORATIONS 2656-2667.5m (FM, RKB)

GAS ANALYSIS FROM LIBERATED GAS FROM LIQUID SAMPLES TAKEN WHILE DISPLACING FLUID
IN TUBING AFTER INITIAL FLOW

SAMPLE NO	SAMPLING POINT	C1	C2	C3	C4	C5	C6	CO2	H2S	TOTAL GAS
	AFTER x BBL DISPLACED	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	U
1										140
2		56722	1042	637	424	176	-			140
3	10									180
4		39421	994	539	343	106	-			112
5	20									100
6		15667	497	297	264	188	-			70
7										52
8		12321	379	299	196	100	-			58
9	30									36
10		6422	242	137	120	42	-			27
11										24
12		5242	199	100	91	36	-			21
13										26
14		7322	252	149	122	69	-			33
15										31
16										30
17		7222	250	140	119	63	-			30
18										30
19	40	7200	242	138	122	62	-			31
20										33
21										33
22		7324	257	148	131	62	-			34
23	50									40
24		10424	341	199	166	85	-			46
25										47
26		11000	360	222	174	79	-			49
27										47
28		10424	342	199	166	79	-			46
29	60									42
30		9376	322	178	154	72	-			41
31										40
32		9366	301	167	142	72	-			39
33	70									30
34		6422	242	137	120	42	-			26

CORE LAB.

PRODUCTION WELL TEST DATA SHEET

SHEET# 1

COMPANY ESSO AUSTRALIA LTD.

WELL TARWHINE 1 PWT# 1 (INITIAL FLOW)

PERFORATIONS 2656-2667.5m (FM, RKB)

NOTE : ALL SAMPLES TAKEN FROM CHOKE MANIFOLD WHEN REVERSE CIRCULATING AND DISPLACING THE FLUID IN THE TUBING.

RATHOLE FLUID: TYPE SEAWATER GEL RES. μ m 0.29 @ 25°C PH 11.6 CI (TITRAT) 16.0K PPM
NO3 50 PPM DENSITY 9.8ppgCUSHION FLUID: TYPE DIESEL RES. μ m > 10 @ 25°C PH -
CI (TITRAT) - PPM DENSITY 7.00 ppg (MEASURED BY REFRACT&HYD *M)

SAMPLE No	SAMPLING POINT AFTER x BBL DISP.	SHAKE OUT %			API & TEMP	FLU	SG	WATER RES & TEMP		CI	NO3	PH	COMMENTS
		OIL	H2O	SLDS				°C	°C				
1						NIL	1.056	0.37	24.5	13.0	45	12.3	
2						Y		0.26	"				
3	10					Y		0.40	"				
4						Y		0.35	"				
5	20					NIL		0.22	"				
6						NIL		0.30	"				
7						NIL		0.31	"	13.5	45	12.3	
8						Y		0.30	"				
9	30					Y	1.044	0.27	"				
10						Y		0.24	"				
11						Y		0.28	"				
12						Y		0.27	"				
13						Y		0.33	"				
14						Y		0.32	"	14.0	50	12.2	
15						Y		0.24	"				
16						Y	1.044	0.25	"				
17						Y		0.25	"				
18						Y		0.25	"				
19	40					Y		0.25	"				
20						Y	1.046	0.25	"	14.5	22	12.2	
21						Y		0.25	"				
22						Y		0.25	"				
23	50					Y		0.25	"				
24						Y		0.25	"				
25						Y		0.25	"				
NOTE : ALL SAMPLES DARK BROWN IN COLOUR.													
WHERE PRESENT ALL FLU IS YELLOW/GREEN													
FLU : Y - FLU PRESENT													
GAS WAS LIBERATED FROM ALL OF THE ABOVE SAMPLES FOR GAS ANALYSIS SEE													
GAS ANALYSIS SHEET													

CORE LAB

PRODUCTION WELL TEST DATA SHEET

SHEET # 1

COMPANY ESSO AUSTRALIA LTD.

WELL TARWHINE 1 PWT# 1 (FINAL FLOW)

PERFORATIONS 2656-2667.5m (FM, RKB)

TIME	SAMPLING POINT	C1	C2	C3	C4	C5	C6	CO2	H2S
HH:MM	CHOKER MANIFOLD	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM
09.57		940020	57122	2589	654	106	NIL	NIL	NIL
10.45		258509	65088	1190	106	NIL	-	-	-
11.00		148838	29463	781	32	-	-	-	-
11.02		235008	11571	4762	98	-	-	-	-
11.15		235008	11572	4762	158	-	-	-	-
11.30		227174	13017	5952	264	-	-	-	-
11.45		125337	15187	4464	1267	212	-	-	-
12.00		219341	15910	5357	1452	318	Tr	-	-
12.17		188006	28928	7142	1478	1096	Tr	-	-
12.30		594190	25312	6398	1214	1590	1260	-	-
12.45		783360	23142	4464	950	954	590	-	-
13.00		611020	56409	5654	1372	2120	1800	-	-
13.15		643202	34934	5454	1398	2200	1786	-	-
13.30		658022	33792	5952	1478	2332	2160	-	-
13.45			NO GAS	PRODUCED					
14.00			" "	" "					
14.15			" "	" "					
14.30		689356	26035	3273	1116	1802	1602	-	-
14.45		673689	17357	4166	950	1272	900	0.50	-
15.00		785024	27482	4762	1069	1802	1170	0.60	-
15.15		673890	23142	3720	818	1060	774	0.71	-
15.30		712857	30374	5059	1003	1961	1440	1.00	-
15.45		689357	31820	5952	1082	2438	1980	1.10	-
16.00		689357	30374	5803	1003	2491	2160	1.00	-
16.15		720691	31821	6249	950	2226	1620	1.00	-
16.30		720691	27481	4464	739	1007	540	1.9	-
16.45		712857	27481	4761	739	1272	632	1.9	-
17.00		705024	28928	5208	897	1590	1080	1.2	-
17.15			NO GAS	PRODUCED					
17.30			" "	" "					
18.00			" "	" "					
18.30			" "	" "					
19.00			" "	" "					
19.30			" "	" "					

NOTE: FROM 14.30 SAMPLE EIGHT GAS PEAKS WERE PRODUCED ON THE CHROMATOGRAPH.

CORE LAB.

PRODUCTION WELL TEST DATA SHEET

SHEET # 1

COMPANY ESSO AUSTRALIA LTD.WELL TARWHINE No. 1 PWT# 1 FFPERFORATIONS 2656 - 2667.5m (FM, RKB)

NOTE : ALL SAMPLES (EXCEPT No 1) TAKEN FROM CHOKE MANIFOLD WHEN REVERSE CIRCULATING AND DISPLACING THE FLUID IN THE TUBING.

RATHOLE FLUID: TYPE SEAWATER GEL RES. 0.29 • 25 C PH 11.6 CI (TITRAT) 16.0 K PPM
NO3 50 PPM DENSITY 9.8 ppgCUSHION FLUID: TYPE DIESEL OIL RES. 10 • 25 C PH -
CI (TITRAT) - PPM DENSITY 7.00 (MEASURED)

TIME HH:MM	SAMPLING POINT BBL DISP.	SAMPLE NO.	SHAKE OUT %			GAS --	FLU %	SG	WATER RES & TEMP		CI PPMK	NO3 PPM	PH	COMMENTS
			OIL	H2O	SLDS				—	•U				
12:36	0	1			1.0	120	Y	1.01	0.33				TAKEN WHILE BLEEDING OFF PRESSURE	
12:38	4	2				125	Y	1.01	0.31	15.5	33	69		
12:38	8	3				90	Y	1.02	0.31					
12:39	13	4			2.5	92	Y	1.02	0.30				SAMPLES No. 1 TO 5 HAD A 5mm OIL FOAM	
12:41	16	5				92	Y	1.01	0.30					
12:43	19	6				90	Y	1.01	0.30					
12:45	21	7			2.5	95	Y	1.01	0.30	14.5	28	6.8		
12:47	25	8				100	Y	1.01	0.28					
12:49	28	9				61	Y	1.01	0.30				SAMPLES No. 6 TO 18 HAD A PATCHY OIL FOAM.	
12:51	32	10			2.5	55	Y	1.01	0.29					
12:53	35	11				46	Y	1.01	0.27					
12:55	38	12			3.0	46	Y	1.01	0.27	14.0	33	6.9		
12:57	41	13				41	Y	1.01	0.27					
12:59	44	14			3.0	52	Y	1.01	0.27					
13:01	47	15				63	Y	1.01	0.28					
13:03	50	16			4.0	60	Y	1.01	0.26	13.0	44	6.8		
13:05	54	17				59	Y	1.01	0.26					
13:07	57	18			4.0	63	Y	1.02	0.26					
13:09	60	19			32	66	NIL	1.17	0.42	15.5	16	11.8	BOTTOM HOLE MUD	
NOTE : (1) CHOKE PLUGGED AT 13:09 DUE TO HIGH SAND CONTENT														
(2) ALL SAMPLES EXCEPT No 19 HAD A CREAM/LT BRN OIL FOAM ON THE SURFACE. THIS GAVE A BRIGHT WHITE/YELLOW FLUORESCENCE														
(3) THE OIL FOAM DID NOT SETTLE OUT IN THE OTIS TANKS.														
(4) HALLIBURTON ESTIMATED 72 BBL PUMPED, OTIS RECOVERED 60 BBL C.L. USED 60 BBL FOR CALCULATIONS.														
(5) ALL CHLORIDES, NITRATES AND pH MEASUREMENTS WERE PERFORMED BY MAGCOBAR ENGINEER.														
(6) OIL FOAM WOULD NOT SEPARATE OUT WHEN CENTRIFUGED.														

CORE LAB.

PRODUCTION WELL TEST DATA SHEET

SHEET # 1

COMPANY ESSO AUSTRALIA Ltd.

WELL TARWHINE No 1 PWT# 2PERFORATIONS 1398-1400.5m (FM, RKB)

NOTE: ALL SAMPLES TAKEN FROM THE CHOKE MANIFOLD

RATHOLE FLUID: TYPE SEAWATER GEL RES. 0.29 25C PH 11.6 CI (TITRAT) 15.4k PPM
NO3 50 PPM DENSITY 9.8ppgCUSHION FLUID: TYPE DIESEL RES. 10 25C PH -
CI (TITRAT) - PPM DENSITY 7.0ppg

TIME HH:MM	SAMPLING POINT	SHAKE OUT %			API & TEMP		COLOUR OIL	POUR POINT	WATER RES & TEMP		CI	NO3	PH	COMMENTS
		OIL	H2O	SLOS	→	°C			°C	°F				
	INITIAL FLOW													
1	09:30	0	0	0	0	-	-							
2	09:45	0	-	-	-	-	-							
3	10:00	85	0	15	60.6	15.2	light brown	3						
4	10:15	94	0	6	60	13	"	2						
5	10:30	99	0	1	58.7	24	"	3						
	CLOSE IN													
	FINAL FLOW													
6	12:30	-	-	-	50.1	15	org/bn	1.5						
7	12:45	96.5	0	3.5	59.9	15	"	1						
8	13:00	93.5	0	4.5	58.2	15	"	0						
9	13:15	94	0	6	58.7	15	ORANGE	0						
10	13:30	97	0	3	59.5	16	"	0						
11	14:00	98.3	0	1.7	57	15	"	0						
12	14:30	-	-	-	51.7	17	"	0						
13	15:00	98.4	0	1.6	50.9	16	"	<0						
14	15:30	99.3	0	0.7	50.6	18	"	<0						
15	16:00	99.2	0	0.8	52.3	16	"	<0						
16	16:30	99.6	0	0.4	52.1	15	"	<0						
17	17:00	99.6	0	0.4	53.1	16	"	<0						
18	17:30	99.5	0	0.5	52.2	14	"	<0						
19	18:00	99.5	0	0.5	52.3	13	"	<0						
20	18:30	99.5	0	0.5	52.5	15	"	<0						
21	19:00	99.5	0	0.5	51.3	13	"	<0	0.30	74	12,000	154.6		B WATER FROM S SEPARATOR
22	19:30	99.5	0	0.5	51.8	14	"	<0						FLU - WHITE
23	20:00	99.5	0	0.5	51.7	14	"	<0						

GAS SAMPLES WERE OBTAINED EITHER FROM THE SEPARATOR OR BY LIBERATION OF THE
FLUID SAMPLES - FOR GAS ANALYSIS, SEE GAS ANALYSIS SHEET.

PRODUCTION WELL TEST DATA SHEET

SHEET # 1

COMPANY ESSO AUSTRALIA Ltd

WELL TARWHINE No 1 PWT # 2

PERFORATIONS 1398-1400.5m (FM, RKB)

GAS COMPOSITION

SAMPLE No.	TIME HH:MM	C1	C2	C3	C4	C5	C6	CO2	H2S	COMMENTS
		PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	
INITIAL FLOW										
1	09:30	4896	1808	0	0	0	0	0	0	C7 & C8 ARE INDICATED IN MOST SAMPLES
2	09:45	1566	5785	8332	3379	7096	115326	0	0	
3	10:00	1958	1446	19050	6758	50880	195800	0	0	
4	10:15	7834	1446	26189	10138	61056	230400	0	0	
5	10:30	3917	1446	20250	10138	40704	138240	0	0	
CLOSED IN										
FINAL FLOW										
6	12:30	5875	1446	28570	37171	84800	172800	0	0	SAMPLE FROM SEPARATOR
7	12:45	2938	723	12400	15206	35616	34560	0	0	
8	13:00	2938	tr	11309	15206	32224	66240	0	0	
9	13:15	2938	tr	8928	11827	30528	40320	0	0	
10	13:30	9792	723	14285	16896	42400	57600	0	0	
11	14:00	979	tr	6547	8448	23744	23040	0	0	
12	14:30	3916	723	13094	16051	39008	40320	0	0	
13	15:00	3916	tr	11309	13511	33920	40320	0	0	
14	15:30	979	tr	9523	14362	37312	34560	0	0	
15	16:00	3916	723	18451	23654	54272	63370	0	0	
16	16:30	4896	723	17856	21120	52576	57600	0	0	
17	17:00	5769	1446	19046	20275	50880	51840	0	0	
18	17:30	4896	1446	35712	21956	52576	57600	0	0	
19	18:00	6854	1085	20237	23654	50880	51840	0	0	
20	18:30	246,758	8823	41069	23654	45792	11520	0	0	
21	19:00	279891	9621	50321	24781	46129	11890	0	0	
22	19:30	242841	8678	36902	22809	44096	28800	0	0	
23	20:00	262426	8678	39878	24499	45792	31680	0	0	

NOTE: SAMPLES WERE TAKEN EVERY 15 MINUTES INITIALLY, THEN EVERY 30 MINUTES, AS INDICATED. SAMPLES 1 - 19 WERE OBTAINED FROM THE CHUKE MANIFOLD; AND SAMPLES 20 - 23 FROM THE GAS SEPARATOR.

19. COMPUTER DATA LISTINGS

Data is fed to the computer while drilling is in progress, using the Drill program and is stored on the tape at 10, 1, or 0.2 m intervals. This data is then available at a later date for use in other programs (for example, KICK, SURGE, COST, OPTBIT and HYDRL).

The data can also be accessed by the REPORT program, which allows the operator to list both raw and calculated data in various formats. Either detailed data or data averaged over any particular depth interval, may be listed.

In addition, the data may be plotted in various formats, at any scale the operator desires.

The following data lists have been made for this well

- a. Bit record & Bit initialization data
- b. Hydraulic analyses
- c. Data list A
- d. Data list B
- e. Data list C
- f. Data list D

COMPUTER PLOTS

Using the REPORT program, the following plots have been drawn for this well :

- GEOPLOT - 1:5000 SCALE - 2m average
- GEOPLOT 1:2000 SCALE - 2m average
- DRILLING PARAMETER PLOT - 1:5000 SCALE - 2m average
- COST ANALYSIS PLOT - 1:2000 SCALE - 2m average

Since all the data is stored on tape, further data lists or plots are available at any time on request.

BIT RECORD

BIT SIZE Inches

BIT COST A dollars

JET SIZE Thirty seconds of an inch

DEPTHS Metres

BIT RUN (HOLE MADE). . Metres

TOTAL HOURS. Hours (the time the bit was actually drilling)

AVERAGE ROP. Metres/hour

CUMULATIVE COST/METRE. A dollars

BIT CONDITION : Teeth

Bearings

Gauge . . . Inches

WELL: TARWHINE # 1

BIT RECORD

BIT IADC					DEPTH	DEPTH	BIT	TOTAL	TRIP				TOTAL	CONDITION
No.	CODE MAKE & TYPE	SIZE	COST	NOZZLES	IN	OUT	RUN	HOURS	AROP	TIME	CCOST	TURNS	T B G	
1	111 HTC OSC3AJ&26*HO	26.000	3000.00	20 20 20	65.0	204.0	139.0	5.80	24.0	1.7	212.63	33634	2 2 0.004	
2	111 HTC 3AJ	17.500	5000.00	20 20 20	204.0	799.0	595.0	13.87	42.9	3.9	114.16	116516	3 3 0.000	
3	114 HTC X3A	12.250	1300.00	16 16 16	799.0	1293.0	494.0	21.11	23.4	5.7	194.86	162445	3 5 0.000	
4	114 HTC X3A	12.250	1300.00	16 16 16	1293.0	1391.0	98.0	4.14	23.7	6.1	383.31	33204	1 3 0.000	
5	4 CHRISTENSEN C22	8.468	15000.00	13 13 13	1392.0	1404.4	12.4	2.02	6.1	6.1	3528.92	11091	0 0 0.300	
5	4 CHRISTENSEN C22	8.468	15000.00	13 13 13	1405.0	1418.2	13.2	5.21	4.1	6.2	2115.03	28361	0 0 0.800	
6	114 HTC X3A	12.250	1400.00	14 14 15	1418.0	1495.0	77.0	4.60	16.7	6.4	524.40	36973	7 6 0.750	
7	217 HTC JD4	12.250	1800.00	15 15 14	1495.0	1585.0	90.0	7.22	12.5	6.8	571.64	49693	7 5 0.313	
9	517 HTC J22	12.250	4200.00	15 15 14	1585.0	1986.0	401.0	40.51	9.9	8.2	440.71	244481	5 4 0.188	
10	517 HTC J22	12.250	4200.00	14 14 15	1986.0	2161.0	175.0	29.75	5.9	8.9	806.19	175777	8 5 0.125	
11	527 HTC J33	12.250	6090.00	14 14 14	2161.0	2324.5	163.5	35.81	4.6	9.5	1018.66	204879	4 6 0.188	
12	527 HTC J33	12.250	6090.00	14 14 14	2324.5	2521.0	196.5	45.29	4.3	10.2	1031.45	252275	6 6 0.250	
13	316 HTC J7	12.250	1800.00	14 14 14	2521.0	2535.0	14.0	6.20	2.3	10.2	4277.77	20696	3 2 0.000	
14	527 HTC J33	12.250	6090.00	14 14 14	2535.0	2600.0	65.0	8.77	7.4	10.4	1138.12	53719	5 3 0.125	
15	527 HTC J33	12.250	6090.00	14 14 15	2600.0	2663.3	63.3	13.94	4.5	10.7	1474.93	76380	3 3 0.125	
16	4 CHRISTENSEN C20	8.468	15000.00	13 13 13	2663.3	2669.0	5.7	4.08	1.4	10.71	1818.13	18692	0 0 0.200	

WELL: TARWHINE #1

BIT RECORD

BIT IADC No.	CODE MAKE & TYPE	SIZE	COST	NOZZLES	DEPTH IN	DEPTH OUT	BIT RUN	TOTAL HOURS	TRIP AROP TIME	CCOST	TOTAL TURNS	CONDITION T B G
17	527 HTC J33	12.250	6090.00	14 14 15	2669.0	2815.0	146.0	33.41	4.4 11.2	1123.96	234387	6 5 0.187
18	527 HTC J33	12.250	6090.00	14 14 15	2815.0	2955.0	140.0	36.54	3.8 11.7	1263.97	218379	6 6 0.250
19	131 HTC OSC 1G	8.500	900.00	28 28 28	1998.0	2460.0	462.0	14.37	32.2 9.9	188.02	104481	3 5 0.000
20	116 HTC J2	8.500	900.00	16 16 16	2460.0	2747.0	287.0	5.46	52.6 11.0	206.28	35461	2 2 0.000

BIT NUMBER: 1 IADC CODE 111 HTC OSC3AJ&26"HO

STARTING DEPTH.....	65.0		
BIT COST, RIG COST/HOUR.....	3000.00	3542.00	
TRIP TIME.....	1.7		
BIT DIAMETER.....	26.000		
NOZZLES.....	20	20	20
HW DRILL COLLAR LENGTH, OD, ID....	22.12	9.750	3.062
DRILL COLLAR LENGTH, OD, ID.....	39.15	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	27.74	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	0.00	0.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	3.0	1.80	
FINISHING DEPTH.....	204.0		
CUMULATIVE HOURS, TURNS.....	5.80	33634	
BIT CONDITION OUT.....	T 2	B 2	G 0.000

BIT NUMBER: 2 IADC CODE 111 HTC 3AJ

STARTING DEPTH.....	204.0		
BIT COST, RIG COST/HOUR.....	5000.00	3542.00	
TRIP TIME.....	3.9		
BIT DIAMETER.....	17.500		
NOZZLES.....	20	20	20
DRILL COLLAR LENGTH, OD, ID.....	80.00	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	27.74	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	190.00	19.124	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.5	2.00	
FINISHING DEPTH.....	799.0		
CUMULATIVE HOURS, TURNS.....	13.87	116516	
BIT CONDITION OUT.....	T 3	B 3	G 0.000

BIT NUMBER: 3 IADC CODE 114 HTC X3A

STARTING DEPTH.....	799.0		
BIT COST, RIG COST/HOUR.....	1300.00	3542.00	
TRIP TIME.....	5.7		
BIT DIAMETER.....	12.250		
NOZZLES.....	16	16	16
DRILL COLLAR LENGTH, OD, ID.....	117.73	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR.....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.30	
FINISHING DEPTH.....	1293.0		
CUMULATIVE HOURS, TURNS.....	21.11	162445	
BIT CONDITION OUT.....	T 3	B 5	G 0.000

BIT NUMBER: 4 IADC CODE 114 HTC X3A

STARTING DEPTH.....	1293.0		
BIT COST, RIG COST/HOUR.....	1300.00	3542.00	
TRIP TIME.....	6.1		
BIT DIAMETER.....	12.250		
NOZZLES.....	16	16	16
DRILL COLLAR LENGTH, OD, ID.....	117.73	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR.....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.40	
FINISHING DEPTH.....	1391.0		
CUMULATIVE HOURS, TURNS.....	4.14	33204	
BIT CONDITION OUT.....	T 1	B 3	G 0.000

BIT NUMBER: 5 IADC CODE 4 CHRISTENSEN C22

STARTING DEPTH.....	1392.0		
BIT COST, RIG COST/HOUR.....	15000.00	3542.00	
TRIP TIME.....	6.1		
BIT DIAMETER.....	8.468		
NOZZLES.....	13	13	13
DRILL COLLAR LENGTH, OD, ID.....	115.49	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	0.3	2.65	
FINISHING DEPTH.....	1404.4		
CUMULATIVE HOURS, TURNS.....	2.02	11091	
BIT CONDITION OUT.....	T 0	B 0	G 0.300

BIT NUMBER: 5 IADC CODE 4 CHRISTENSEN C22

STARTING DEPTH.....	1405.0		
BIT COST, RIG COST/HOUR.....	15000.00	3542.00	
TRIP TIME.....	6.2		
PREVIOUS HOLE MADE.....	13.0		
PREVIOUS HOURS, TURNS.....	2.02	11091	
BIT DIAMETER.....	8.468		
NOZZLES.....	13	13	13
DRILL COLLAR LENGTH, OD, ID.....	117.73	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	0.3	2.65	
FINISHING DEPTH.....	1418.2		
CUMULATIVE HOURS, TURNS.....	5.21	28361	
BIT CONDITION OUT.....	T 0	B 0	G 0.800

BIT NUMBER: 6 IADC CODE 114 HTC X3A

STARTING DEPTH.....	1418.0		
BIT COST, RIG COST/HOUR.....	1400.00	3542.00	
TRIP TIME.....	6.4		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	15
DRILL COLLAR LENGTH, OD, ID.....	117.73	8.000	2.713
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.45	
FINISHING DEPTH.....	1495.0		
CUMULATIVE HOURS, TURNS.....	4.60	36973	
BIT CONDITION OUT.....	T 7	B 6	G 0.750

BIT NUMBER: 7 IADC CODE 217 HTC JD4

STARTING DEPTH.....	1495.0		
BIT COST, RIG COST/HOUR.....	1800.00	3542.00	
TRIP TIME.....	6.8		
BIT DIAMETER.....	12.250		
NOZZLES.....	15	15	14
DRILL COLLAR LENGTH, OD, ID.....	117.73	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.50	
FINISHING DEPTH.....	1585.0		
CUMULATIVE HOURS, TURNS.....	7.22	49693	
BIT CONDITION OUT.....	T 7	B 5	G 0.313

BIT NUMBER: 9 IADC CODE 517 HTC J22

STARTING DEPTH.....	1585.0		
BIT COST, RIG COST/HOUR.....	4200.00	3542.00	
TRIP TIME.....	8.2		
BIT DIAMETER.....	12.250		
NOZZLES.....	15	15	14
DRILL COLLAR LENGTH, OD, ID.....	117.73	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	785.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR.....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.54	
FINISHING DEPTH.....	1986.0		
CUMULATIVE HOURS, TURNS.....	40.51	244481	
BIT CONDITION OUT.....	T 5	B 4	G 0.188

BIT NUMBER: 10 IADC CODE 517 HTC J22

STARTING DEPTH.....	1986.0		
BIT COST, RIG COST/HOUR.....	4200.00	3542.00	
TRIP TIME.....	8.9		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	15
DRILL COLLAR LENGTH, OD, ID.....	117.73	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	84.53	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR.....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.50	
FINISHING DEPTH.....	2161.0		
CUMULATIVE HOURS, TURNS.....	29.75	175777	
BIT CONDITION OUT.....	T 8	B 5	G 0.125

BIT NUMBER: 11 IADC CODE 527 HTC J33

STARTING DEPTH.....	2161.0		
BIT COST, RIG COST/HOUR.....	6090.00	3542.00	
TRIP TIME.....	9.5		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	14
DRILL COLLAR LENGTH, OD, ID.....	119.15	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	83.20	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.50	
FINISHING DEPTH.....	2324.5		
CUMULATIVE HOURS, TURNS.....	35.81	204879	
BIT CONDITION OUT.....	T 4	B 6	G 0.188

BIT NUMBER: 12 IADC CODE 527 HTC J33

STARTING DEPTH.....	2324.5		
BIT COST, RIG COST/HOUR.....	6090.00	3542.00	
TRIP TIME.....	10.2		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	14
DRILL COLLAR LENGTH, OD, ID.....	119.15	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	83.20	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.50	
FINISHING DEPTH.....	2521.0		
CUMULATIVE HOURS, TURNS.....	45.29	252275	
BIT CONDITION OUT.....	T 6	B 6	G 0.250

BIT NUMBER: 13 IADC CODE 316 HTC J7

STARTING DEPTH.....	2521.0		
BIT COST, RIG COST/HOUR.....	1800.00	3542.00	
TRIP TIME.....	10.2		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	14
DRILL COLLAR LENGTH, OD, ID.....	119.15	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	83.20	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	1.8	2.55	
FINISHING DEPTH.....	2535.0		
CUMULATIVE HOURS, TURNS.....	6.20	20696	
BIT CONDITION OUT.....	T 3	B 2	G 0.000

BIT NUMBER: 14 IADC CODE 527 HTC J33

STARTING DEPTH.....	2535.0		
BIT COST, RIG COST/HOUR.....	6090.00	3542.00	
TRIP TIME.....	10.4		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	14
DRILL COLLAR LENGTH, OD, ID.....	147.86	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	83.20	5.000	3.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	1.8	2.55	
FINISHING DEPTH.....	2600.0		
CUMULATIVE HOURS, TURNS.....	8.77	53719	
BIT CONDITION OUT.....	T 5	B 3	G 0.125

BIT NUMBER: 15 IADC CODE 527 HTC J33

STARTING DEPTH.....	2600.0		
BIT COST, RIG COST/HOUR.....	6090.00	3542.00	
TRIP TIME.....	10.7		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	15
DRILL COLLAR LENGTH, OD, ID.....	176.00	8.000	2.813
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	1.7	2.56	
FINISHING DEPTH.....	2663.3		
CUMULATIVE HOURS, TURNS.....	13.94	76380	
BIT CONDITION OUT.....	T 3	B 3	G 0.125

BIT NUMBER: 16 IADC CODE 4 CHRISTENSEN C20

STARTING DEPTH.....	2663.3		
BIT COST, RIG COST/HOUR.....	15000.00	3542.00	
TRIP TIME.....	10.7		
BIT DIAMETER.....	8.468		
NOZZLES.....	13	13	13
DRILL COLLAR LENGTH, OD, ID.....	79.55	8.000	2.813
DRILL PIPE OD, ID.....		5.000	4.276
LINER DEPTH, TOP, ID.....	2663.30	784.00	12.250
CASING ID.....	12.415		
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	0.3	2.65	
FINISHING DEPTH.....	2669.0		
CUMULATIVE HOURS, TURNS.....	4.08	18692	
BIT CONDITION OUT.....	T 0	B 0	G 0.200

BIT NUMBER: 16 IADC CODE 4 CHRISTENSEN C20

STARTING DEPTH.....	2663.3		
BIT COST, RIG COST/HOUR.....	15000.00	3542.00	
TRIP TIME.....	10.7		
BIT DIAMETER.....	8.468		
NOZZLES.....	13	13	13
DRILL COLLAR LENGTH, OD, ID.....	79.55	8.000	2.813
DRILL PIPE OD, ID.....		5.000	4.276
LINER DEPTH, TOP, ID.....	2663.30	784.00	12.250
CASING ID.....	12.415		
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	0.3	2.65	
FINISHING DEPTH.....	2669.0		
CUMULATIVE HOURS, TURNS.....	4.08	18692	
BIT CONDITION OUT.....	T 0	B 0	G 0.200

BIT NUMBER: 17 IADC CODE 527 HTC J33

STARTING DEPTH.....	2669.0		
BIT COST, RIG COST/HOUR.....	6090.00	3542.00	
TRIP TIME.....	11.2		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	15
DRILL COLLAR LENGTH, OD, ID.....	176.00	8.000	2.813
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	0.3	2.65	
FINISHING DEPTH.....	2785.0		
CUMULATIVE HOURS, TURNS.....	33.64	236008	
BIT CONDITION OUT.....	T 6	B 5	G 0.187

BIT NUMBER: 18 IADC CODE 527 HTC J33

STARTING DEPTH.....	2815.0		
BIT COST, RIG COST/HOUR.....	6090.00	3542.00	
TRIP TIME.....	11.7		
BIT DIAMETER.....	12.250		
NOZZLES.....	14	14	15
HW DRILL COLLAR LENGTH, OD, ID....	176.00	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	784.00	12.415	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	0.3	2.35	
FINISHING DEPTH.....	2955.0		
CUMULATIVE HOURS, TURNS.....	36.54	218379	
BIT CONDITION OUT.....	T 6	B 6	G 0.250

BIT NUMBER: 19 IADC CODE 131 HTC OSC 1G

STARTING DEPTH.....	1998.0		
BIT COST, RIG COST/HOUR.....	900.00	3542.00	
TRIP TIME.....	9.9		
BIT DIAMETER.....	8.500		
NOZZLES.....	28	28	28
DRILL COLLAR LENGTH, OD, ID.....	89.32	6.250	2.813
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	2930.00	8.681	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	3.0	2.00	
FINISHING DEPTH.....	2460.0		
CUMULATIVE HOURS, TURNS.....	14.37	104481	
BIT CONDITION OUT.....	T 3	B 5	G 0.000

BIT NUMBER: 20 IADC CODE 116 HTC J2

STARTING DEPTH.....	2460.0		
BIT COST, RIG COST/HOUR.....	900.00	3542.00	
TRIP TIME.....	11.0		
BIT DIAMETER.....	8.500		
NOZZLES.....	16	16	16
DRILL COLLAR LENGTH, OD, ID.....	89.32	6.250	2.813
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	2930.00	8.681	
RISER LENGTH, ID.....	65.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.5		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.08		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.0	2.00	
FINISHING DEPTH.....	2747.0		
CUMULATIVE HOURS, TURNS.....	5.46	35461	
BIT CONDITION OUT.....	T 2	B 2	G 0.000

HYDRAULIC ANALYSIS

Data listed from data tape every 100m for each bit run.

DEPTH. Metres

FLOW RATE. Rate of mud flow into the well,
in gallons per minute

ANNULAR VOLUMES. . . . Barrels, Barrels/metre

ANNULAR VELOCITIES . . Metres/minute

CRITICAL VELOCITIES. . The annular velocity above which
the flow becomes turbulent

SLIP VELOCITY. The rate of slip of cuttings in the
annulus under laminar flow

ASCEND VELOCITY. . . . The rate of ascent of cuttings in the
annulus under laminar flow

PRESSURE UNITS Pounds per square inch

HHP. Hydraulic horsepower at the bit

IMPACT FORCE The impact force at the bit,
in foot pound per second squared

JET VELOCITY The velocity of mud through the bit
nozzles, in metres per second

DENSITY UNITS. Pounds per gallon

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 100.0 AND TVD 100.0

SPM 1 105 SPM 2 112 FLOW RATE 1085

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP	
HWDC/OH	1.851	41	14	19	LAMINAR	0	14	0.0	
DC/OH	1.950	76	13	19	LAMINAR	0	13	0.0	
HWDP/OH	2.074	58	12	18	LAMINAR	0	12	0.0	
DP/OH	2.074	23	12	18	LAMINAR	0	12	0.0	
TOTAL VOLUME		198	TOTAL PRESSURE DROP						0.0

LAG: 7.7 MINUTES 803 STROKES #1 AND 857 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1099.8 HHP 696 IMPACT FORCE 1826
% SURFACE PRESSURE 108.4 HHP/sqin 1.31 JET VELOCITY 115

PRESSURE BREAKDOWN:

SURFACE 76.6
STRING 249.4
BIT 1099.8
ANNULUS 0.0
TOTAL 1425.8 PUMP PRESSURE 1015.0 % DIFFERENCE 40.5

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.60	HYDROSTATIC PRESSURE 146.7
CIRCULATING: ECD	8.60	CIRCULATING PRESSURE 146.7
PULLING OUT: TRIP MARGIN	0.00	ESTIMATED SWAB 0.0
EFFECTIVE MUD WEIGHT	8.60	BOTTOM HOLE PRESSURE 146.7

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 200.0 AND TVD 200.0

SPM 1 106 SPM 2 112 FLOW RATE 1090

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	1.851	41	14	19	LAMINAR	0	14	0.0
DC/OH	1.950	76	13	19	LAMINAR	0	13	0.0
HWDP/OH	2.074	58	13	18	LAMINAR	0	12	0.0
DP/OH	2.074	230	13	18	LAMINAR	0	12	0.0
TOTAL VOLUME		405			TOTAL PRESSURE DROP			0.0

LAG: 15.6 MINUTES 1655 STROKES #1 AND 1748 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1110.0 HHP 706 IMPACT FORCE 1843
% SURFACE PRESSURE 96.5 HHP/sqin 1.33 JET VELOCITY 115

PRESSURE BREAKDOWN:

SURFACE 77.2
STRING 296.0
BIT 1110.0
ANNULUS 0.0
TOTAL 1483.2 PUMP PRESSURE 1150.0 % DIFFERENCE 29.0

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.60	HYDROSTATIC PRESSURE 293.4
CIRCULATING: ECD	8.60	CIRCULATING PRESSURE 293.5
PULLING OUT: TRIP MARGIN	0.00	ESTIMATED SWAB 0.1
EFFECTIVE MUD WEIGHT	8.60	BOTTOM HOLE PRESSURE 293.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 300.0 AND TVD 300.0

SPM 1 123 SPM 2 112 FLOW RATE 1175

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.772	62	36	40	LAMINAR	1	36	0.2
HWDP/OH	0.896	25	31	37	LAMINAR	0	31	0.0
DP/OH	0.896	2	31	37	LAMINAR	0	31	0.0
DP/CSG	1.085	136	26	36	LAMINAR	0	25	0.1
DP/RIS	1.325	86	21	35	LAMINAR	0	21	0.0
TOTAL VOLUME		310	TOTAL PRESSURE DROP			0.4		

LAG: 11.1 MINUTES 1365 STROKES #1 AND 1243 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1304.8 HHP 894 IMPACT FORCE 2166
% SURFACE PRESSURE 52.6 HHP/sqin 3.72 JET VELOCITY 124

PRESSURE BREAKDOWN:

SURFACE 96.7
STRING 524.9
BIT 1304.8
ANNULUS 0.4
TOTAL 1926.8 PUMP PRESSURE 2480.0 % DIFFERENCE 22.3

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.70	HYDROSTATIC PRESSURE 445.3
CIRCULATING: ECD	8.71	CIRCULATING PRESSURE 445.7
PULLING OUT: TRIP MARGIN	0.02	ESTIMATED SWAB 0.8
EFFECTIVE MUD WEIGHT	8.68	BOTTOM HOLE PRESSURE 444.5

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 400.0 AND TVD 400.0

SPM 1 118 SPM 2 110 FLOW RATE 1140

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.772	62	35	40	LAMINAR	1	35	0.2
HWDP/OH	0.896	25	30	37	LAMINAR	0	30	0.0
DP/OH	0.896	92	30	37	LAMINAR	0	30	0.1
DP/CSG	1.085	136	25	36	LAMINAR	0	25	0.1
DP/RIS	1.325	86	20	35	LAMINAR	0	20	0.0

TOTAL VOLUME 400 TOTAL PRESSURE DROP 0.5

LAG: 14.7 MINUTES 1740 STROKES #1 AND 1622 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1228.3	HHP	817	IMPACT FORCE	2039
% SURFACE PRESSURE	49.7	HHP/sqin	3.40	JET VELOCITY	121

PRESSURE BREAKDOWN:

SURFACE	91.6		
STRING	549.9		
BIT	1228.3		
ANNULUS	0.5		
TOTAL	1870.3	PUMP PRESSURE	2470.0
		% DIFFERENCE	24.3

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 8.70	HYDROSTATIC PRESSURE 593.7
CIRCULATING:	ECD 8.71	CIRCULATING PRESSURE 594.2
PULLING OUT:	TRIP MARGIN 0.01	ESTIMATED SWAB 1.0
	EFFECTIVE MUD WEIGHT 8.69	BOTTOM HOLE PRESSURE 592.7

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 500.0 AND TVD 500.0

SPM 1 130 SPM 2 110 FLOW RATE 1200

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.772	62	37	40	LAMINAR	1	36	0.2
HWDP/OH	0.896	25	32	37	LAMINAR	0	31	0.0
DP/OH	0.896	181	32	37	LAMINAR	0	31	0.3
DP/CSG	1.085	136	26	36	LAMINAR	0	26	0.1
DP/RIS	1.325	86	22	35	LAMINAR	0	21	0.0
TOTAL VOLUME		490			TOTAL PRESSURE DROP		0.7	

LAG: 17.1 MINUTES 2229 STROKES #1 AND 1886 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1361.0	HHP	952	IMPACT FORCE	2259
% SURFACE PRESSURE	46.1	HHP/sqin	3.96	JET VELOCITY	127

PRESSURE BREAKDOWN:

SURFACE	100.5		
STRING	661.0		
BIT	1361.0		
ANNULUS	0.7		
TOTAL	2123.0	PUMP PRESSURE	2950.0
		% DIFFERENCE	28.0

BOTTOM HOLE PRESSURES:

		DENSITY UNITS		PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT	8.70	HYDROSTATIC PRESSURE	742.1
CIRCULATING:	ECD	8.71	CIRCULATING PRESSURE	742.8
PULLING OUT:	TRIP MARGIN	0.02	ESTIMATED SWAB	1.3
	EFFECTIVE MUD WEIGHT	8.68	BOTTOM HOLE PRESSURE	740.8

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 600.0 AND TVD 600.0

SPM 1 100 SPM 2 110 FLOW RATE 1050

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.772	62	32	40	LAMINAR	1	32	0.2
HMWP/OH	0.896	25	28	37	LAMINAR	0	28	0.0
DP/OH	0.896	271	28	37	LAMINAR	0	28	0.4
DP/CSG	1.085	136	23	36	LAMINAR	0	23	0.1
DP/RIS	1.325	86	19	35	LAMINAR	0	19	0.0
TOTAL VOLUME		579			TOTAL PRESSURE DROP			0.7

LAG: 23.2 MINUTES 2318 STROKES #1 AND 2550 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1042.0 HHP 638 IMPACT FORCE 1730
% SURFACE PRESSURE 44.7 HHP/sqin 2.65 JET VELOCITY 111

PRESSURE BREAKDOWN:

SURFACE 79.0
STRING 565.3
BIT 1042.0
ANNULUS 0.7
TOTAL 1687.0 PUMP PRESSURE 2330.0 % DIFFERENCE 27.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.70	HYDROSTATIC PRESSURE 890.5
CIRCULATING: ECD	8.71	CIRCULATING PRESSURE 891.3
PULLING OUT: TRIP MARGIN	0.01	ESTIMATED SWAB 1.5
EFFECTIVE MUD WEIGHT	8.69	BOTTOM HOLE PRESSURE 889.1

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 700.0 AND TVD 700.0

SPM 1 112 SPM 2 110 FLOW RATE 1110

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.772	62	34	40	LAMINAR	1	34	0.2
HWDP/OH	0.896	25	29	37	LAMINAR	0	29	0.0
DP/OH	0.896	360	29	37	LAMINAR	0	29	0.5
DP/CSG	1.085	136	24	36	LAMINAR	0	24	0.1
DP/RIS	1.325	86	20	35	LAMINAR	0	20	0.0
TOTAL VOLUME		669			TOTAL PRESSURE DROP		0.9	

LAG: 25.3 MINUTES 2836 STROKES #1 AND 2785 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1164.5 HHP 754 IMPACT FORCE 1933
 % SURFACE PRESSURE 40.9 HHP/sqin 3.13 JET VELOCITY 118

PRESSURE BREAKDOWN:

SURFACE 87.3
 STRING 675.1
 BIT 1164.5
 ANNULUS 0.9
 TOTAL 1927.8 PUMP PRESSURE 2850.0 % DIFFERENCE 32.4

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.70	HYDROSTATIC PRESSURE 1039.0
CIRCULATING: ECD	8.71	CIRCULATING PRESSURE 1039.9
PULLING OUT: TRIP MARGIN	0.01	ESTIMATED SWAB 1.8
EFFECTIVE MUD WEIGHT	8.69	BOTTOM HOLE PRESSURE 1037.2

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 800.0 AND TVD 800.0

SPM 1 100 SPM 2 0 FLOW RATE 500

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	4	43	117	LAMINAR	0	43	0.5
DC/CSG	0.287	29	41	117	LAMINAR	0	41	3.2
HWDP/CSG	0.411	35	29	116	LAMINAR	0	29	1.3
DP/CSG	0.411	219	29	116	LAMINAR	0	29	8.2
DP/RIS	1.325	86	9	114	LAMINAR	0	9	0.3

TOTAL VOLUME 374 TOTAL PRESSURE DROP 13.6

LAG: 31.4 MINUTES 3140 STROKES #1 AND 0 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 596.7 HHP 174 IMPACT FORCE 634
% SURFACE PRESSURE 74.6 HHP/sqin 1.48 JET VELOCITY 83

PRESSURE BREAKDOWN:

SURFACE 21.4
STRING 238.7
BIT 596.7
ANNULUS 13.6
TOTAL 870.4 PUMP PRESSURE 800.0 % DIFFERENCE 8.8

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	9.00	HYDROSTATIC PRESSURE 1228.3
CIRCULATING: ECD	9.10	CIRCULATING PRESSURE 1241.9
PULLING OUT: TRIP MARGIN	0.20	ESTIMATED SWAB 27.2
EFFECTIVE MUD WEIGHT	8.80	BOTTOM HOLE PRESSURE 1201.2

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 900.0 AND TVD 900.0

SPM 1 86 SPM 2 90 FLOW RATE 880

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	76	161	LAMINAR	0	76	7.8
DC/CSG	0.287	0	73	162	LAMINAR	0	73	0.1
HWDP/CSG	0.411	35	51	164	LAMINAR	0	51	2.8
DP/CSG	0.411	260	51	164	LAMINAR	0	51	21.0
DP/RIS	1.325	86	16	168	LAMINAR	0	16	0.7
TOTAL VOLUME		414	TOTAL PRESSURE DROP			32.5		

LAG: 19.7 MINUTES 1698 STROKES #1 AND 1777 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1827.9	HHP	938	IMPACT FORCE	1942
% SURFACE PRESSURE	67.0	HHP/sqin	7.96	JET VELOCITY	146

PRESSURE BREAKDOWN:

SURFACE	58.5		
STRING	688.3		
BIT	1827.9		
ANNULUS	32.5		
TOTAL	2607.2	PUMP PRESSURE	2730.0
		% DIFFERENCE	4.5

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 8.90	HYDROSTATIC PRESSURE 1366.5
CIRCULATING:	ECD 9.11	CIRCULATING PRESSURE 1399.0
PULLING OUT:	TRIP MARGIN 0.42	ESTIMATED SWAB 64.9
	EFFECTIVE MUD WEIGHT 8.48	BOTTOM HOLE PRESSURE 1301.6

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1000.0 AND TVD 1000.0

SPM 1 96 SPM 2 80 FLOW RATE 880

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	76	161	LAMINAR	0	76	7.9
HWDP/OH	0.398	34	53	164	LAMINAR	0	52	2.9
DP/OH	0.398	5	53	164	LAMINAR	0	52	0.5
DP/CSG	0.411	296	51	164	LAMINAR	0	51	23.9
DP/RIS	1.325	86	16	168	LAMINAR	0	16	0.7
TOTAL VOLUME		453	TOTAL PRESSURE DROP			35.9		

LAG: 21.6 MINUTES 2078 STROKES #1 AND 1732 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1827.9 HHP 938 IMPACT FORCE 1942
% SURFACE PRESSURE 64.4 HHP/sqin 7.96 JET VELOCITY 146

PRESSURE BREAKDOWN:

SURFACE 58.5
STRING 722.0
BIT 1827.9
ANNULUS 35.9
TOTAL 2644.4 PUMP PRESSURE 2840.0 % DIFFERENCE 6.9

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.90	HYDROSTATIC PRESSURE 1518.4
CIRCULATING: ECD	9.11	CIRCULATING PRESSURE 1554.3
PULLING OUT: TRIP MARGIN	0.42	ESTIMATED SWAB 71.8
EFFECTIVE MUD WEIGHT	8.48	BOTTOM HOLE PRESSURE 1446.6

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1100.0 AND TVD 1100.0

SPM 1 96 SPM 2 80 FLOW RATE 880

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	76	63	TURBULENT			2.4
HWDP/OH	0.398	34	53	56	LAMINAR	1	52	0.5
DP/OH	0.398	45	53	56	LAMINAR	1	52	0.7
DP/CSG	0.411	296	51	56	LAMINAR	1	50	4.1
DP/RIS	1.325	86	16	47	LAMINAR	0	16	0.1
TOTAL VOLUME		493			TOTAL PRESSURE DROP			7.8

LAG: 23.5 MINUTES 2261 STROKES #1 AND 1884 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1827.9 HHP 938 IMPACT FORCE 1942
% SURFACE PRESSURE 62.6 HHP/sqin 7.96 JET VELOCITY 146

PRESSURE BREAKDOWN:

SURFACE 62.0
STRING 800.5
BIT 1827.9
ANNULUS 7.8
TOTAL 2698.3 PUMP PRESSURE 2920.0 % DIFFERENCE 7.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.90	HYDROSTATIC PRESSURE 1670.2
CIRCULATING: ECD	8.94	CIRCULATING PRESSURE 1678.0
PULLING OUT: TRIP MARGIN	0.08	ESTIMATED SWAB 15.7
EFFECTIVE MUD WEIGHT	8.82	BOTTOM HOLE PRESSURE 1654.5

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1200.0 AND TVD 1200.0

SPM 1 90 SPM 2 84 FLOW RATE 870

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	76	63	TURBULENT			2.4
HWDP/OH	0.398	34	52	56	LAMINAR	1	51	0.5
DP/OH	0.398	85	52	56	LAMINAR	1	51	1.3
DP/CSG	0.411	296	50	56	LAMINAR	1	50	4.1
DP/RIS	1.325	86	16	47	LAMINAR	0	16	0.1
TOTAL VOLUME		533	TOTAL PRESSURE DROP					8.4

LAG: 25.7 MINUTES 2317 STROKES #1 AND 2162 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1786.6 HHP 906 IMPACT FORCE 1898
% SURFACE PRESSURE 63.4 HHP/sqin 7.69 JET VELOCITY 144

PRESSURE BREAKDOWN:

SURFACE 60.7
STRING 819.2
BIT 1786.6
ANNULUS 8.4
TOTAL 2674.9 PUMP PRESSURE 2820.0 % DIFFERENCE 5.1

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.90	HYDROSTATIC PRESSURE 1822.0
CIRCULATING: ECD	8.94	CIRCULATING PRESSURE 1830.4
PULLING OUT: TRIP MARGIN	0.08	ESTIMATED SWAB 16.7
EFFECTIVE MUD WEIGHT	8.82	BOTTOM HOLE PRESSURE 1805.3

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1300.0 AND TVD 1300.0

SPM 1 100 SPM 2 75 FLOW RATE 875

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	76	88	LAMINAR	1	75	3.8
HWDP/OH	0.398	34	52	77	LAMINAR	0	52	1.0
DP/OH	0.398	125	52	77	LAMINAR	0	52	3.7
DP/CSG	0.411	296	51	76	LAMINAR	0	50	8.1
DP/RIS	1.325	86	16	63	LAMINAR	0	16	0.1

TOTAL VOLUME 573 TOTAL PRESSURE DROP 16.6

LAG: 27.5 MINUTES 2751 STROKES #1 AND 2063 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 2050.9 HHP 1047 IMPACT FORCE 2179
 % SURFACE PRESSURE 100.5 HHP/sqin 8.88 JET VELOCITY 145

PRESSURE BREAKDOWN:

SURFACE 79.9
 STRING 1123.2
 BIT 2050.9
 ANNULUS 16.6
 TOTAL 3270.5 PUMP PRESSURE 2040.0 % DIFFERENCE 60.3

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	10.10	HYDROSTATIC PRESSURE 2240.0
CIRCULATING: ECD	10.18	CIRCULATING PRESSURE 2256.7
PULLING OUT: TRIP MARGIN	0.15	ESTIMATED SWAB 33.3
EFFECTIVE MUD WEIGHT	9.95	BOTTOM HOLE PRESSURE 2206.7

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1450.0 AND TVD 1450.0

SPM 1 69 SPM 2 79 FLOW RATE 740

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	64	102	LAMINAR	0	64	4.3
HWDP/OH	0.398	34	44	92	LAMINAR	0	44	1.2
DP/OH	0.398	185	44	92	LAMINAR	0	44	6.6
DP/CSG	0.411	296	43	92	LAMINAR	0	43	9.8
DP/RIS	1.325	86	13	79	LAMINAR	0	13	0.2
TOTAL VOLUME		633	TOTAL PRESSURE DROP			22.1		

LAG: 35.9 MINUTES 2479 STROKES #1 AND 2838 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 2272.7 HHP 981 IMPACT FORCE 1940
% SURFACE PRESSURE 80.0 HHP/sqin 8.32 JET VELOCITY 152

PRESSURE BREAKDOWN:

SURFACE 59.1
STRING 938.5
BIT 2272.7
ANNULUS 22.1
TOTAL 3292.4 PUMP PRESSURE 2840.0 % DIFFERENCE 15.9

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.10	HYDROSTATIC PRESSURE 2498.5
CIRCULATING:	ECD 10.19	CIRCULATING PRESSURE 2520.5
PULLING OUT:	TRIP MARGIN 0.18	ESTIMATED SWAB 44.1
	EFFECTIVE MUD WEIGHT 9.92	BOTTOM HOLE PRESSURE 2454.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1500.0 AND TVD 1500.0

SPM 1 75 SPM 2 79 FLOW RATE 770

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/ UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP	
DC/OH	0.274	32	67	101	LAMINAR	1	66	4.4	
HWDP/OH	0.398	34	46	90	LAMINAR	0	46	1.2	
DP/OH	0.398	205	46	90	LAMINAR	0	46	7.3	
DP/CSG	0.411	296	45	90	LAMINAR	0	44	9.7	
DP/RIS	1.325	86	14	76	LAMINAR	0	14	0.2	
TOTAL VOLUME		653	TOTAL PRESSURE DROP				22.7		

LAG: 35.6 MINUTES 2671 STROKES #1 AND 2813 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 2244.7 HHP 1008 IMPACT FORCE 2006
% SURFACE PRESSURE 78.2 HHP/sqin 8.55 JET VELOCITY 152

PRESSURE BREAKDOWN:

SURFACE 64.8
STRING 986.0
BIT 2244.7
ANNULUS 22.7
TOTAL 3318.2 PUMP PRESSURE 2870.0 % DIFFERENCE 15.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.10	HYDROSTATIC PRESSURE 2584.6
CIRCULATING:	ECD 10.19	CIRCULATING PRESSURE 2607.3
PULLING OUT:	TRIP MARGIN 0.18	ESTIMATED SWAB 45.4
EFFECTIVE MUD WEIGHT 9.92		BOTTOM HOLE PRESSURE 2539.2

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1600.0 AND TVD 1600.0

SPM 1 80 SPM 2 76 FLOW RATE 780

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	68	101	LAMINAR	1	67	4.4
HWDP/OH	0.398	34	47	90	LAMINAR	0	46	1.2
DP/OH	0.398	244	47	90	LAMINAR	0	46	8.7
DP/CSG	0.411	296	45	90	LAMINAR	0	45	9.8
DP/RIS	1.325	86	14	76	LAMINAR	0	14	0.2
TOTAL VOLUME		692	TOTAL PRESSURE DROP				24.3	

LAG: 37.3 MINUTES 2984 STROKES #1 AND 2835 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 2303.4 HHP 1048 IMPACT FORCE 2059
 % SURFACE PRESSURE 78.3 HHP/sqin 8.89 JET VELOCITY 153

PRESSURE BREAKDOWN:

SURFACE 66.3
 STRING 1047.4
 BIT 2303.4
 ANNULUS 24.3
 TOTAL 3441.4 PUMP PRESSURE 2940.0 % DIFFERENCE 17.1

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.10	HYDROSTATIC PRESSURE 2756.9
CIRCULATING:	ECD 10.19	CIRCULATING PRESSURE 2781.2
PULLING OUT:	TRIP MARGIN 0.18	ESTIMATED SWAB 48.5
	EFFECTIVE MUD WEIGHT 9.92	BOTTOM HOLE PRESSURE 2708.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1700.0 AND TVD 1700.0

SPM 1 76 SPM 2 72 FLOW RATE 740

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	64	102	LAMINAR	1	64	4.3
HWDP/OH	0.398	34	44	91	LAMINAR	0	44	1.2
DP/OH	0.398	284	44	91	LAMINAR	0	44	9.9
DP/CSG	0.411	296	43	90	LAMINAR	0	43	9.5
DP/RIS	1.325	86	13	77	LAMINAR	0	13	0.2
TOTAL VOLUME		732	TOTAL PRESSURE DROP			25.0		

LAG: 41.6 MINUTES 3160 STROKES #1 AND 2994 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 2052.7 HHP 886 IMPACT FORCE 1834
% SURFACE PRESSURE 74.1 HHP/sqin 7.52 JET VELOCITY 146

PRESSURE BREAKDOWN:

SURFACE 59.9
STRING 979.7
BIT 2052.7
ANNULUS 25.0
TOTAL 3117.2 PUMP PRESSURE 2770.0 % DIFFERENCE 12.5

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.00	HYDROSTATIC PRESSURE 2900.3
CIRCULATING:	ECD 10.09	CIRCULATING PRESSURE 2925.3
PULLING OUT:	TRIP MARGIN 0.17	ESTIMATED SWAB 50.1
EFFECTIVE MUD WEIGHT 9.83		BOTTOM HOLE PRESSURE 2850.2

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1800.0 AND TVD 1800.0

SPM 1 75 SPM 2 75 FLOW RATE 750

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	65	105	LAMINAR	0	65	4.7
HWDP/OH	0.398	34	45	90	LAMINAR	0	45	1.2
DP/OH	0.398	324	45	90	LAMINAR	0	45	11.5
DP/CSG	0.411	296	43	90	LAMINAR	0	43	9.6
DP/RIS	1.325	86	13	72	LAMINAR	0	13	0.1
TOTAL VOLUME		772	TOTAL PRESSURE DROP			27.1		

LAG: 43.3 MINUTES 3244 STROKES #1 AND 3244 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 2108.5 HHP 922 IMPACT FORCE 1884
% SURFACE PRESSURE 74.8 HHP/sqin 7.83 JET VELOCITY 148

PRESSURE BREAKDOWN:

SURFACE 65.6
STRING 1111.3
BIT 2108.5
ANNULUS 27.1
TOTAL 3312.5 PUMP PRESSURE 2820.0 % DIFFERENCE 17.5

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.00	HYDROSTATIC PRESSURE 3070.9
CIRCULATING:	ECD 10.09	CIRCULATING PRESSURE 3097.9
PULLING OUT:	TRIP MARGIN 0.18	ESTIMATED SWAB 54.2
EFFECTIVE MUD WEIGHT 9.82		BOTTOM HOLE PRESSURE 3016.7

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1900.0 AND TVD 1900.0

SPM 1 72 SPM 2 72 FLOW RATE 720

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	63	105	LAMINAR	0	62	4.6
HWDP/OH	0.398	34	43	89	LAMINAR	0	43	1.2
DP/OH	0.398	364	43	89	LAMINAR	0	43	12.4
DP/CSG	0.411	296	42	89	LAMINAR	0	41	9.3
DP/RIS	1.325	86	13	70	LAMINAR	0	13	0.1
TOTAL VOLUME		812	TOTAL PRESSURE DROP			27.6		

LAG: 47.4 MINUTES 3411 STROKES #1 AND 3411 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1943.2	HHP	816	IMPACT FORCE	1737
% SURFACE PRESSURE	66.5	HHP/sqin	6.92	JET VELOCITY	142

PRESSURE BREAKDOWN:

SURFACE	61.8		
STRING	1082.5		
BIT	1943.2		
ANNULUS	27.6		
TOTAL	3115.1	PUMP PRESSURE	2920.0
		% DIFFERENCE	6.7

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.00	HYDROSTATIC PRESSURE 3241.5
CIRCULATING:	ECD 10.09	CIRCULATING PRESSURE 3269.1
PULLING OUT:	TRIP MARGIN 0.17	ESTIMATED SWAB 55.2
EFFECTIVE MUD WEIGHT	9.83	BOTTOM HOLE PRESSURE 3186.3

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2000.0 AND TVD 2000.0

SPM 1 63 SPM 2 64 FLOW RATE 635

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	55	104	LAMINAR	0	55	4.3
HWDP/OH	0.398	34	38	89	LAMINAR	0	38	1.1
DP/OH	0.398	404	38	89	LAMINAR	0	38	12.9
DP/CSG	0.411	296	37	88	LAMINAR	0	37	8.6
DP/RIS	1.325	86	11	70	LAMINAR	0	11	0.1

TOTAL VOLUME 852 TOTAL PRESSURE DROP 27.0

LAG: 56.4 MINUTES 3551 STROKES #1 AND 3607 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1673.5 HHP 620 IMPACT FORCE 1428
% SURFACE PRESSURE 59.8 HHP/sqin 5.26 JET VELOCITY 131

PRESSURE BREAKDOWN:

SURFACE 49.7
STRING 899.0
BIT 1673.5
ANNULUS 27.0
TOTAL 2649.1 PUMP PRESSURE 2800.0 % DIFFERENCE 5.4

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.10	HYDROSTATIC PRESSURE 3446.2
CIRCULATING:	ECD 10.18	CIRCULATING PRESSURE 3473.1
PULLING OUT:	TRIP MARGIN 0.16	ESTIMATED SWAB 53.9
	EFFECTIVE MUD WEIGHT 9.94	BOTTOM HOLE PRESSURE 3392.3

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2100.0 AND TVD 2100.0

SPM 1 65 SPM 2 65 FLOW RATE 650

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	32	56	104	LAMINAR	0	56	4.3
HWDP/OH	0.398	34	39	89	LAMINAR	0	39	1.1
DP/OH	0.398	444	39	89	LAMINAR	0	39	14.3
DP/CSG	0.411	296	38	88	LAMINAR	0	37	8.8
DP/RIS	1.325	86	12	70	LAMINAR	0	12	0.1
TOTAL VOLUME		892			TOTAL PRESSURE DROP		28.6	

LAG: 57.6 MINUTES 3746 STROKES #1 AND 3746 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1753.5 HHP 665 IMPACT FORCE 1497
 % SURFACE PRESSURE 58.8 HHP/sqin 5.64 JET VELOCITY 134

PRESSURE BREAKDOWN:

SURFACE 51.8
 STRING 967.4
 BIT 1753.5
 ANNULUS 28.6
 TOTAL 2801.3 PUMP PRESSURE 2980.0 % DIFFERENCE 6.0

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.10	HYDROSTATIC PRESSURE 3618.5
CIRCULATING:	ECD 10.18	CIRCULATING PRESSURE 3647.1
PULLING OUT:	TRIP MARGIN 0.16	ESTIMATED SWAB 57.2
	EFFECTIVE MUD WEIGHT 9.94	BOTTOM HOLE PRESSURE 3561.3

CORE LAB

HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2200.0 AND TVD 2200.0

SPM 1 64 SPM 2 66 FLOW RATE 650

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	33	56	117	LAMINAR	0	56	5.2
HWDP/OH	0.398	33	39	105	LAMINAR	0	39	1.4
DP/OH	0.398	484	39	105	LAMINAR	0	39	20.3
DP/CSG	0.411	296	38	105	LAMINAR	0	37	11.5
DP/RIS	1.325	86	12	90	LAMINAR	0	12	0.2
TOTAL VOLUME		931			TOTAL PRESSURE DROP		38.6	

LAG: 60.2 MINUTES 3853 STROKES #1 AND 3973 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1930.7 HHP 732 IMPACT FORCE 1571
 % SURFACE PRESSURE 69.0 HHP/sqin 6.21 JET VELOCITY 141

PRESSURE BREAKDOWN:

SURFACE 49.5
 STRING 954.7
 BIT 1930.7
 ANNULUS 38.6
 TOTAL 2973.5 PUMP PRESSURE 2800.0 % DIFFERENCE 6.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.10	HYDROSTATIC PRESSURE 3790.8
CIRCULATING:	ECD 10.20	CIRCULATING PRESSURE 3829.4
PULLING OUT:	TRIP MARGIN 0.21	ESTIMATED SWAB 77.2
	EFFECTIVE MUD WEIGHT 9.89	BOTTOM HOLE PRESSURE 3713.6

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2300.0 AND TVD 2300.0

SPM 1 62 SPM 2 66 FLOW RATE 640

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP	
DC/OH	0.274	33	56	117	LAMINAR	0	55	5.2	
HWDP/OH	0.398	33	38	105	LAMINAR	0	38	1.4	
DP/OH	0.398	523	38	105	LAMINAR	0	38	21.8	
DP/CSG	0.411	296	37	105	LAMINAR	0	37	11.4	
DP/RIS	1.325	86	11	90	LAMINAR	0	11	0.2	
TOTAL VOLUME		971	TOTAL PRESSURE DROP						40.0

LAG: 63.8 MINUTES 3953 STROKES #1 AND 4208 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1871.8 HHP 699 IMPACT FORCE 1523
% SURFACE PRESSURE 66.6 HHP/sqin 5.93 JET VELOCITY 138

PRESSURE BREAKDOWN:

SURFACE 48.2
STRING 956.2
BIT 1871.8
ANNULUS 40.0
TOTAL 2916.1 PUMP PRESSURE 2810.0 % DIFFERENCE 3.8

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	10.10	HYDROSTATIC PRESSURE 3963.1
CIRCULATING: ECD	10.20	CIRCULATING PRESSURE 4003.1
PULLING OUT: TRIP MARGIN	0.20	ESTIMATED SWAB 79.9
EFFECTIVE MUD WEIGHT	9.90	BOTTOM HOLE PRESSURE 3883.2

CURE LAB

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2400.0 AND TVD 2400.0

SPM 1 0 SPM 2 103 FLOW RATE 515

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	33	45	128	LAMINAR	0	44	5.4
HWDP/OH	0.398	33	31	115	LAMINAR	0	31	1.4
DP/OH	0.398	563	31	115	LAMINAR	0	31	24.5
DP/CSG	0.411	296	30	114	LAMINAR	0	30	11.9
DP/RIS	1.325	86	9	98	LAMINAR	0	9	0.2
TOTAL VOLUME		1011			TOTAL PRESSURE DROP		43.4	

LAG: 82.5 MINUTES 0 STROKES #1 AND 8495 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1212.0 HHP 364 IMPACT FORCE 986
 % SURFACE PRESSURE 65.5 HHP/sqin 3.09 JET VELOCITY 111

PRESSURE BREAKDOWN:

SURFACE 33.6
 STRING 686.2
 BIT 1212.0
 ANNULUS 43.4
 TOTAL 1975.3 PUMP PRESSURE 1850.0 % DIFFERENCE 6.8

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.10	HYDROSTATIC PRESSURE 4135.5
CIRCULATING:	ECD 10.21	CIRCULATING PRESSURE 4178.9
PULLING OUT:	TRIP MARGIN 0.21	ESTIMATED SWAB 86.8
	EFFECTIVE MUD WEIGHT 9.89	BOTTOM HOLE PRESSURE 4048.7

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2500.0 AND TVD 2500.0

SPM 1 66 SPM 2 61 FLOW RATE 635

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	33	55	114	LAMINAR	0	55	4.9
HWDP/OH	0.398	33	38	100	LAMINAR	0	38	1.3
DP/OH	0.398	603	38	100	LAMINAR	0	38	22.9
DP/CSG	0.411	296	37	100	LAMINAR	0	37	10.3
DP/RIS	1.325	86	11	83	LAMINAR	0	11	0.2
TOTAL VOLUME		1051			TOTAL PRESSURE DROP			39.5

LAG: 69.5 MINUTES 4589 STROKES #1 AND 4241 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1824.4	HHP	676	IMPACT FORCE	1484
% SURFACE PRESSURE	59.8	HHP/sqin	5.73	JET VELOCITY	137

PRESSURE BREAKDOWN:

SURFACE	47.9		
STRING	1005.6		
BIT	1824.4		
ANNULUS	39.5		
TOTAL	2917.4	PUMP PRESSURE	3050.0
		% DIFFERENCE	4.3

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.00	HYDROSTATIC PRESSURE 4265.1
CIRCULATING:	ECD 10.09	CIRCULATING PRESSURE 4304.7
PULLING OUT:	TRIP MARGIN 0.19	ESTIMATED SWAB 79.0
EFFECTIVE MUD WEIGHT	9.81	BOTTOM HOLE PRESSURE 4186.1

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2530.0 AND TVD 2530.0

SPM 1 60 SPM 2 63 FLOW RATE 615

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	33	53	97	LAMINAR	0	53	3.7
HWDP/OH	0.398	33	37	86	LAMINAR	0	37	1.0
DP/OH	0.398	615	37	86	LAMINAR	0	37	17.9
DP/CSC	0.411	296	36	85	LAMINAR	0	35	7.9
DP/RIS	1.325	86	11	71	LAMINAR	0	11	0.1
TOTAL VOLUME		1063	TOTAL PRESSURE DROP			30.7		

LAG: 72.6 MINUTES 4356 STROKES #1 AND 4574 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1721.5 HHP 617 IMPACT FORCE 1400
% SURFACE PRESSURE 58.4 HHP/sqin 5.24 JET VELOCITY 133

PRESSURE BREAKDOWN:

SURFACE 43.1
STRING 912.5
BIT 1721.5
ANNULUS 30.7
TOTAL 2707.9 PUMP PRESSURE 2950.0 % DIFFERENCE 8.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.06	HYDROSTATIC PRESSURE 4342.2
CIRCULATING:	ECD 10.13	CIRCULATING PRESSURE 4372.8
PULLING OUT:	TRIP MARGIN 0.14	ESTIMATED SWAB 61.4
EFFECTIVE MUD WEIGHT 9.92		BOTTOM HOLE PRESSURE 4280.8

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2600.0 AND TVD 2600.0

SPM 1 64 SPM 2 64 FLOW RATE 640

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	41	56	91	LAMINAR	0	55	4.4
HWDP/OH	0.398	33	38	79	LAMINAR	0	38	0.9
DP/OH	0.398	631	38	79	LAMINAR	0	38	16.7
DP/CSG	0.411	296	37	78	LAMINAR	0	37	7.2
DP/RIS	1.325	86	11	64	LAMINAR	0	11	0.1
TOTAL VOLUME		1087				TOTAL PRESSURE DROP		29.3

LAG: 71.4 MINUTES 4567 STROKES #1 AND 4567 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1871.8 HHP 699 IMPACT FORCE 1523
 % SURFACE PRESSURE 77.3 HHP/sqin 5.93 JET VELOCITY 138

PRESSURE BREAKDOWN:

SURFACE 47.4
 STRING 1072.2
 BIT 1871.8
 ANNULUS 29.3
 TOTAL 3020.6 PUMP PRESSURE 2420.0 % DIFFERENCE 24.8

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	10.10	HYDROSTATIC PRESSURE 4480.0
CIRCULATING: ECD	10.17	CIRCULATING PRESSURE 4509.3
PULLING OUT: TRIP MARGIN	0.13	ESTIMATED SWAB 58.6
EFFECTIVE MUD WEIGHT	9.97	BOTTOM HOLE PRESSURE 4421.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2650.0 AND TVD 2650.0

SPM 1 64 SPM 2 63 FLOW RATE 635

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	48	55	101	LAMINAR	0	55	6.0
DP/OH	0.398	673	38	87	LAMINAR	0	38	20.4
DP/CSG	0.411	296	37	86	LAMINAR	0	37	8.2
DP/RIS	1.325	86	11	69	LAMINAR	0	11	0.1
TOTAL VOLUME		1103			TOTAL PRESSURE DROP			34.7

LAG: 73.0 MINUTES 4673 STROKES #1 AND 4600 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1656.9	HHP	614	IMPACT FORCE	1414
% SURFACE PRESSURE	59.6	HHP/sqin	5.21	JET VELOCITY	131

PRESSURE BREAKDOWN:

SURFACE	47.9		
STRING	1045.5		
BIT	1656.9		
ANNULUS	34.7		
TOTAL	2785.1	PUMP PRESSURE	2780.0
		% DIFFERENCE	0.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.00	HYDROSTATIC PRESSURE 4521.0
CIRCULATING:	ECD 10.08	CIRCULATING PRESSURE 4555.7
PULLING OUT:	TRIP MARGIN 0.15	ESTIMATED SWAB 69.5
EFFECTIVE MUD WEIGHT	9.85	BOTTOM HOLE PRESSURE 4451.5

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2700.0 AND TVD 2700.0

SPM 1 64 SPM 2 64 FLOW RATE 640

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	48	56	120	LAMINAR	0	56	8.0
DP/OH	0.398	693	38	106	LAMINAR	0	38	29.1
DP/CSG	0.411	296	37	105	LAMINAR	0	37	11.4
DP/RIS	1.325	86	11	87	LAMINAR	0	11	0.2
TOTAL VOLUME		1123			TOTAL PRESSURE DROP		48.7	

LAG: 73.8 MINUTES 4720 STROKES #1 AND 4720 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1699.9 HHP 634 IMPACT FORCE 1451
 % SURFACE PRESSURE 57.6 HHP/sqin 5.38 JET VELOCITY 132

PRESSURE BREAKDOWN:

SURFACE 50.4
 STRING 1114.4
 BIT 1699.9
 ANNULUS 48.7
 TOTAL 2913.4 PUMP PRESSURE 2950.0 % DIFFERENCE 1.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	10.10	HYDROSTATIC PRESSURE 4652.3
CIRCULATING: ECD	10.21	CIRCULATING PRESSURE 4701.0
PULLING OUT: TRIP MARGIN	0.21	ESTIMATED SWAB 97.4
EFFECTIVE MUD WEIGHT	9.89	BOTTOM HOLE PRESSURE 4555.0

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2800.0 AND TVD 2800.0

SPM 1 62 SPM 2 66 FLOW RATE 640

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	48	56	121	LAMINAR	0	56	8.1
DP/OH	0.398	733	38	110	LAMINAR	0	38	32.7
DP/CSG	0.411	296	37	109	LAMINAR	0	37	12.2
DP/RIS	1.325	86	11	94	LAMINAR	0	11	0.2
TOTAL VOLUME		1163	TOTAL PRESSURE DROP					53.1

LAG: 76.4 MINUTES 4735 STROKES #1 AND 5040 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1699.9 HHP 634 IMPACT FORCE 1451
% SURFACE PRESSURE 58.8 HHP/sqin 5.38 JET VELOCITY 132

PRESSURE BREAKDOWN:

SURFACE 48.2
STRING 1093.5
BIT 1699.9
ANNULUS 53.1
TOTAL 2894.8 PUMP PRESSURE 2890.0 % DIFFERENCE 0.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	10.10	HYDROSTATIC PRESSURE 4824.7
CIRCULATING: ECD	10.21	CIRCULATING PRESSURE 4877.8
PULLING OUT: TRIP MARGIN	0.22	ESTIMATED SWAB 106.2
EFFECTIVE MUD WEIGHT	9.88	BOTTOM HOLE PRESSURE 4718.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2900.0 AND TVD 2900.0

SPM 1 0 SPM 2 116 FLOW RATE 580

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	48	50	114	LAMINAR	0	50	6.9
DP/OH	0.398	773	35	100	LAMINAR	0	35	28.0
DP/CSG	0.411	296	34	100	LAMINAR	0	34	9.9
DP/RIS	1.325	86	10	83	LAMINAR	0	10	0.2

TOTAL VOLUME 1203 TOTAL PRESSURE DROP 44.9

LAG: 87.2 MINUTES 0 STROKES #1 AND 10110 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1382.3	HHP	468	IMPACT FORCE	1180
% SURFACE PRESSURE	56.2	HHP/sqin	3.97	JET VELOCITY	119

PRESSURE BREAKDOWN:

SURFACE	40.7				
STRING	946.8				
BIT	1382.3				
ANNULUS	44.9				
TOTAL	2414.8	PUMP PRESSURE	2460.0	% DIFFERENCE	1.8

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 10.00	HYDROSTATIC PRESSURE 4947.5
CIRCULATING:	ECD 10.09	CIRCULATING PRESSURE 4992.4
PULLING OUT:	TRIP MARGIN 0.18	ESTIMATED SWAB 89.9
	EFFECTIVE MUD WEIGHT 9.82	BOTTOM HOLE PRESSURE 4857.6

COMPUTER DATA LISTING : LIST A

INTERVAL All depth records (data not averaged)

DEPTH. Well depth, in metres

ROP. Rate of penetration, in metres/hour

WOB. Weight on bit, in thousands of pounds

RPM. Rotary speed, in revolutions per minute

MW Mud weight in, in pounds per gallon

"dc" Calculated "d" exponent, corrected
for variations in mud weight in,
using a correction factor of 10 ppg

HOURS. Cumulative bit hours. The number of
hours that the bit has actually been
"on bottom", recorded in decimal hours

TURNS. Cumulative bit turns. The number of turns
made by the bit, while actually "on bottom"

ICOST. Incremental cost per metre, calculated from
the rate of penetration, in A dollars

CCOST. Cumulative cost per metre, calculated from
the drilling time, in A dollars

PP Pore pressure gradient, in equivalent
pounds per gallon. The pressure exerted
by the fluid in the pore spaces of the formation

FG Fracture gradient, in equivalent pounds per
gallon. The pressure required to fracture
the formation, calculated by the DRILL
program using Eaton's equation

It is dependant on the pore pressure, the
overburden gradient and the matrix stress.
This value may be modified by leak-off
information

BIT NUMBER	1	IADC CODE	111	INTERVAL	65.0- 204.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	20 20 20
COST	3000.00	TRIP TIME	1.7	BIT RUN	139.0
TOTAL HOURS	5.80	TOTAL TURNS	33634	CONDITION	T2 B2 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
70.0	100.0	2.0	75	8.6	0.44	0.05	225	35	1840	8.6	11.5
75.0	80.0	2.0	75	8.6	0.47	0.11	506	44.28	941.99	8.6	11.5
80.0	68.0	2.0	75	8.6	0.50	0.19	837	52.09	645.35	8.6	11.5
85.0	40.0	2.0	75	8.6	0.59	0.31	1400	88.55	506.15	8.6	11.6
90.0	8.0	2.0	75	8.6	0.86	0.94	4212	442.75	493.47	8.6	11.6
95.0	78.0	5.0	93	8.6	0.59	1.00	4570	45.41	418.80	8.6	11.6
100.0	21.0	4.0	93	8.6	0.81	1.24	5898	168.67	383.06	8.6	11.6
105.0	10.0	6.0	95	8.6	1.02	1.74	8748	354.20	379.46	8.6	11.6
110.0	25.0	8.0	90	8.6	0.87	1.94	9828	141.68	353.04	8.6	11.7
115.0	25.0	8.0	90	8.6	0.87	2.14	10908	141.68	331.90	8.6	11.7
120.0	7.0	7.0	90	8.6	1.11	2.85	14766	506.00	347.73	8.6	11.7
125.0	10.0	7.0	90	8.6	1.03	3.35	17466	354.20	348.27	8.6	11.7
130.0	16.0	6.0	93	8.6	0.92	3.67	19209	221.38	338.51	8.6	11.7
135.0	15.0	6.0	95	8.6	0.94	4.00	21109	236.13	331.19	8.6	11.8
140.0	19.0	6.0	88	8.6	0.88	4.26	22499	186.42	321.54	8.6	11.8
145.0	17.0	5.0	95	8.6	0.89	4.56	24175	208.35	314.47	8.6	11.8
150.0	33.0	6.0	93	8.6	0.78	4.71	25021	107.33	302.28	8.6	11.8
155.0	39.0	7.0	109	8.6	0.80	4.84	25859	90.82	290.54	8.6	11.8
160.0	47.0	8.0	115	8.6	0.79	4.94	26593	75.36	279.21	8.6	11.9
165.0	44.0	8.0	134	8.6	0.83	5.06	27507	80.50	269.27	8.6	11.9
170.0	60.0	8.0	134	8.6	0.77	5.14	28177	59.03	259.26	8.6	11.9
175.0	70.0	7.0	134	8.6	0.72	5.21	28751	50.60	249.78	8.6	11.9
180.0	41.0	10.0	134	8.6	0.88	5.33	29732	86.39	242.67	8.6	11.9
185.0	50.0	14.0	138	8.6	0.90	5.43	30560	70.84	235.52	8.6	12.0
190.0	36.0	10.0	140	8.6	0.92	5.57	31726	98.39	230.03	8.6	12.0
195.0	76.0	8.0	139	8.6	0.73	5.64	32275	46.61	222.98	8.6	12.0
200.0	62.0	8.0	140	8.6	0.77	5.72	32952	57.13	216.83	8.6	12.0
204.0	50.0	9.0	142	8.6	0.84	5.80	33634	70.84	212.63	8.6	12.0

BIT NUMBER	2	IADC CODE	111	INTERVAL	204.0- 799.0
HTC 3AJ		SIZE	17.500	NOZZLES	20 20 20
COST	5000.00	TRIP TIME	3.9	BIT RUN	595.0
TOTAL HOURS	13.87	TOTAL TURNS	116516	CONDITION	T3 R3 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
205.0	200.0	3.0	100	8.7	0.41	0.01	30	18	18832	8.6	12.0
210.0	80.0	3.0	100	8.7	0.58	0.07	405	44	3175	8.6	12.1
215.0	190.0	3.0	100	8.7	0.42	0.09	563	19	1741	8.6	12.1
220.0	218.0	4.0	100	8.7	0.41	0.12	701	16	1202	8.6	12.1
225.0	220.0	4.0	100	8.7	0.41	0.14	837	16.10	919.42	8.6	12.1
230.0	50.0	3.0	100	8.7	0.67	0.24	1437	70.84	756.23	8.6	12.1
235.0	76.0	3.0	100	8.7	0.59	0.31	1832	46.61	641.78	8.6	12.1
240.0	47.0	4.0	100	8.7	0.71	0.41	2470	75.36	563.11	8.6	12.2
245.0	42.0	4.0	100	8.7	0.74	0.53	3184	84.33	504.72	8.6	12.2
250.0	50.0	4.0	100	8.7	0.70	0.63	3784	70.84	457.56	8.6	12.2
255.0	68.0	4.0	100	8.7	0.64	0.70	4225	52.09	417.81	8.6	12.2
260.0	49.0	5.0	100	8.7	0.73	0.81	4838	72.29	386.96	8.6	12.2
265.0	61.0	5.0	100	8.7	0.69	0.89	5329	58.07	360.00	8.6	12.3
270.0	95.0	2.0	100	8.7	0.52	0.94	5645	37.28	335.55	8.6	12.3
275.0	81.0	2.0	100	8.7	0.54	1.00	6016	43.73	315.00	8.6	12.3
280.0	75.0	5.0	100	8.7	0.65	1.07	6416	47.23	297.38	8.6	12.3
285.0	79.0	5.0	100	8.7	0.64	1.13	6795	44.84	281.79	8.6	12.3
290.0	75.0	10.0	140	8.7	0.81	1.20	7355	47.23	268.16	8.6	12.3
295.0	58.0	10.0	140	8.7	0.87	1.29	8079	61.07	256.78	8.6	12.4
300.0	44.0	9.0	140	8.7	0.92	1.40	9034	80.50	247.60	8.6	12.4
305.0	57.0	9.0	141	8.7	0.86	1.49	9776	62.14	238.42	8.6	12.4
310.0	60.0	12.0	135	8.7	0.89	1.57	10451	59.03	229.95	8.6	12.4
315.0	51.0	12.0	139	8.7	0.94	1.67	11269	69.45	222.72	8.6	12.4
320.0	50.0	14.0	135	8.7	0.96	1.77	12079	70.84	216.18	8.6	12.4
325.0	59.0	14.0	135	8.7	0.92	1.85	12765	60.03	209.73	8.6	12.5
330.0	61.0	15.0	138	8.7	0.93	1.93	13444	58.07	203.71	8.6	12.5
335.0	58.0	14.0	138	8.7	0.93	2.02	14158	61.07	198.26	8.6	12.5
340.0	55.0	14.0	140	8.7	0.95	2.11	14921	64.40	193.34	8.6	12.5
345.0	55.0	14.0	140	8.7	0.95	2.20	15685	64.40	188.77	8.6	12.5
350.0	53.0	15.0	148	8.7	0.99	2.30	16523	66.83	184.59	8.6	12.6
355.0	39.0	13.0	150	8.7	1.04	2.43	17677	90.82	181.49	8.6	12.6
360.0	42.0	17.0	150	8.7	1.08	2.54	18748	84.33	178.37	8.6	12.6
365.0	50.0	14.0	147	8.7	0.99	2.64	19630	70.84	175.03	8.6	12.6
370.0	84.0	17.0	148	8.7	0.90	2.70	20159	42.17	171.03	8.6	12.6
375.0	62.0	17.0	148	8.7	0.98	2.78	20875	57.13	167.70	8.6	12.6
380.0	43.0	22.0	150	8.7	1.14	2.90	21921	82.37	165.28	8.6	12.7
385.0	51.0	22.0	150	8.7	1.09	3.00	22804	69.45	162.63	8.6	12.7
390.0	47.0	25.0	148	8.7	1.15	3.11	23748	75.36	160.28	8.6	12.7
395.0	45.0	25.0	148	8.7	1.16	3.22	24735	78.71	158.15	8.6	12.7
400.0	60.0	25.0	149	8.7	1.08	3.30	25480	59.03	155.62	8.6	12.7
405.0	40.0	25.0	149	8.7	1.19	3.42	26597	88.55	153.95	8.6	12.7
410.0	49.0	25.0	149	8.7	1.14	3.53	27510	72.29	151.97	8.6	12.8
415.0	38.0	25.0	149	8.7	1.21	3.66	28686	93.21	150.58	8.6	12.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
420.0	30.0	21.0	148	8.7	1.22	3.83	30166	118.07	149.83	8.6	12.8
425.0	28.0	21.0	148	8.7	1.24	4.00	31752	126.50	149.30	8.6	12.8
430.0	34.0	22.0	150	8.7	1.20	4.15	33075	104.18	148.30	8.6	12.8
435.0	31.0	22.0	150	8.7	1.23	4.31	34527	114.26	147.56	8.6	12.8
440.0	45.0	22.0	149	8.7	1.12	4.42	35520	78.71	146.10	8.6	12.9
445.0	56.0	22.0	149	8.7	1.06	4.51	36318	63.25	144.38	8.6	12.9
450.0	91.0	22.0	149	8.7	0.93	4.57	36810	38.92	142.24	8.6	12.9
455.0	50.0	22.0	149	8.7	1.10	4.67	37704	70.84	140.82	8.6	12.9
460.0	90.0	20.0	149	8.7	0.91	4.72	38200	39.36	138.84	8.6	12.9
465.0	85.0	20.0	149	8.7	0.93	4.78	38726	41.67	136.98	8.6	12.9
470.0	89.0	23.0	149	8.7	0.95	4.84	39228	39.80	135.15	8.6	12.9
475.0	58.0	23.0	149	8.7	1.07	4.92	39999	61.07	133.78	8.6	13.0
480.0	110.0	25.0	149	8.7	0.91	4.97	40405	32.20	131.94	8.6	13.0
485.0	125.0	25.0	149	8.7	0.87	5.01	40763	28.34	130.10	8.6	13.0
490.0	111.0	25.0	149	8.7	0.90	5.05	41166	31.91	128.38	8.6	13.0
495.0	111.0	25.0	149	8.7	0.90	5.10	41568	31.91	126.72	8.6	13.0
500.0	85.0	26.0	150	8.7	0.99	5.16	42098	41.67	125.29	8.6	13.0
505.0	108.0	26.0	150	8.7	0.92	5.20	42514	32.80	123.75	8.6	13.1
510.0	113.0	25.0	150	8.7	0.90	5.25	42913	31.35	122.24	8.6	13.1
515.0	77.0	25.0	150	8.7	1.01	5.31	43497	46.00	121.02	8.6	13.1
520.0	79.0	25.0	150	8.7	1.00	5.38	44067	44.84	119.81	8.6	13.1
525.0	57.0	25.0	150	8.7	1.10	5.46	44856	62.14	118.91	8.6	13.1
530.0	64.0	25.0	150	8.7	1.06	5.54	45559	55.34	117.94	8.6	13.1
535.0	45.0	28.0	150	8.7	1.20	5.65	46559	78.71	117.34	8.6	13.2
540.0	51.0	26.0	150	8.7	1.14	5.75	47442	69.45	116.63	8.6	13.2
545.0	65.0	26.0	150	8.7	1.07	5.83	48134	54.49	115.72	8.6	13.2
550.0	65.0	26.0	150	8.7	1.07	5.91	48826	54.49	114.84	8.6	13.2
555.0	71.0	26.0	150	8.7	1.04	5.98	49460	49.89	113.91	8.6	13.2
560.0	72.0	26.0	145	8.7	1.03	6.05	50064	49.19	113.00	8.6	13.2
565.0	66.0	26.0	145	8.7	1.05	6.12	50723	53.67	112.18	8.6	13.2
570.0	226.0	8.0	145	8.7	0.54	6.14	50916	15.67	110.86	8.6	13.3
575.0	184.0	8.0	145	8.7	0.59	6.17	51152	19.25	109.63	8.6	13.3
580.0	141.0	23.0	145	8.7	0.81	6.21	51461	25.12	108.50	8.6	13.3
585.0	176.0	23.0	145	8.7	0.75	6.23	51708	20.13	107.34	8.6	13.3
590.0	361.0	25.0	145	8.7	0.56	6.25	51828	9.81	106.08	8.6	13.3
595.0	137.0	13.0	135	8.7	0.70	6.29	52124	25.85	105.05	8.6	13.3
600.0	67.0	8.0	135	8.7	0.80	6.36	52729	52.87	104.40	8.6	13.3
605.0	64.0	8.0	135	8.7	0.81	6.44	53361	55.34	103.78	8.6	13.4
610.0	76.0	15.0	135	8.7	0.87	6.50	53894	46.61	103.08	8.6	13.4
615.0	66.0	13.0	135	8.7	0.88	6.58	54508	53.67	102.48	8.6	13.4
620.0	92.0	15.0	135	8.7	0.83	6.63	54948	38.50	101.71	8.6	13.4
625.0	48.0	15.0	135	8.7	0.99	6.74	55792	73.79	101.38	8.6	13.4
630.0	43.0	18.0	135	8.7	1.06	6.85	56734	82.37	101.15	8.6	13.4
635.0	33.0	18.0	135	8.7	1.13	7.01	57961	107.33	101.23	8.6	13.4
640.0	38.0	15.0	135	8.7	1.05	7.14	59027	93.21	101.13	8.6	13.5
645.0	37.0	18.0	145	8.7	1.12	7.27	60202	95.73	101.07	8.6	13.5
650.0	43.0	18.0	145	8.7	1.08	7.39	61214	82.37	100.86	8.6	13.5
655.0	40.0	18.0	145	8.7	1.10	7.51	62302	88.55	100.73	8.6	13.5
660.0	38.0	18.0	145	8.7	1.11	7.65	63446	93.21	100.64	8.6	13.5
665.0	26.0	25.0	145	8.7	1.31	7.84	65119	136.23	101.03	8.6	13.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
670.0	34.0	23.0	145	8.7	1.21	7.98	66399	104.18	101.06	8.6	13.5
675.0	28.0	28.0	145	8.7	1.32	8.16	67952	126.50	101.33	8.6	13.6
680.0	19.0	28.0	145	8.7	1.44	8.43	70242	186.42	102.23	8.6	13.6
685.0	27.0	28.0	145	8.7	1.33	8.61	71853	131.19	102.53	8.6	13.6
690.0	25.0	28.0	145	8.7	1.36	8.81	73593	141.68	102.93	8.6	13.6
695.0	22.0	28.0	145	8.7	1.39	9.04	75570	161.00	103.52	8.6	13.6
700.0	25.0	24.0	145	8.7	1.31	9.24	77310	141.68	103.91	8.6	13.6
705.0	23.0	24.0	145	8.7	1.33	9.46	79202	154.00	104.41	8.6	13.6
710.0	30.0	28.0	145	8.7	1.30	9.62	80652	118.07	104.54	8.6	13.7
715.0	34.0	28.0	145	8.7	1.27	9.77	81931	104.18	104.54	8.6	13.7
720.0	29.0	27.0	145	8.7	1.30	9.94	83431	122.14	104.71	8.6	13.7
725.0	33.0	21.0	145	8.7	1.19	10.09	84749	107.33	104.73	8.6	13.7
730.0	31.0	27.0	145	8.7	1.28	10.26	86152	114.26	104.83	8.6	13.7
735.0	25.0	29.0	145	8.7	1.37	10.46	87892	141.68	105.17	8.6	13.7
740.0	39.0	31.0	145	8.7	1.26	10.58	89008	90.82	105.04	8.6	13.7
745.0	35.0	31.0	145	8.7	1.29	10.73	90251	101.20	105.00	8.6	13.7
750.0	30.0	26.0	150	8.7	1.29	10.89	91751	118.07	105.12	8.6	13.8
755.0	20.0	26.0	150	8.7	1.40	11.14	94001	177.10	105.78	8.6	13.8
760.0	28.0	28.0	150	8.7	1.33	11.32	95608	126.50	105.96	8.6	13.8
765.0	26.0	22.0	150	8.7	1.28	11.51	97339	136.23	106.23	8.6	13.8
770.0	22.0	28.0	150	8.7	1.40	11.74	99384	161.00	106.72	8.6	13.8
775.0	15.0	28.0	142	8.7	1.50	12.07	102224	236.13	107.85	8.6	13.8
780.0	18.0	25.0	132	8.7	1.38	12.35	104424	196.78	108.62	8.6	13.8
785.0	16.0	25.0	132	8.7	1.42	12.66	106899	221.38	109.59	8.6	13.9
790.0	14.0	29.0	135	8.7	1.52	13.02	109792	253.00	110.81	8.6	13.9
795.0	15.0	29.0	135	8.7	1.50	13.36	112492	236.13	111.88	8.6	13.9
799.0	16.0	27.0	136	8.7	1.45	13.61	114532	221.38	112.61	8.6	13.9

BIT NUMBER	3	IADC CODE	114	INTERVAL	799.0- 1293.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	5.7	BIT RUN	494.0
TOTAL HOURS	21.11	TOTAL TURNS	162445	CONDITION	T3 B5 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
800.0	16.0	25.0	136	9.0	1.51	0.06	510	221	21711	8.6	13.9
801.0	40.0	25.0	135	9.0	1.23	0.09	713	89	10900	8.6	13.9
802.0	25.0	25.0	135	9.0	1.38	0.13	1037	142	7314	8.6	13.9
803.0	19.0	25.0	135	9.0	1.46	0.18	1463	186	5532	8.6	13.9
804.0	25.0	25.0	135	9.0	1.38	0.22	1787	142	4454	8.6	13.9
805.0	19.0	25.0	135	9.0	1.46	0.27	2213	186	3743	8.6	13.9
806.0	10.0	20.0	125	9.0	1.53	0.37	2963	354	3259	8.6	13.9
807.0	18.0	20.0	125	9.0	1.37	0.43	3380	197	2876	8.6	13.9
808.0	18.0	25.0	125	9.0	1.45	0.48	3796	197	2578	8.6	13.9
809.0	14.0	25.0	125	9.0	1.53	0.56	4332	253	2346	8.6	13.9
810.0	17.0	25.0	125	9.0	1.47	0.61	4773	208	2151	8.6	13.9
811.0	18.0	25.0	125	9.0	1.45	0.67	5190	197	1988	8.6	13.9
812.0	19.0	25.0	125	9.0	1.43	0.72	5585	186	1850	8.6	13.9
813.0	21.0	25.0	125	9.0	1.40	0.77	5942	169	1730	8.6	13.9
814.0	18.0	25.0	125	9.0	1.45	0.83	6359	197	1628	8.6	13.9
815.0	15.0	33.0	125	9.0	1.63	0.89	6859	236	1541	8.6	13.9
816.0	18.0	33.0	125	9.0	1.57	0.95	7275	197	1462	8.6	13.9
817.0	15.0	33.0	125	9.0	1.63	1.01	7775	236	1393	8.6	13.9
818.0	16.0	33.0	125	9.0	1.61	1.08	8244	221	1332	8.6	13.9
819.0	17.0	33.0	125	9.0	1.59	1.14	8685	208	1276	8.6	13.9
820.0	14.0	33.0	125	9.0	1.65	1.21	9221	253	1227	8.6	13.9
821.0	14.0	33.0	125	9.0	1.65	1.28	9757	253	1183	8.6	13.9
822.0	12.0	33.0	125	9.0	1.70	1.36	10382	295	1144	8.6	13.9
823.0	20.0	33.0	125	9.0	1.53	1.41	10757	177	1104	8.6	14.0
824.0	16.0	33.0	125	9.0	1.61	1.47	11225	221	1068	8.6	14.0
825.0	21.0	30.0	130	9.0	1.49	1.52	11597	169	1034	8.6	14.0
826.0	21.0	30.0	130	9.0	1.49	1.57	11968	169	1002	8.6	14.0
827.0	15.0	30.0	130	9.0	1.60	1.64	12488	236.13	974.47	8.6	14.0
828.0	15.0	30.0	130	9.0	1.60	1.70	13008	236.13	949.01	8.6	14.0
829.0	16.0	30.0	130	9.0	1.58	1.77	13496	221.38	924.76	8.6	14.0
830.0	20.0	28.0	132	9.0	1.48	1.82	13892	177.10	900.64	8.6	14.0
831.0	19.0	28.0	132	9.0	1.50	1.87	14309	186.42	878.32	8.6	14.0
832.0	15.0	28.0	132	9.0	1.57	1.93	14837	236.13	858.86	8.6	14.0
833.0	23.0	28.0	132	9.0	1.44	1.98	15181	154.00	838.13	8.6	14.0
834.0	25.0	28.0	132	9.0	1.41	2.02	15498	141.68	818.23	8.6	14.0
835.0	17.0	31.0	132	9.0	1.58	2.08	15964	208.35	801.29	8.6	14.0
836.0	17.0	31.0	143	9.0	1.60	2.14	16468	208.35	785.26	8.6	14.0
837.0	18.0	31.0	143	8.9	1.60	2.19	16945	196.78	769.78	8.6	14.0
838.0	14.0	31.0	143	8.9	1.68	2.26	17558	253.00	756.53	8.6	14.0
839.0	15.0	31.0	143	8.9	1.66	2.33	18130	236.13	743.52	8.6	14.0
840.0	18.0	34.0	128	8.9	1.61	2.39	18556	196.78	730.18	8.6	14.0
841.0	13.0	34.0	128	8.9	1.72	2.46	19147	272.46	719.28	8.6	14.0
842.0	14.0	34.0	128	8.9	1.69	2.53	19696	253.00	708.44	8.6	14.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
843.0	16.0	34.0	128	8.9	1.65	2.60	20176	221.38	697.37	8.6	14.0
844.0	17.0	34.0	128	8.9	1.63	2.65	20628	208.35	686.50	8.6	14.0
845.0	18.0	31.0	123	8.9	1.55	2.71	21038	196.78	675.86	8.6	14.0
846.0	18.0	31.0	123	8.9	1.55	2.77	21448	196.78	665.66	8.6	14.0
847.0	20.0	31.0	123	8.9	1.52	2.82	21817	177.10	655.48	8.6	14.0
848.0	15.0	31.0	123	8.9	1.61	2.88	22309	236.15	646.93	8.6	14.0
849.0	16.0	31.0	123	8.9	1.59	2.95	22770	221.38	638.42	8.6	14.0
850.0	16.0	31.0	123	8.9	1.59	3.01	23231	221.38	630.24	8.6	14.0
851.0	13.0	33.0	136	8.9	1.72	3.08	23859	272.46	623.36	8.6	14.0
852.0	16.0	33.0	136	8.9	1.65	3.15	24369	221.38	615.77	8.6	14.0
853.0	13.0	33.0	136	8.9	1.72	3.22	24997	272.67	609.42	8.6	14.0
854.0	14.0	33.0	136	8.9	1.70	3.30	25580	253.00	602.94	8.6	14.0
855.0	18.0	32.0	110	8.9	1.53	3.35	25946	196.78	595.69	8.6	14.0
856.0	18.0	32.0	110	8.9	1.53	3.41	26313	196.78	588.69	8.6	14.0
857.0	14.0	32.0	110	8.9	1.61	3.48	26785	253.00	582.90	8.6	14.0
858.0	14.0	32.0	110	8.9	1.61	3.55	27256	253.00	577.31	8.6	14.0
859.0	14.0	32.0	110	8.9	1.61	3.62	27727	253.00	571.90	8.6	14.0
860.0	15.0	32.0	120	8.9	1.62	3.69	28207	236.13	566.40	8.6	14.0
861.0	14.0	32.0	120	8.9	1.64	3.76	28722	253.00	561.34	8.6	14.0
862.0	12.0	32.0	120	8.9	1.69	3.84	29322	295.17	557.12	8.6	14.1
863.0	12.0	32.0	120	8.9	1.69	3.93	29922	295.17	553.03	8.6	14.1
864.0	9.0	32.0	120	8.9	1.78	4.04	30722	393.56	550.57	8.6	14.1
865.0	10.0	31.0	122	8.9	1.74	4.14	31454	354.20	547.60	8.6	14.1
866.0	10.0	31.0	122	8.9	1.74	4.24	32186	354.20	544.71	8.6	14.1
867.0	10.0	31.0	122	8.9	1.74	4.34	32918	354.20	541.91	8.6	14.1
868.0	13.0	31.0	122	8.9	1.65	4.41	33481	272.46	538.00	8.6	14.1
869.0	11.0	31.0	122	8.9	1.71	4.50	34146	322.00	534.92	8.6	14.1
870.0	8.0	28.0	118	8.9	1.75	4.63	35031	442.75	533.62	8.6	14.1
871.0	7.0	28.0	118	8.9	1.79	4.77	36043	506.00	533.24	8.6	14.1
872.0	8.0	28.0	118	8.9	1.75	4.90	36928	442.75	532.00	8.6	14.1
873.0	13.0	28.0	118	8.9	1.60	4.97	37472	272.46	528.49	8.6	14.1
874.0	11.0	28.0	118	8.9	1.65	5.07	38116	322.00	525.74	8.6	14.1
875.0	12.0	34.0	106	8.9	1.68	5.15	38646	295.17	522.70	8.6	14.1
876.0	14.0	34.0	106	8.9	1.63	5.22	39100	253.00	519.20	8.6	14.1
877.0	13.0	34.0	106	8.9	1.65	5.30	39589	272.46	516.04	8.6	14.1
878.0	11.0	34.0	106	8.9	1.71	5.39	40168	322.00	513.58	8.6	14.1
879.0	13.0	34.0	106	8.9	1.65	5.46	40657	272.46	510.57	8.6	14.1
880.0	11.0	34.0	112	8.9	1.73	5.56	41268	322.00	508.24	8.6	14.1
881.0	21.0	34.0	112	8.9	1.51	5.60	41588	168.67	504.10	8.6	14.1
882.0	25.0	36.0	112	8.9	1.48	5.64	41857	141.68	499.73	8.6	14.1
883.0	20.0	36.0	112	8.9	1.55	5.69	42193	177.10	495.89	8.6	14.1
884.0	23.0	36.0	112	8.9	1.51	5.74	42485	154.00	491.87	8.6	14.1
885.0	24.0	36.0	125	8.9	1.53	5.78	42797	147.58	487.86	8.6	14.1
886.0	17.0	36.0	125	8.9	1.65	5.84	43238	208.35	484.65	8.6	14.1
887.0	20.0	36.0	125	8.9	1.59	5.89	43613	177.10	481.16	8.6	14.1
888.0	23.0	36.0	125	8.9	1.54	5.93	43940	154.00	477.48	8.6	14.1
889.0	20.0	36.0	125	8.9	1.59	5.98	44315	177.10	474.14	8.6	14.1
890.0	20.0	36.0	116	8.9	1.57	6.03	44663	177.10	470.88	8.6	14.1
891.0	21.0	36.0	116	8.9	1.55	6.08	44994	168.67	467.59	8.6	14.1
892.0	20.0	36.0	116	8.9	1.57	6.13	45342	177.10	464.47	8.6	14.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
893.0	17.0	36.0	116	8.9	1.62	6.19	45751	208.35	461.75	8.6	14.1
894.0	18.0	36.0	116	8.9	1.60	6.24	46138	196.78	458.96	8.6	14.1
895.0	19.0	36.0	122	8.9	1.60	6.30	46523	186.42	456.12	8.6	14.1
896.0	18.0	36.0	122	8.9	1.62	6.35	46930	196.78	453.44	8.6	14.1
897.0	17.0	36.0	122	8.9	1.64	6.41	47361	208.35	450.94	8.6	14.1
898.0	23.0	36.0	122	8.9	1.54	6.45	47679	154.00	447.94	8.6	14.1
899.0	21.0	36.0	122	8.9	1.57	6.50	48027	168.67	445.15	8.6	14.1
900.0	22.0	34.0	118	8.9	1.51	6.55	48349	161.00	442.34	8.6	14.1
901.0	24.0	34.0	118	8.9	1.49	6.59	48644	147.58	439.45	8.6	14.1
902.0	33.0	34.0	118	8.9	1.38	6.62	48859	107.33	436.22	8.6	14.2
903.0	23.0	34.0	118	8.9	1.50	6.66	49167	154.00	433.51	8.6	14.2
904.0	26.0	34.0	118	8.9	1.46	6.70	49439	136.23	430.68	8.6	14.2
905.0	33.0	31.0	112	8.9	1.33	6.73	49643	107.33	427.63	8.6	14.2
906.0	23.0	31.0	112	8.9	1.44	6.77	49935	154.00	425.07	8.6	14.2
907.0	22.0	31.0	112	8.9	1.46	6.82	50240	161.00	422.63	8.6	14.2
908.0	25.0	36.0	112	8.9	1.48	6.86	50509	141.68	420.05	8.6	14.2
909.0	30.0	36.0	112	8.9	1.42	6.89	50733	118.07	417.30	8.6	14.2
910.0	34.0	35.0	129	8.9	1.41	6.92	50961	104.18	414.48	8.6	14.2
911.0	21.0	35.0	129	8.9	1.57	6.97	51329	168.67	412.29	8.6	14.2
912.0	17.0	35.0	129	8.9	1.64	7.03	51784	208.35	410.48	8.6	14.2
913.0	22.0	35.0	129	8.9	1.56	7.07	52136	161.00	408.29	8.6	14.2
914.0	24.0	35.0	129	8.9	1.53	7.12	52459	147.58	406.03	8.6	14.2
915.0	20.0	39.0	131	8.9	1.65	7.17	52852	177.10	404.05	8.6	14.2
916.0	18.0	39.0	131	8.9	1.68	7.22	53288	196.78	402.28	8.6	14.2
917.0	17.0	39.0	131	8.9	1.70	7.28	53751	208.35	400.64	8.6	14.2
918.0	15.0	39.0	131	8.9	1.75	7.35	54275	236.13	399.26	8.6	14.2
919.0	14.0	39.0	131	8.9	1.77	7.42	54836	253.00	398.04	8.6	14.2
920.0	20.0	26.0	146	8.9	1.50	7.47	55274	177.10	396.21	8.6	14.2
921.0	22.0	26.0	146	8.9	1.47	7.51	55672	161.00	394.28	8.6	14.2
922.0	18.0	26.0	146	8.9	1.53	7.57	56159	196.78	392.68	8.6	14.2
923.0	19.0	26.0	146	8.9	1.51	7.62	56620	186.42	391.01	8.6	14.2
924.0	25.0	26.0	146	8.9	1.43	7.66	56971	141.68	389.02	8.6	14.2
925.0	22.0	36.0	120	8.9	1.55	7.71	57298	161.00	387.21	8.6	14.2
926.0	18.0	36.0	120	8.9	1.61	7.76	57698	196.78	385.71	8.6	14.2
927.0	25.0	36.0	120	8.9	1.50	7.80	57986	141.68	383.60	8.6	14.2
928.0	30.0	36.0	120	8.9	1.44	7.84	58226	118.07	381.74	8.6	14.2
929.0	26.0	36.0	120	8.9	1.49	7.87	58503	136.23	379.86	8.6	14.2
930.0	25.0	34.0	149	8.9	1.55	7.91	58860	141.68	378.04	8.6	14.2
931.0	22.0	34.0	149	8.9	1.59	7.96	59267	161.00	376.39	8.6	14.2
932.0	23.0	34.0	149	8.9	1.58	8.00	59655	154.00	374.72	8.6	14.2
933.0	23.0	34.0	149	8.9	1.58	8.05	60044	154.00	373.07	8.6	14.2
934.0	23.0	34.0	149	8.9	1.58	8.09	60433	154.00	371.45	8.6	14.2
935.0	22.0	34.0	149	8.9	1.59	8.14	60839	161.00	369.90	8.6	14.2
936.0	17.0	34.0	140	8.9	1.66	8.19	61333	208.35	368.72	8.6	14.2
937.0	14.0	34.0	140	8.9	1.72	8.27	61933	253.00	367.89	8.6	14.2
938.0	11.0	34.0	140	8.9	1.80	8.36	62697	322.00	367.56	8.6	14.2
939.0	14.0	34.0	140	8.9	1.72	8.43	63297	253.00	366.74	8.6	14.2
940.0	18.0	32.0	111	8.9	1.53	8.48	63667	196.78	365.53	8.6	14.2
941.0	22.0	32.0	111	8.9	1.47	8.53	63970	161.00	364.09	8.6	14.2
942.0	13.0	32.0	111	8.9	1.64	8.61	64482	272.46	363.45	8.6	14.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
943.0	12.0	32.0	111	8.9	1.66	8.69	65037	295.17	362.98	8.6	14.2
944.0	12.0	32.0	111	8.9	1.66	8.77	65592	295.17	362.51	8.6	14.2
945.0	9.0	32.0	107	8.9	1.75	8.88	66305	393.56	362.72	8.6	14.3
946.0	9.0	32.0	107	8.9	1.75	9.00	67019	393.56	362.93	8.6	14.3
947.0	9.0	32.0	107	8.9	1.75	9.11	67732	393.56	363.14	8.6	14.3
948.0	10.0	32.0	107	8.9	1.71	9.21	68374	354.20	363.08	8.6	14.3
949.0	15.0	32.0	107	8.9	1.58	9.27	68802	236.13	362.23	8.6	14.3
950.0	13.0	32.0	107	8.9	1.63	9.35	69296	272.46	361.64	8.6	14.3
951.0	12.0	36.0	120	8.9	1.75	9.43	69896	295.17	361.20	8.6	14.3
952.0	12.0	36.0	120	8.9	1.75	9.52	70496	295.17	360.77	8.6	14.3
953.0	10.0	36.0	120	8.9	1.81	9.62	71216	354.20	360.73	8.6	14.3
954.0	12.0	36.0	140	8.9	1.80	9.70	71916	295.17	360.30	8.6	14.3
955.0	14.0	37.0	123	8.9	1.72	9.77	72443	253.00	359.62	8.6	14.3
956.0	13.0	37.0	123	8.9	1.75	9.85	73011	272.48	359.06	8.6	14.3
957.0	17.0	37.0	123	8.9	1.65	9.91	73445	208.35	358.11	8.6	14.3
958.0	16.0	37.0	123	8.9	1.68	9.97	73906	221.38	357.25	8.6	14.3
959.0	18.0	37.0	123	8.9	1.64	10.03	74316	196.78	356.24	8.6	14.3
960.0	26.0	38.0	131	8.9	1.54	10.06	74618	136.23	354.88	8.6	14.3
961.0	12.0	38.0	131	8.9	1.81	10.15	75273	295.17	354.51	8.6	14.3
962.0	12.0	38.0	131	8.9	1.81	10.23	75928	295.17	354.14	8.6	14.3
963.0	14.0	38.0	131	8.9	1.76	10.30	76490	253.00	353.53	8.6	14.3
964.0	17.0	38.0	131	8.9	1.69	10.36	76952	208.35	352.65	8.6	14.3
965.0	27.0	35.0	136	8.9	1.51	10.40	77254	131.19	351.31	8.6	14.3
966.0	17.0	35.0	136	8.9	1.66	10.46	77734	208.35	350.46	8.6	14.3
967.0	16.0	35.0	136	8.9	1.68	10.52	78244	221.38	349.69	8.6	14.3
968.0	27.0	35.0	136	8.9	1.51	10.56	78547	131.19	348.40	8.6	14.3
969.0	25.0	35.0	136	8.9	1.53	10.60	78873	141.68	347.18	8.6	14.3
970.0	25.0	35.0	136	8.9	1.53	10.64	79199	141.68	345.98	8.6	14.3
971.0	25.0	35.0	136	8.9	1.53	10.68	79526	141.68	344.79	8.6	14.3
972.0	31.0	35.0	136	8.9	1.46	10.71	79789	114.26	343.46	8.6	14.3
973.0	31.0	35.0	136	8.9	1.46	10.74	80052	114.26	342.14	8.6	14.3
974.0	38.0	35.0	136	8.9	1.39	10.77	80267	93.21	340.72	8.6	14.3
975.0	32.0	35.0	176	8.9	1.54	10.80	80597	110.69	339.41	8.6	14.3
976.0	32.0	35.0	176	8.9	1.54	10.83	80927	110.69	338.12	8.6	14.3
977.0	29.0	35.0	176	8.9	1.57	10.86	81291	122.14	336.91	8.6	14.3
978.0	48.0	35.0	176	8.9	1.40	10.88	81511	73.79	335.44	8.6	14.3
979.0	32.0	35.0	176	8.9	1.54	10.92	81841	110.69	334.19	8.6	14.3
980.0	28.0	35.0	176	8.9	1.58	10.95	82218	126.50	333.04	8.6	14.3
981.0	38.0	35.0	185	8.9	1.50	10.98	82510	93.21	331.72	8.6	14.3
982.0	49.0	35.0	185	8.9	1.41	11.00	82737	72.29	330.30	8.6	14.3
983.0	48.0	35.0	185	8.9	1.42	11.02	82968	73.79	328.91	8.6	14.3
984.0	38.0	35.0	185	8.9	1.50	11.05	83260	93.21	327.64	8.6	14.3
985.0	32.0	35.0	185	8.9	1.55	11.08	83607	110.69	326.47	8.6	14.3
986.0	29.0	39.0	154	8.9	1.57	11.11	83926	122.14	325.38	8.6	14.3
987.0	21.0	39.0	154	8.9	1.69	11.16	84366	168.67	324.54	8.6	14.3
988.0	29.0	39.0	154	8.9	1.57	11.19	84684	122.14	323.47	8.6	14.3
989.0	38.0	39.0	154	8.9	1.48	11.22	84927	93.21	322.26	8.6	14.3
990.0	31.0	34.0	154	8.9	1.49	11.25	85226	114.26	321.17	8.6	14.3
991.0	26.0	34.0	154	8.9	1.55	11.29	85581	136.23	320.21	8.6	14.3
992.0	34.0	34.0	154	8.9	1.46	11.32	85853	104.18	319.09	8.6	14.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
993.0	40.0	34.0	154	8.9	1.41	11.34	86084	88.55	317.90	8.6	14.4
994.0	21.0	34.0	154	8.9	1.62	11.39	86524	168.67	317.14	8.6	14.4
995.0	23.0	34.0	154	8.9	1.59	11.44	86925	154.00	316.30	8.6	14.4
996.0	27.0	34.0	154	8.9	1.53	11.47	87268	131.19	315.36	8.6	14.4
997.0	49.0	39.0	154	8.9	1.39	11.49	87456	72.29	314.14	8.6	14.4
998.0	22.0	39.0	154	8.9	1.67	11.54	87876	161.00	313.37	8.6	14.4
999.0	22.0	39.0	154	8.9	1.67	11.58	88296	161.00	312.60	8.6	14.4
1000.0	34.0	33.0	154	8.9	1.45	11.61	88568	104.18	311.57	8.6	14.4
1001.0	37.0	33.0	154	8.9	1.42	11.64	88818	95.73	310.50	8.6	14.4
1002.0	38.0	33.0	154	8.9	1.41	11.67	89061	93.21	309.43	8.6	14.4
1003.0	26.0	33.0	154	8.9	1.53	11.71	89416	136.23	308.58	8.6	14.4
1004.0	25.0	33.0	154	8.9	1.55	11.75	89786	141.68	307.77	8.6	14.4
1005.0	32.0	33.0	154	8.9	1.47	11.78	90075	110.69	306.81	8.6	14.4
1006.0	36.0	33.0	140	8.9	1.40	11.80	90308	98.39	305.80	8.6	14.4
1007.0	46.0	33.0	140	8.9	1.32	11.83	90491	77.00	304.70	8.6	14.4
1008.0	47.0	33.0	140	8.9	1.31	11.85	90669	75.36	303.60	8.6	14.4
1009.0	54.0	33.0	140	8.9	1.26	11.87	90825	65.59	302.47	8.6	14.4
1010.0	33.0	30.0	150	8.9	1.41	11.90	91098	107.33	301.55	8.6	14.4
1011.0	56.0	30.0	150	8.9	1.24	11.91	91258	63.25	300.42	8.6	14.4
1012.0	56.0	30.0	150	8.9	1.24	11.93	91419	63.25	299.31	8.6	14.4
1013.0	56.0	30.0	150	8.9	1.24	11.95	91580	63.25	298.21	8.6	14.4
1014.0	56.0	30.0	150	8.9	1.24	11.97	91740	63.25	297.11	8.6	14.4
1015.0	54.0	30.0	150	8.9	1.25	11.99	91907	65.59	296.04	8.6	14.4
1016.0	51.0	30.0	150	8.9	1.27	12.01	92084	69.45	295.00	8.6	14.4
1017.0	52.0	30.0	150	8.9	1.26	12.03	92257	68.12	293.96	8.6	14.4
1018.0	45.0	30.0	150	8.9	1.31	12.05	92457	78.71	292.97	8.6	14.4
1019.0	45.0	30.0	150	8.9	1.31	12.07	92657	78.71	292.00	8.6	14.4
1020.0	54.0	30.0	150	8.9	1.25	12.09	92823	65.59	290.98	8.6	14.4
1021.0	50.0	30.0	152	8.9	1.28	12.11	93006	70.84	289.98	8.6	14.4
1022.0	51.0	30.0	152	8.9	1.27	12.13	93185	69.45	288.99	8.6	14.4
1023.0	38.0	30.0	152	8.9	1.37	12.15	93425	93.21	288.12	8.6	14.4
1024.0	34.0	30.0	152	8.9	1.40	12.18	93693	104.18	287.30	8.6	14.4
1025.0	62.0	30.0	152	8.9	1.21	12.20	93840	57.13	286.28	8.6	14.4
1026.0	59.0	30.0	152	8.9	1.23	12.22	93994	60.03	285.29	8.6	14.4
1027.0	50.0	32.0	153	8.9	1.31	12.24	94178	70.84	284.35	8.6	14.4
1028.0	38.0	32.0	153	8.9	1.40	12.26	94420	93.21	283.51	8.6	14.4
1029.0	18.0	32.0	153	8.9	1.64	12.32	94930	196.78	283.14	8.6	14.4
1030.0	54.0	30.0	152	8.9	1.26	12.34	95099	65.59	282.19	8.6	14.4
1031.0	56.0	30.0	152	8.9	1.24	12.35	95261	63.25	281.25	8.6	14.4
1032.0	49.0	30.0	152	8.9	1.29	12.38	95447	72.29	280.35	8.6	14.4
1033.0	47.0	30.0	152	8.9	1.30	12.40	95642	75.36	279.48	8.6	14.4
1034.0	31.0	30.0	152	8.9	1.43	12.43	95936	114.26	278.77	8.6	14.4
1035.0	47.0	35.0	151	8.9	1.36	12.45	96128	75.36	277.91	8.6	14.4
1036.0	56.0	35.0	151	8.9	1.30	12.47	96290	63.25	277.01	8.6	14.4
1037.0	38.0	35.0	151	8.9	1.43	12.49	96529	93.21	276.23	8.6	14.4
1038.0	54.0	35.0	151	8.9	1.31	12.51	96696	65.59	275.35	8.6	14.5
1039.0	69.0	35.0	151	8.9	1.23	12.53	96828	51.33	274.42	8.6	14.5
1040.0	44.0	34.0	150	8.9	1.36	12.55	97032	80.50	273.61	8.6	14.5
1041.0	59.0	34.0	150	8.9	1.27	12.57	97185	60.03	272.73	8.6	14.5
1042.0	62.0	34.0	150	8.9	1.25	12.58	97330	57.13	271.85	8.6	14.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1043.0	52.0	34.0	150	8.9	1.31	12.60	97503	68.12	271.01	8.6	14.5
1044.0	59.0	34.0	150	8.9	1.27	12.62	97656	60.03	270.15	8.6	14.5
1045.0	63.0	34.0	150	8.9	1.25	12.64	97798	56.22	269.28	8.6	14.5
1046.0	38.0	34.0	150	8.9	1.41	12.66	98035	93.21	268.57	8.6	14.5
1047.0	40.0	34.0	150	8.9	1.40	12.69	98260	88.55	267.84	8.6	14.5
1048.0	47.0	34.0	150	8.9	1.34	12.71	98452	75.36	267.07	8.6	14.5
1049.0	40.0	34.0	150	8.9	1.40	12.73	98677	88.55	266.35	8.6	14.5
1050.0	59.0	36.0	155	8.9	1.30	12.75	98834	60.03	265.53	8.6	14.5
1051.0	38.0	36.0	155	8.9	1.45	12.78	99079	93.21	264.85	8.6	14.5
1052.0	48.0	36.0	155	8.9	1.37	12.80	99273	73.79	264.09	8.6	14.5
1053.0	59.0	36.0	155	8.9	1.30	12.81	99431	60.03	263.29	8.6	14.5
1054.0	56.0	36.0	155	8.9	1.32	12.83	99597	63.25	262.50	8.6	14.5
1055.0	59.0	27.0	145	8.9	1.18	12.85	99744	60.03	261.71	8.6	14.5
1056.0	56.0	27.0	145	8.9	1.19	12.87	99899	63.25	260.94	8.6	14.5
1057.0	56.0	27.0	145	8.9	1.19	12.88	100055	63.25	260.18	8.6	14.5
1058.0	33.0	27.0	145	8.9	1.36	12.91	100318	107.33	259.59	8.6	14.5
1059.0	59.0	27.0	145	8.9	1.18	12.93	100466	60.03	258.82	8.6	14.5
1060.0	51.0	27.0	145	8.9	1.22	12.95	100636	69.45	258.09	8.6	14.5
1061.0	51.0	27.0	145	8.9	1.22	12.97	100807	69.45	257.37	8.6	14.5
1062.0	59.0	27.0	145	8.9	1.18	12.99	100955	60.03	256.62	8.6	14.5
1063.0	62.0	27.0	145	8.9	1.16	13.00	101095	57.13	255.87	8.6	14.5
1064.0	34.0	27.0	145	8.9	1.35	13.03	101351	104.18	255.29	8.6	14.5
1065.0	45.0	27.0	146	8.9	1.26	13.06	101545	78.71	254.63	8.6	14.5
1066.0	54.0	27.0	146	8.9	1.21	13.07	101708	65.59	253.92	8.6	14.5
1067.0	40.0	27.0	146	8.9	1.30	13.10	101927	88.55	253.30	8.6	14.5
1068.0	48.0	27.0	146	8.9	1.24	13.12	102109	73.79	252.64	8.6	14.5
1069.0	33.0	27.0	146	8.9	1.36	13.15	102375	107.33	252.10	8.6	14.5
1070.0	25.0	35.0	148	8.9	1.56	13.19	102730	141.68	251.69	8.6	14.5
1071.0	38.0	35.0	148	8.9	1.42	13.22	102963	93.21	251.11	8.6	14.5
1072.0	40.0	35.0	148	8.9	1.40	13.24	103185	88.55	250.51	8.6	14.5
1073.0	49.0	35.0	148	8.9	1.34	13.26	103367	72.29	249.86	8.6	14.5
1074.0	73.0	35.0	148	8.9	1.20	13.28	103488	48.52	249.13	8.6	14.5
1075.0	43.0	34.0	145	8.9	1.36	13.30	103691	82.37	248.53	8.6	14.5
1076.0	34.0	34.0	145	8.9	1.44	13.33	103947	104.18	248.01	8.6	14.5
1077.0	48.0	34.0	145	8.9	1.32	13.35	104128	73.79	247.38	8.6	14.5
1078.0	44.0	34.0	145	8.9	1.35	13.37	104326	80.50	246.78	8.6	14.5
1079.0	38.0	34.0	145	8.9	1.40	13.40	104554	93.21	246.23	8.6	14.5
1080.0	54.0	34.0	145	8.9	1.29	13.42	104716	65.59	245.59	8.6	14.5
1081.0	64.0	35.0	150	8.9	1.25	13.43	104856	55.34	244.92	8.6	14.5
1082.0	59.0	35.0	150	8.9	1.28	13.45	105009	60.03	244.26	8.6	14.5
1083.0	56.0	35.0	150	8.9	1.30	13.47	105169	63.25	243.62	8.6	14.5
1084.0	59.0	35.0	150	8.9	1.28	13.48	105322	60.03	242.98	8.6	14.6
1085.0	50.0	35.0	150	8.9	1.33	13.50	105502	70.84	242.38	8.6	14.6
1086.0	46.0	35.0	150	8.9	1.36	13.53	105698	77.00	241.80	8.6	14.6
1087.0	82.0	33.0	145	8.9	1.14	13.54	105804	43.20	241.11	8.6	14.6
1088.0	50.0	33.0	145	8.9	1.30	13.56	105978	70.84	240.52	8.6	14.6
1089.0	82.0	33.0	145	8.9	1.14	13.57	106084	43.20	239.84	8.6	14.6
1090.0	67.0	33.0	145	8.9	1.20	13.58	106214	52.87	239.20	8.6	14.6
1091.0	63.0	37.0	148	8.9	1.27	13.60	106355	56.22	238.57	8.6	14.6
1092.0	46.0	37.0	148	8.9	1.38	13.62	106548	77.00	238.02	8.6	14.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1093.0	59.0	37.0	148	8.9	1.30	13.64	106698	60.03	237.42	8.6	14.6
1094.0	76.0	37.0	148	8.9	1.21	13.65	106815	46.61	236.77	8.6	14.6
1095.0	76.0	37.0	148	8.9	1.21	13.67	106932	46.61	236.13	8.6	14.6
1096.0	35.0	36.0	145	8.9	1.45	13.69	107180	101.20	235.67	8.6	14.6
1097.0	72.0	36.0	145	8.9	1.21	13.71	107301	49.19	235.05	8.6	14.6
1098.0	63.0	36.0	145	8.9	1.26	13.72	107439	56.22	234.45	8.6	14.6
1099.0	64.0	36.0	145	8.9	1.25	13.74	107575	55.34	233.85	8.6	14.6
1100.0	62.0	36.0	145	8.9	1.26	13.76	107716	57.13	233.27	8.6	14.6
1101.0	32.0	36.0	145	8.9	1.48	13.79	107988	110.69	232.86	8.6	14.6
1102.0	142.0	36.0	145	8.9	0.98	13.79	108049	24.94	232.17	8.6	14.6
1103.0	63.0	36.0	145	8.9	1.26	13.81	108187	56.22	231.59	8.6	14.6
1104.0	59.0	36.0	145	8.9	1.28	13.83	108334	60.03	231.03	8.6	14.6
1105.0	38.0	36.0	145	8.9	1.43	13.85	108563	93.21	230.58	8.6	14.6
1106.0	35.0	36.0	145	8.9	1.45	13.88	108812	101.20	230.16	8.6	14.6
1107.0	44.0	35.0	143	8.9	1.36	13.90	109007	80.50	229.67	8.6	14.6
1108.0	47.0	35.0	143	8.9	1.34	13.93	109189	75.36	229.17	8.6	14.6
1109.0	69.0	35.0	143	8.9	1.21	13.94	109314	51.33	228.60	8.6	14.6
1110.0	47.0	32.0	144	8.9	1.31	13.96	109498	75.36	228.11	8.6	14.6
1111.0	59.0	32.0	144	8.9	1.23	13.98	109644	60.03	227.57	8.6	14.6
1112.0	37.0	32.0	144	8.9	1.38	14.01	109878	95.73	227.15	8.6	14.6
1113.0	49.0	32.0	144	8.9	1.29	14.03	110054	72.29	226.66	8.6	14.6
1114.0	63.0	32.0	144	8.9	1.21	14.04	110191	56.22	226.11	8.6	14.6
1115.0	59.0	33.0	145	8.9	1.25	14.06	110338	60.03	225.59	8.6	14.6
1116.0	50.0	33.0	145	8.9	1.30	14.08	110512	70.84	225.10	8.6	14.6
1117.0	45.0	33.0	145	8.9	1.33	14.10	110706	78.71	224.64	8.6	14.6
1118.0	59.0	33.0	145	8.9	1.25	14.12	110853	60.03	224.12	8.6	14.6
1119.0	45.0	33.0	145	8.9	1.33	14.14	111047	78.71	223.67	8.6	14.6
1120.0	42.0	36.0	135	8.9	1.37	14.16	111239	84.33	223.24	8.6	14.6
1121.0	43.0	36.0	135	8.9	1.36	14.19	111428	82.37	222.80	8.6	14.6
1122.0	51.0	36.0	135	8.9	1.30	14.21	111587	69.45	222.32	8.6	14.6
1123.0	56.0	36.0	135	8.9	1.27	14.22	111731	63.25	221.83	8.6	14.6
1124.0	27.0	36.0	135	8.9	1.52	14.26	112031	131.19	221.55	8.6	14.6
1125.0	50.0	25.0	143	8.9	1.20	14.28	112203	70.84	221.09	8.6	14.6
1126.0	45.0	25.0	143	8.9	1.23	14.30	112394	78.71	220.66	8.6	14.6
1127.0	52.0	25.0	143	8.9	1.19	14.32	112559	68.12	220.19	8.6	14.6
1128.0	52.0	25.0	143	8.9	1.19	14.34	112724	68.12	219.73	8.6	14.6
1129.0	54.0	25.0	143	8.9	1.18	14.36	112882	65.59	219.26	8.6	14.6
1130.0	49.0	25.0	143	8.9	1.20	14.38	113058	72.29	218.82	8.6	14.6
1131.0	50.0	30.0	130	8.9	1.23	14.40	113214	70.84	218.37	8.6	14.6
1132.0	41.0	30.0	130	8.9	1.29	14.43	113404	86.39	217.98	8.6	14.7
1133.0	56.0	30.0	130	8.9	1.19	14.44	113543	63.25	217.51	8.6	14.7
1134.0	56.0	30.0	130	8.9	1.19	14.46	113682	63.25	217.05	8.6	14.7
1135.0	50.0	30.0	130	8.9	1.23	14.48	113838	70.84	216.62	8.6	14.7
1136.0	51.0	30.0	130	8.9	1.22	14.50	113991	69.45	216.18	8.6	14.7
1137.0	56.0	30.0	130	8.9	1.19	14.52	114131	63.25	215.73	8.6	14.7
1138.0	62.0	30.0	130	8.9	1.16	14.54	114256	57.13	215.26	8.6	14.7
1139.0	50.0	30.0	130	8.9	1.23	14.56	114412	70.84	214.83	8.6	14.7
1140.0	46.0	29.0	130	8.9	1.24	14.58	114582	77.00	214.43	8.6	14.7
1141.0	64.0	29.0	130	8.9	1.14	14.59	114704	55.34	213.97	8.6	14.7
1142.0	51.0	29.0	130	8.9	1.21	14.61	114857	69.45	213.54	8.6	14.7

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1143.0	52.0	29.0	130	8.9	1.21	14.63	115007	68.12	213.12	8.6	14.7
1144.0	59.0	29.0	130	8.9	1.17	14.65	115139	60.03	212.68	8.6	14.7
1145.0	42.0	29.0	130	8.9	1.27	14.67	115325	84.33	212.31	8.6	14.7
1146.0	45.0	29.0	130	8.9	1.25	14.69	115498	78.71	211.92	8.6	14.7
1147.0	47.0	29.0	130	8.9	1.24	14.72	115664	75.36	211.53	8.6	14.7
1148.0	51.0	29.0	130	8.9	1.21	14.74	115817	69.45	211.12	8.6	14.7
1149.0	56.0	29.0	130	8.9	1.18	14.75	115956	63.25	210.70	8.6	14.7
1150.0	46.0	29.0	130	8.9	1.24	14.77	116126	77.00	210.32	8.6	14.7
1151.0	45.0	29.0	130	8.9	1.25	14.80	116299	78.71	209.94	8.6	14.7
1152.0	35.0	29.0	130	8.9	1.33	14.83	116522	101.20	209.64	8.6	14.7
1153.0	35.0	29.0	130	8.9	1.33	14.85	116745	101.20	209.33	8.6	14.7
1154.0	49.0	29.0	130	8.9	1.22	14.87	116904	72.29	208.94	8.6	14.7
1155.0	42.0	29.0	125	8.9	1.26	14.90	117083	84.33	208.59	8.6	14.7
1156.0	37.0	29.0	125	8.9	1.30	14.93	117285	95.73	208.28	8.6	14.7
1157.0	54.0	28.0	125	8.9	1.17	14.94	117424	65.59	207.88	8.6	14.7
1158.0	40.0	28.0	125	8.9	1.26	14.97	117612	88.55	207.55	8.6	14.7
1159.0	40.0	28.0	125	8.9	1.26	14.99	117799	88.55	207.22	8.6	14.7
1160.0	28.0	28.0	125	8.9	1.38	15.03	118067	126.50	206.99	8.6	14.7
1161.0	40.0	28.0	125	8.9	1.26	15.05	118255	88.55	206.67	8.6	14.7
1162.0	21.0	28.0	127	8.9	1.47	15.10	118617	168.67	206.56	8.6	14.7
1163.0	48.0	28.0	127	8.9	1.21	15.12	118776	73.79	206.20	8.6	14.7
1164.0	41.0	28.0	127	8.9	1.26	15.15	118962	86.39	205.87	8.6	14.7
1165.0	50.0	30.0	125	8.9	1.22	15.17	119112	70.84	205.50	8.6	14.7
1166.0	63.0	30.0	125	8.9	1.14	15.18	119231	56.22	205.09	8.6	14.7
1167.0	35.0	30.0	125	8.9	1.33	15.21	119445	101.20	204.81	8.6	14.7
1168.0	50.0	30.0	125	8.9	1.22	15.23	119595	70.84	204.45	8.6	14.7
1169.0	39.0	30.0	125	8.9	1.30	15.26	119788	90.82	204.14	8.6	14.7
1170.0	37.0	29.0	125	8.9	1.30	15.28	119990	95.73	203.85	8.6	14.7
1171.0	45.0	29.0	125	8.9	1.24	15.31	120157	78.71	203.51	8.6	14.7
1172.0	36.0	29.0	125	8.9	1.31	15.33	120365	98.39	203.23	8.6	14.7
1173.0	32.0	29.0	125	8.9	1.35	15.37	120600	110.69	202.98	8.6	14.7
1174.0	47.0	29.0	125	8.9	1.23	15.39	120759	75.36	202.64	8.6	14.7
1175.0	59.0	29.0	125	8.9	1.15	15.40	120886	60.03	202.26	8.6	14.7
1176.0	32.0	30.0	125	8.9	1.36	15.44	121121	110.69	202.02	8.6	14.7
1177.0	38.0	30.0	125	8.9	1.31	15.46	121318	93.21	201.73	8.6	14.7
1178.0	39.0	30.0	125	8.9	1.30	15.49	121510	90.82	201.44	8.6	14.7
1179.0	35.0	30.0	125	8.9	1.33	15.52	121725	101.20	201.18	8.6	14.7
1180.0	32.0	30.0	125	8.9	1.36	15.55	121959	110.69	200.94	8.6	14.7
1181.0	62.0	30.0	125	8.9	1.15	15.56	122080	57.13	200.56	8.6	14.8
1182.0	40.0	30.0	125	8.9	1.29	15.59	122268	88.55	200.27	8.6	14.8
1183.0	44.0	30.0	125	8.9	1.26	15.61	122438	80.50	199.96	8.6	14.8
1184.0	47.0	30.0	125	8.9	1.24	15.63	122598	75.36	199.63	8.6	14.8
1185.0	44.0	29.0	136	8.9	1.27	15.66	122783	80.50	199.32	8.6	14.8
1186.0	40.0	29.0	126	8.9	1.28	15.68	122972	88.55	199.04	8.6	14.8
1187.0	45.0	29.0	126	8.9	1.24	15.70	123140	78.71	198.73	8.6	14.8
1188.0	40.0	29.0	126	8.9	1.28	15.73	123329	88.55	198.45	8.6	14.8
1189.0	52.0	29.0	126	8.9	1.20	15.75	123474	68.12	198.11	8.6	14.8
1190.0	56.0	29.0	127	8.9	1.18	15.76	123611	63.25	197.77	8.6	14.8
1191.0	59.0	29.0	127	8.9	1.16	15.78	123740	60.03	197.41	8.6	14.8
1192.0	49.0	29.0	127	8.9	1.22	15.80	123895	72.29	197.10	8.6	14.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1193.0	35.0	29.0	127	8.9	1.32	15.83	124113	101.20	196.85	8.6	14.8
1194.0	45.0	29.0	127	8.9	1.24	15.85	124282	78.71	196.55	8.6	14.8
1195.0	45.0	29.0	127	8.9	1.24	15.87	124452	78.71	196.26	8.6	14.8
1196.0	40.0	29.0	127	8.9	1.28	15.90	124642	88.55	195.99	8.6	14.8
1197.0	35.0	29.0	127	8.9	1.32	15.93	124860	101.20	195.75	8.6	14.8
1198.0	48.0	29.0	127	8.9	1.22	15.95	125019	73.79	195.44	8.6	14.8
1199.0	39.0	29.0	127	8.9	1.29	15.97	125214	90.82	195.18	8.6	14.8
1200.0	36.0	29.0	127	8.9	1.31	16.00	125426	98.39	194.94	8.6	14.8
1201.0	44.0	29.0	127	8.9	1.25	16.03	125599	80.50	194.65	8.6	14.8
1202.0	33.0	29.0	127	8.9	1.34	16.06	125830	107.33	194.44	8.6	14.8
1203.0	38.0	29.0	127	8.9	1.30	16.08	126030	93.21	194.19	8.6	14.8
1204.0	40.0	29.0	127	8.9	1.28	16.11	126221	88.55	193.93	8.6	14.8
1205.0	34.0	28.0	125	8.9	1.31	16.14	126441	104.18	193.70	8.6	14.8
1206.0	34.0	28.0	125	8.9	1.31	16.17	126662	104.18	193.48	8.6	14.8
1207.0	38.0	28.0	125	8.9	1.28	16.19	126859	93.21	193.24	8.6	14.8
1208.0	36.0	28.0	125	8.9	1.30	16.22	127068	98.39	193.01	8.6	14.8
1209.0	38.0	28.0	125	8.9	1.28	16.25	127265	93.21	192.76	8.6	14.8
1210.0	29.0	28.0	125	8.9	1.36	16.28	127524	122.14	192.59	8.6	14.8
1211.0	42.0	28.0	125	8.9	1.25	16.30	127702	84.33	192.33	8.6	14.8
1212.0	36.0	28.0	125	8.9	1.30	16.33	127910	98.39	192.10	8.6	14.8
1213.0	36.0	28.0	125	8.9	1.30	16.36	128119	98.39	191.88	8.6	14.8
1214.0	42.0	28.0	125	8.9	1.25	16.38	128297	84.33	191.62	8.6	14.8
1215.0	36.0	28.0	125	8.9	1.30	16.41	128506	98.39	191.39	8.6	14.8
1216.0	51.0	29.0	125	8.9	1.20	16.43	128653	69.45	191.10	8.6	14.8
1217.0	42.0	29.0	125	8.9	1.26	16.45	128831	84.33	190.84	8.6	14.8
1218.0	47.0	29.0	125	8.9	1.23	16.48	128991	75.36	190.57	8.6	14.8
1219.0	32.0	31.0	123	8.9	1.37	16.51	129222	110.69	190.38	8.6	14.8
1220.0	44.0	28.0	124	8.9	1.23	16.53	129391	80.50	190.12	8.6	14.8
1221.0	43.0	28.0	124	8.9	1.24	16.55	129564	82.37	189.86	8.6	14.8
1222.0	32.0	28.0	124	8.9	1.33	16.58	129796	110.69	189.67	8.6	14.8
1223.0	28.0	28.0	124	8.9	1.37	16.62	130062	126.50	189.53	8.6	14.8
1224.0	42.0	28.0	124	8.9	1.25	16.64	130239	84.33	189.28	8.6	14.8
1225.0	40.0	28.0	124	8.9	1.26	16.67	130425	88.55	189.04	8.6	14.8
1226.0	41.0	28.0	124	8.9	1.25	16.69	130606	86.39	188.80	8.6	14.8
1227.0	29.0	28.0	124	8.9	1.36	16.73	130863	122.14	188.65	8.6	14.8
1228.0	36.0	28.0	124	8.9	1.29	16.76	131070	98.39	188.44	8.6	14.8
1229.0	38.0	28.0	124	8.9	1.28	16.78	131265	93.21	188.21	8.6	14.8
1230.0	40.0	28.0	128	8.9	1.27	16.81	131457	88.55	187.98	8.6	14.8
1231.0	44.0	28.0	128	8.9	1.24	16.83	131632	80.50	187.73	8.6	14.8
1232.0	42.0	28.0	128	8.9	1.26	16.85	131815	84.33	187.49	8.6	14.9
1233.0	38.0	28.0	128	8.9	1.29	16.88	132017	93.21	187.28	8.6	14.9
1234.0	39.0	28.0	128	8.9	1.28	16.91	132214	90.82	187.06	8.6	14.9
1235.0	41.0	28.0	128	8.9	1.26	16.93	132401	86.39	186.83	8.6	14.9
1236.0	41.0	28.0	128	8.9	1.26	16.95	132589	86.39	186.60	8.6	14.9
1237.0	41.0	28.0	128	8.9	1.26	16.98	132776	86.39	186.37	8.6	14.9
1238.0	48.0	28.0	128	8.9	1.21	17.00	132936	73.79	186.11	8.6	14.9
1239.0	47.0	28.0	128	8.9	1.22	17.02	133099	75.36	185.86	8.6	14.9
1240.0	52.0	27.0	124	8.9	1.17	17.04	133242	68.12	185.59	8.6	14.9
1241.0	36.0	27.0	124	8.9	1.28	17.07	133449	98.39	185.39	8.6	14.9
1242.0	47.0	27.0	124	8.9	1.20	17.09	133607	75.36	185.15	8.6	14.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1243.0	38.0	27.0	124	8.9	1.26	17.12	133803	93.21	184.94	8.6	14.9
1244.0	41.0	27.0	124	8.9	1.24	17.14	133985	86.39	184.72	8.6	14.9
1245.0	40.0	27.0	125	8.9	1.25	17.16	134172	88.55	184.50	8.6	14.9
1246.0	42.0	27.0	125	8.9	1.24	17.19	134351	84.33	184.28	8.6	14.9
1247.0	42.0	27.0	125	8.9	1.24	17.21	134529	84.33	184.05	8.6	14.9
1248.0	27.0	27.0	125	8.9	1.37	17.25	134807	131.19	183.94	8.6	14.9
1249.0	32.0	27.0	125	8.9	1.32	17.28	135041	110.69	183.77	8.6	14.9
1250.0	40.0	28.0	125	8.9	1.26	17.31	135229	88.55	183.56	8.6	14.9
1251.0	37.0	28.0	125	8.9	1.29	17.33	135432	95.73	183.37	8.6	14.9
1252.0	36.0	28.0	125	8.9	1.30	17.36	135640	98.39	183.18	8.6	14.9
1253.0	40.0	28.0	125	8.9	1.26	17.39	135827	88.55	182.97	8.6	14.9
1254.0	44.0	28.0	125	8.9	1.23	17.41	135998	80.50	182.75	8.6	14.9
1255.0	42.0	30.0	124	8.9	1.27	17.43	136175	84.33	182.53	8.6	14.9
1256.0	42.0	30.0	124	8.9	1.27	17.46	136352	84.33	182.32	8.6	14.9
1257.0	42.0	30.0	124	8.9	1.27	17.48	136529	84.33	182.10	8.6	14.9
1258.0	40.0	30.0	124	8.9	1.29	17.50	136715	88.55	181.90	8.6	14.9
1259.0	38.0	30.0	124	8.9	1.30	17.53	136911	93.21	181.71	8.6	14.9
1260.0	35.0	27.0	121	8.9	1.28	17.56	137119	101.20	181.53	8.6	14.9
1261.0	44.0	27.0	121	8.9	1.21	17.58	137284	80.50	181.31	8.6	14.9
1262.0	40.0	27.0	121	8.9	1.24	17.61	137465	88.55	181.11	8.6	14.9
1263.0	43.0	27.0	121	8.9	1.22	17.63	137634	82.37	180.90	8.6	14.9
1264.0	25.0	27.0	121	8.9	1.39	17.67	137924	141.68	180.82	8.6	14.9
1265.0	29.0	30.0	120	8.9	1.38	17.71	138173	122.14	180.69	8.6	14.9
1266.0	30.0	30.0	120	8.9	1.37	17.74	138413	118.07	180.56	8.6	14.9
1267.0	25.0	30.0	120	8.9	1.43	17.78	138701	141.68	180.47	8.6	14.9
1268.0	25.0	30.0	120	8.9	1.43	17.82	138989	141.68	180.39	8.6	14.9
1269.0	25.0	30.0	120	8.9	1.43	17.86	139277	141.68	180.31	8.6	14.9
1270.0	28.0	26.0	128	8.9	1.35	17.89	139551	126.50	180.19	8.6	14.9
1271.0	28.0	26.0	128	8.9	1.35	17.93	139825	126.50	180.08	8.6	14.9
1272.0	18.0	26.0	128	8.9	1.49	17.99	140252	196.78	180.11	8.6	14.9
1273.0	15.0	26.0	128	8.9	1.55	18.05	140764	236.13	180.23	8.6	14.9
1274.0	14.0	26.0	128	8.9	1.57	18.12	141312	253.00	180.39	8.6	14.9
1275.0	25.0	28.0	126	9.0	1.40	18.16	141615	141.68	180.30	8.6	14.9
1276.0	16.0	28.0	126	9.0	1.54	18.23	142087	221.38	180.39	8.6	14.9
1277.0	20.0	28.0	126	9.0	1.47	18.28	142465	177.10	180.38	8.6	14.9
1278.0	13.0	28.0	126	9.0	1.60	18.35	143047	272.46	180.58	8.6	14.9
1279.0	16.0	28.0	126	9.0	1.54	18.42	143519	221.38	180.66	8.6	14.9
1280.0	16.0	27.0	40	9.0	1.17	18.48	143669	221.38	180.75	8.6	14.9
1281.0	18.0	27.0	40	9.0	1.13	18.53	143803	196.78	180.78	8.6	14.9
1282.0	13.0	27.0	40	9.0	1.23	18.61	143987	272.46	180.97	8.6	14.9
1283.0	13.0	27.0	40	9.0	1.23	18.69	144172	272.46	181.16	8.6	14.9
1284.0	11.0	27.0	125	9.0	1.63	18.78	144854	322.00	181.45	8.6	15.0
1285.0	11.0	25.0	131	9.0	1.61	18.87	145568	322.00	181.74	8.6	15.0
1286.0	10.0	25.0	131	9.0	1.64	18.97	146354	354.20	182.09	8.6	15.0
1287.0	4.0	25.0	131	9.0	1.92	19.22	148319	885.50	183.53	8.6	15.0
1288.0	2.0	25.0	131	9.0	2.12	19.72	152249	1771	187	8.6	15.0
1289.0	3.0	21.0	123	10.1	1.69	20.05	154709	1181	189	8.6	15.0
1290.0	3.0	25.0	123	10.1	1.77	20.39	157169	1181	191	8.6	15.0
1291.0	4.0	12.0	123	10.1	1.41	20.64	159014	885.50	192.24	8.6	15.0
1292.0	4.2	13.0	120	10.1	1.42	20.87	160728	843.33	193.56	8.6	15.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1293.0	4.3	13.0	123	10.1	1.42	21.11	162445	823.72	194.84	8.6	15.0

BIT NUMBER	4	IADC CODE	114	INTERVAL	1293.0- 1391.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	6.1	BIT RUN	98.0
TOTAL HOURS	4.14	TOTAL TURNS	33204	CONDITION	T1 B3 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1294.0	8.0	21.0	135	10.1	1.46	0.13	1013	443	23349	8.6	15.0
1295.0	12.0	21.0	135	10.1	1.36	0.21	1688	295	11822	8.6	15.0
1296.0	15.0	21.0	135	10.1	1.30	0.28	2228	236	7960	8.6	15.0
1297.0	13.0	21.0	135	10.1	1.34	0.35	2851	272	6038	8.6	15.0
1298.0	14.0	21.0	135	10.1	1.32	0.42	3429	253	4881	8.6	15.0
1299.0	15.0	21.0	135	10.1	1.30	0.49	3969	236	4107	8.6	15.0
1300.0	16.0	20.0	135	10.1	1.27	0.55	4475	221	3552	8.6	15.0
1301.0	16.0	20.0	135	10.1	1.27	0.62	4982	221	3136	8.6	15.0
1302.0	14.5	20.0	135	10.1	1.29	0.68	5540	244	2814	8.6	15.0
1303.0	15.5	20.0	135	10.1	1.28	0.75	6063	229	2556	8.6	15.0
1304.0	15.5	20.0	135	10.1	1.28	0.81	6585	229	2344	8.6	15.0
1305.0	27.0	22.0	137	10.1	1.17	0.85	6890	131	2160	8.6	15.0
1306.0	23.0	22.0	137	10.1	1.21	0.89	7247	154	2005	8.6	15.0
1307.0	24.0	22.0	137	10.1	1.20	0.94	7590	148	1873	8.6	15.0
1308.0	33.0	22.0	137	10.1	1.12	0.97	7839	107	1755	8.6	15.0
1309.0	36.0	22.0	137	10.1	1.09	0.99	8067	98	1652	8.6	15.0
1310.0	29.0	28.0	132	10.1	1.22	1.03	8340	122	1562	8.6	15.0
1311.0	40.0	28.0	132	10.1	1.13	1.05	8538	89	1480	8.6	15.0
1312.0	44.0	28.0	132	10.1	1.10	1.08	8718	81	1406	8.6	15.0
1313.0	33.0	28.0	132	10.1	1.18	1.11	8958	107	1341	8.6	15.0
1314.0	38.0	28.0	132	10.1	1.14	1.13	9167	93	1282	8.6	15.0
1315.0	39.0	29.0	128	10.1	1.14	1.16	9364	91	1228	8.6	15.0
1316.0	29.0	29.0	128	10.1	1.22	1.19	9628	122	1180	8.6	15.0
1317.0	38.0	29.0	128	10.1	1.15	1.22	9831	93	1134	8.6	15.0
1318.0	33.0	29.0	128	10.1	1.18	1.25	10063	107	1093	8.6	15.0
1319.0	37.0	29.0	128	10.1	1.15	1.28	10271	96	1055	8.6	15.0
1320.0	37.0	26.0	132	10.1	1.13	1.30	10485	96	1019	8.6	15.0
1321.0	31.0	26.0	132	10.1	1.17	1.34	10740	114.26	986.98	8.6	15.0
1322.0	36.0	26.0	132	10.1	1.13	1.36	10960	98.39	956.34	8.6	15.0
1323.0	30.0	26.0	132	10.1	1.18	1.40	11224	118.07	928.39	8.6	15.0
1324.0	30.0	26.0	132	10.1	1.18	1.43	11488	118.07	902.25	8.6	15.0
1325.0	34.0	27.0	125	10.1	1.15	1.46	11709	104.18	877.31	8.6	15.0
1326.0	38.0	27.0	125	10.1	1.12	1.49	11906	93.21	853.55	8.6	15.0
1327.0	30.0	27.0	125	10.1	1.18	1.52	12156	118.07	831.92	8.6	15.0
1328.0	29.0	27.0	125	10.1	1.19	1.55	12415	122.14	811.64	8.6	15.0
1329.0	30.0	27.0	125	10.1	1.18	1.59	12665	118.07	792.38	8.6	15.0
1330.0	30.0	27.0	125	10.1	1.18	1.62	12915	118.07	774.15	8.6	15.0
1331.0	31.0	27.0	125	10.1	1.17	1.65	13157	114.26	756.79	8.6	15.0
1332.0	28.0	27.0	125	10.1	1.20	1.69	13425	126.50	740.62	8.6	15.0
1333.0	26.0	27.0	125	10.1	1.22	1.73	13713	136.23	725.51	8.6	15.0
1334.0	25.0	27.0	125	10.1	1.23	1.77	14013	141.68	711.27	8.6	15.0
1335.0	21.0	31.0	135	10.1	1.35	1.81	14399	168.67	698.36	8.6	15.1
1336.0	26.0	31.0	135	10.1	1.29	1.85	14710	136.23	685.28	8.6	15.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1337.0	23.0	31.0	135	10.1	1.32	1.90	15063	154.00	673.21	8.6	15.1
1338.0	24.0	31.0	135	10.1	1.31	1.94	15400	147.58	661.53	8.6	15.1
1339.0	30.0	31.0	135	10.1	1.25	1.97	15670	118.07	649.71	8.6	15.1
1340.0	30.0	33.0	138	10.1	1.28	2.00	15946	118.07	638.40	8.6	15.1
1341.0	25.0	33.0	138	10.1	1.33	2.04	16277	141.68	628.05	8.6	15.1
1342.0	36.0	33.0	138	10.1	1.23	2.07	16507	98.39	617.24	8.6	15.1
1343.0	40.0	33.0	138	10.1	1.20	2.10	16714	88.55	606.67	8.6	15.1
1344.0	37.0	33.0	138	10.1	1.22	2.12	16938	95.73	596.65	8.6	15.1
1345.0	36.0	62.0	128	10.1	1.48	2.15	17151	98.39	587.07	8.6	15.1
1346.0	36.0	62.0	128	10.1	1.48	2.18	17365	98.39	577.85	8.6	15.1
1347.0	25.0	62.0	128	10.1	1.60	2.22	17672	141.68	569.77	8.6	15.1
1348.0	16.0	62.0	128	10.1	1.76	2.28	18152	221.38	563.44	8.6	15.1
1349.0	18.0	62.0	128	10.1	1.72	2.34	18579	196.78	556.89	8.6	15.1
1350.0	16.0	35.0	127	10.1	1.46	2.40	19055	221.38	551.00	8.6	15.1
1351.0	16.0	35.0	127	10.1	1.46	2.46	19531	221.38	545.32	8.6	15.1
1352.0	10.0	35.0	127	10.1	1.60	2.56	20293	354.20	542.08	8.6	15.1
1353.0	14.0	35.0	127	10.1	1.50	2.63	20837	253.00	537.26	8.6	15.1
1354.0	16.0	35.0	127	10.1	1.46	2.70	21314	221.38	532.08	8.6	15.1
1355.0	19.0	28.0	134	10.1	1.34	2.75	21737	186.42	526.51	8.6	15.1
1356.0	18.0	28.0	134	10.1	1.35	2.80	22184	196.78	521.28	8.6	15.1
1357.0	18.0	28.0	134	10.1	1.35	2.86	22630	196.78	516.21	8.6	15.1
1358.0	25.0	28.0	134	10.1	1.26	2.90	22952	141.68	510.44	8.6	15.1
1359.0	22.0	28.0	134	10.1	1.30	2.95	23317	161.00	505.15	8.6	15.1
1360.0	19.0	32.0	133	10.1	1.39	3.00	23737	186.42	500.39	8.6	15.1
1361.0	34.0	32.0	133	10.1	1.22	3.03	23972	104.18	494.56	8.6	15.1
1362.0	52.0	32.0	133	10.1	1.10	3.05	24125	68.12	488.38	8.6	15.1
1363.0	27.0	32.0	133	10.1	1.29	3.08	24421	131.19	483.28	8.6	15.1
1364.0	27.0	32.0	133	10.1	1.29	3.12	24717	131.19	478.32	8.6	15.1
1365.0	26.0	32.0	133	10.1	1.30	3.16	25023	136.23	473.57	8.6	15.1
1366.0	26.0	32.0	133	10.1	1.30	3.20	25330	136.23	468.95	8.6	15.1
1367.0	32.0	32.0	133	10.1	1.24	3.23	25580	110.69	464.11	8.6	15.1
1368.0	29.0	32.0	133	10.1	1.27	3.26	25855	122.14	459.55	8.6	15.1
1369.0	32.0	32.0	133	10.1	1.24	3.29	26104	110.69	454.96	8.6	15.1
1370.0	32.0	34.0	130	10.1	1.25	3.33	26348	110.69	450.49	8.6	15.1
1371.0	52.0	34.0	130	10.1	1.11	3.35	26498	68.12	445.59	8.6	15.1
1372.0	27.0	34.0	130	10.1	1.30	3.38	26787	131.19	441.61	8.6	15.1
1373.0	16.0	34.0	130	10.1	1.46	3.44	27274	221.38	438.85	8.6	15.1
1374.0	20.0	34.0	130	10.1	1.39	3.49	27664	177.10	435.62	8.6	15.1
1375.0	22.0	31.0	135	10.1	1.34	3.54	28033	161.00	432.27	8.6	15.1
1376.0	18.0	31.0	135	10.1	1.39	3.60	28483	196.78	429.44	8.6	15.1
1377.0	18.0	31.0	135	10.1	1.39	3.65	28933	196.78	426.67	8.6	15.1
1378.0	21.0	31.0	135	10.1	1.35	3.70	29318	168.67	423.63	8.6	15.1
1379.0	19.0	31.0	135	10.1	1.38	3.75	29745	186.42	420.87	8.6	15.1
1380.0	33.0	26.0	150	10.1	1.19	3.78	30017	107.33	417.27	8.6	15.1
1381.0	18.0	26.0	150	10.1	1.36	3.84	30517	196.78	414.76	8.6	15.1
1382.0	23.0	26.0	150	9.9	1.32	3.88	30909	154.00	411.83	8.6	15.1
1383.0	25.0	26.0	150	9.9	1.29	3.92	31269	141.68	408.83	8.6	15.1
1384.0	20.0	26.0	150	9.9	1.35	3.97	31719	177.10	406.28	8.6	15.1
1385.0	26.0	28.0	148	9.9	1.30	4.01	32060	136.23	403.35	8.6	15.1
1386.0	40.0	28.0	148	9.9	1.18	4.03	32282	88.55	399.96	8.6	15.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1387.0	26.0	28.0	148	9.9	1.30	4.07	32624	136.23	397.16	8.6	15.1
1388.0	51.0	28.0	148	9.9	1.12	4.09	32798	69.45	393.71	8.6	15.1
1389.0	70.0	28.0	148	9.9	1.03	4.11	32925	50.60	390.13	8.6	15.1
1390.0	64.0	29.0	148	9.9	1.06	4.12	33063	55.34	386.68	8.6	15.1
1391.0	63.0	29.0	148	9.9	1.07	4.14	33204	56.22	383.31	8.6	15.2

BIT NUMBER	5	IADC CODE	4	INTERVAL	1392.0- 1404.4
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.1	BIT RUN	12.4
TOTAL HOURS	2.02	TOTAL TURNS	11091	CONDITION	T0 B0 G0.300

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1392.2	4.0	10.0	30	10.4	1.11	0.05	90	886	183917	8.6	15.2
1392.4	5.0	10.0	30	10.4	1.06	0.09	162	708	92312	8.6	15.2
1392.6	5.0	10.0	30	10.4	1.06	0.13	234	708	61778	8.6	15.2
1392.8	4.0	10.0	30	10.4	1.11	0.18	324	886	46555	8.6	15.2
1393.0	15.0	11.0	30	10.4	0.83	0.19	348	236	37291	8.6	15.2
1393.2	15.0	11.0	30	10.4	0.83	0.21	372	236	31115	8.6	15.2
1393.4	4.0	11.0	30	10.4	1.14	0.26	462	886	26797	8.6	15.2
1393.6	4.0	11.0	30	10.4	1.14	0.31	552	886	23558	8.6	15.2
1393.8	6.0	11.0	30	10.4	1.04	0.34	612	590	21006	8.6	15.2
1394.0	4.0	16.0	95	10.4	1.54	0.39	897	886	18994	8.6	15.2
1394.2	5.0	16.0	95	10.4	1.49	0.43	1125	708	17331	8.6	15.2
1394.4	5.0	16.0	95	10.4	1.49	0.47	1353	708	15946	8.6	15.2
1394.6	12.0	16.0	95	10.4	1.26	0.49	1448	295	14742	8.6	15.2
1394.8	7.0	15.0	95	10.4	1.38	0.52	1611	506	13725	8.6	15.2
1395.0	14.0	15.0	95	10.4	1.20	0.53	1692	253	12827	8.6	15.2
1395.2	10.5	15.0	95	10.4	1.28	0.55	1801	337	12047	8.6	15.2
1395.4	4.0	15.0	95	10.4	1.52	0.60	2086	886	11390	8.6	15.2
1395.6	7.6	15.0	95	10.4	1.36	0.62	2236	466	10783	8.6	15.2
1395.8	4.7	15.0	95	10.4	1.48	0.67	2478	754	10255	8.6	15.2
1396.0	4.7	15.0	95	10.4	1.48	0.71	2721	754	9780	8.6	15.2
1396.2	5.1	15.0	95	10.4	1.46	0.75	2944	695	9348	8.6	15.2
1396.4	5.5	15.0	95	10.4	1.44	0.79	3152	644	8952	8.6	15.2
1396.6	6.7	15.0	95	10.4	1.39	0.82	3322	529	8586	8.6	15.2
1396.8	9.0	15.0	95	10.4	1.31	0.84	3449	394	8244	8.6	15.2
1397.0	5.1	15.0	95	10.4	1.46	0.88	3672	695	7942	8.6	15.2
1397.2	3.7	15.0	95	10.4	1.54	0.93	3980	957	7674	8.6	15.2
1397.4	7.7	15.0	95	10.4	1.35	0.96	4128	460	7407	8.6	15.2
1397.6	7.6	15.0	95	10.4	1.36	0.98	4278	466	7159	8.6	15.2
1397.8	6.6	15.0	95	10.4	1.39	1.01	4451	537	6930	8.6	15.2
1398.0	7.1	15.0	95	10.4	1.37	1.04	4612	499	6716	8.6	15.2
1398.2	7.6	15.0	95	10.4	1.36	1.07	4762	466	6514	8.6	15.2
1398.4	5.7	15.0	95	10.4	1.43	1.10	4962	621	6330	8.6	15.2
1398.6	8.0	16.0	110	10.4	1.40	1.13	5127	443	6152	8.6	15.2
1398.8	3.8	16.0	110	10.4	1.59	1.18	5474	932	5998	8.6	15.2
1399.0	6.2	16.0	110	10.4	1.47	1.21	5687	571	5843	8.6	15.2
1399.2	5.4	16.0	110	10.4	1.50	1.25	5931	656	5699	8.6	15.2
1399.4	8.0	16.0	110	10.4	1.40	1.28	6096	443	5557	8.6	15.2
1399.6	14.6	16.0	110	10.4	1.25	1.29	6187	243	5417	8.6	15.2
1399.8	15.6	16.0	110	10.4	1.23	1.30	6271	227	5284	8.6	15.2
1400.0	11.2	16.0	110	10.4	1.32	1.32	6389	316	5160	8.6	15.2
1400.2	6.9	16.0	110	10.4	1.44	1.35	6580	513	5047	8.6	15.2
1400.4	6.7	16.0	110	10.4	1.45	1.38	6777	529	4939	8.6	15.2
1400.6	8.1	16.0	110	10.4	1.40	1.40	6940	437	4834	8.6	15.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1400.8	6.9	16.0	110	10.4	1.44	1.43	7132	513	4736	8.6	15.2
1401.0	7.6	15.0	110	10.4	1.39	1.46	7305	466	4641	8.6	15.2
1401.2	13.6	15.0	110	10.4	1.25	1.47	7402	260	4546	8.6	15.2
1401.4	4.9	17.0	110	10.4	1.55	1.51	7672	723	4465	8.6	15.2
1401.6	8.7	17.0	110	10.4	1.40	1.54	7824	407	4380	8.6	15.2
1401.8	3.4	17.0	110	10.4	1.65	1.60	8212	1042	4312	8.6	15.2
1402.0	2.6	17.0	110	10.4	1.72	1.67	8720	1362	4253	8.6	15.2
1402.2	5.2	17.0	110	10.4	1.54	1.71	8973	681	4183	8.6	15.2
1402.4	5.0	17.0	110	10.4	1.55	1.75	9237	708	4116	8.6	15.2
1402.6	3.7	16.0	110	10.4	1.60	1.80	9594	957	4057	8.6	15.2
1402.8	5.7	16.0	110	10.4	1.49	1.84	9826	621	3993	8.6	15.2
1403.0	8.2	16.0	110	10.4	1.40	1.86	9987	432	3928	8.6	15.2
1403.2	42.0	16.0	110	10.4	0.98	1.87	10018	84	3860	8.6	15.2
1403.4	16.4	16.0	110	10.4	1.22	1.88	10099	216	3796	8.6	15.2
1403.6	12.8	17.0	120	10.4	1.33	1.90	10211	277	3735	8.6	15.2
1403.8	12.4	17.0	120	10.4	1.34	1.91	10327	286	3676	8.6	15.2
1404.0	13.4	17.0	120	10.4	1.32	1.93	10435	264	3620	8.6	15.2
1404.2	14.0	17.0	120	10.4	1.30	1.94	10538	253	3564	8.6	15.2
1404.4	2.6	15.0	120	10.4	1.68	2.02	11091	1362	3529	8.6	15.2

BIT NUMBER	5	IADC CODE	4	INTERVAL	1405.0- 1418.2
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.2	BIT RUN	13.2
TOTAL HOURS	5.21	TOTAL TURNS	28361	CONDITION	T0 B0 G0.800

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1405.2	3.0	12.0	70	10.1	1.47	2.09	11371	1181	3360	8.6	15.2
1405.4	1.4	12.0	70	10.1	1.66	2.23	11971	2530	3348	8.6	15.2
1405.6	4.3	12.0	71	10.1	1.39	2.28	12169	824	3310	8.6	15.2
1405.8	4.9	12.0	71	10.1	1.36	2.32	12343	723	3273	8.6	15.2
1406.0	2.5	14.0	83	10.1	1.62	2.40	12741	1417	3246	8.6	15.2
1406.2	3.0	14.0	83	10.1	1.57	2.46	13073	1181	3217	8.6	15.2
1406.4	3.2	14.0	83	10.1	1.56	2.53	13385	1107	3188	8.6	15.2
1406.6	3.4	16.0	85	10.1	1.60	2.58	13685	1042	3159	8.6	15.2
1406.8	4.7	16.0	85	10.1	1.52	2.63	13902	754	3126	8.6	15.2
1407.0	6.7	16.0	85	10.1	1.42	2.66	14054	529	3091	8.6	15.2
1407.2	3.2	16.0	84	10.1	1.61	2.72	14369	1107	3065	8.6	15.2
1407.4	3.6	16.0	84	10.1	1.58	2.78	14649	984	3038	8.6	15.2
1407.6	3.0	16.0	96	10.1	1.67	2.84	15033	1181	3015	8.6	15.2
1407.8	4.7	16.0	96	10.1	1.55	2.88	15278	754	2986	8.6	15.2
1408.0	3.0	15.0	96	10.1	1.64	2.95	15662	1181	2963	8.6	15.2
1408.2	4.5	15.0	96	10.1	1.53	3.00	15918	787	2936	8.6	15.2
1408.4	4.9	15.0	96	10.1	1.51	3.04	16153	723	2909	8.6	15.2
1408.6	8.0	15.0	96	10.1	1.39	3.06	16297	443	2880	8.6	15.2
1408.8	3.0	15.0	96	10.1	1.64	3.13	16681	1181	2860	8.6	15.2
1409.0	3.8	15.0	96	10.1	1.58	3.18	16984	932	2837	8.6	15.2
1409.2	4.7	15.0	96	10.1	1.52	3.22	17229	754	2813	8.6	15.2
1409.4	2.9	15.0	96	10.1	1.65	3.29	17627	1221	2794	8.6	15.2
1409.6	1.9	15.0	96	10.1	1.76	3.40	18233	1864	2784	8.6	15.2
1409.8	1.5	15.0	96	10.1	1.82	3.53	19001	2361	2779	8.6	15.2
1410.0	1.6	17.0	94	10.1	1.85	3.66	19706	2214	2773	8.6	15.2
1410.2	1.3	17.0	94	10.1	1.91	3.81	20574	2725	2772	8.6	15.2
1410.4	1.4	17.0	94	10.1	1.89	3.95	21379	2530	2770	8.6	15.2
1410.6	2.4	15.0	90	10.1	1.68	4.04	21829	1476	2756	8.6	15.2
1410.8	3.0	15.0	90	10.1	1.62	4.10	22189	1181	2739	8.6	15.2
1411.0	4.6	15.0	90	10.1	1.51	4.15	22424	770	2718	8.6	15.2
1411.2	2.5	15.0	94	10.1	1.68	4.23	22875	1417	2705	8.6	15.2
1411.4	3.2	15.0	94	10.1	1.62	4.29	23228	1107	2688	8.6	15.2
1411.6	2.4	15.0	94	10.1	1.69	4.37	23698	1476	2676	8.6	15.2
1411.8	6.6	16.0	94	10.1	1.45	4.40	23869	537	2654	8.6	15.2
1412.0	6.6	16.0	94	10.1	1.45	4.43	24040	537	2633	8.6	15.2
1412.2	5.4	16.0	94	10.1	1.51	4.47	24249	656	2613	8.6	15.2
1412.4	10.2	16.0	94	10.1	1.34	4.49	24359	347	2591	8.6	15.2
1412.6	25.8	16.0	94	10.1	1.10	4.50	24403	137	2567	8.6	15.2
1412.8	10.5	16.0	94	10.1	1.33	4.52	24510	337	2546	8.6	15.2
1413.0	17.7	16.0	94	10.1	1.20	4.53	24574	200	2524	8.6	15.2
1413.2	36.0	16.0	94	10.1	1.01	4.53	24605	98	2501	8.6	15.2
1413.4	23.0	16.0	94	10.1	1.13	4.54	24654	154	2479	8.6	15.2
1413.6	54.0	16.0	94	10.1	0.90	4.55	24675	66	2456	8.6	15.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1413.8	23.0	16.0	94	10.1	1.13	4.55	24724	154	2435	8.6	15.2
1414.0	34.0	10.0	90	10.1	0.90	4.56	24756	104	2414	8.6	15.2
1414.2	25.0	10.0	90	10.1	0.97	4.57	24799	142	2394	8.6	15.2
1414.4	18.0	10.0	90	10.1	1.05	4.58	24859	197	2374	8.6	15.2
1414.6	23.0	10.0	90	10.1	0.99	4.59	24906	154	2354	8.6	15.2
1414.8	22.0	10.0	90	10.1	1.00	4.60	24955	161	2335	8.6	15.2
1415.0	21.0	10.0	90	10.1	1.01	4.61	25007	169	2316	8.6	15.2
1415.2	18.0	10.0	90	10.1	1.05	4.62	25067	197	2298	8.6	15.2
1415.4	13.0	10.0	90	10.1	1.13	4.63	25150	272	2281	8.6	15.2
1415.6	13.0	10.0	90	10.1	1.13	4.65	25233	272	2264	8.6	15.2
1415.8	5.8	10.0	90	10.1	1.31	4.68	25419	611	2250	8.6	15.2
1416.0	10.0	10.0	90	10.1	1.19	4.70	25527	354	2234	8.6	15.2
1416.2	6.7	10.0	90	10.1	1.28	4.73	25688	529	2220	8.6	15.2
1416.4	8.0	10.0	90	10.1	1.24	4.76	25823	443	2205	8.6	15.2
1416.6	13.0	10.0	90	10.1	1.13	4.77	25906	272	2190	8.6	15.2
1416.8	6.4	10.0	90	10.1	1.29	4.80	26075	553	2176	8.6	15.2
1417.0	5.3	14.0	93	10.1	1.46	4.84	26286	668	2164	8.6	15.2
1417.2	5.8	14.0	93	10.1	1.43	4.88	26478	611	2152	8.6	15.2
1417.4	5.3	14.0	93	10.1	1.46	4.91	26689	668	2140	8.6	15.2
1417.6	4.2	14.0	93	10.1	1.52	4.96	26954	843	2130	8.6	15.2
1417.8	4.4	14.0	93	10.1	1.50	5.01	27208	805	2120	8.6	15.2
1418.0	6.6	15.0	94	10.1	1.43	5.04	27379	537	2108	8.6	15.2
1418.2	4.3	15.0	94	10.1	1.54	5.08	27641	824	2098	8.6	15.2

BIT NUMBER	6	IADC CODE	114	INTERVAL	1418.0- 1495.0
HTC X3A		SIZE	12.250	NOZZLES	14 14 15
COST	1400.00	TRIP TIME	6.4	BIT RUN	77.0
TOTAL HOURS	4.60	TOTAL TURNS	36973	CONDITION	T7 B6 G0.750

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1419.0	28.0	14.0	126	10.1	1.02	0.04	270	127	24195	8.6	15.2
1420.0	16.0	16.0	150	10.1	1.23	0.10	833	221	12208	8.6	15.2
1421.0	17.0	16.0	150	10.1	1.21	0.16	1362	208	8208	8.6	15.2
1422.0	15.0	16.0	150	10.1	1.24	0.22	1962	236	6215	8.6	15.2
1423.0	13.0	16.0	150	10.1	1.28	0.30	2654	272	5027	8.6	15.2
1424.0	14.5	17.0	150	10.1	1.27	0.37	3275	244	4230	8.6	15.2
1425.0	37.0	14.0	140	10.1	0.98	0.40	3502	96	3639	8.6	15.2
1426.0	21.0	14.0	140	10.1	1.11	0.44	3902	169	3205	8.6	15.2
1427.0	17.0	14.0	140	10.1	1.16	0.50	4396	208	2872	8.6	15.2
1428.0	30.0	20.0	145	10.1	1.13	0.54	4686	118	2597	8.6	15.2
1429.0	34.0	20.0	145	10.1	1.10	0.57	4942	104	2370	8.6	15.2
1430.0	53.0	23.0	135	10.1	1.00	0.58	5095	67	2178	8.6	15.2
1431.0	52.0	23.0	135	10.1	1.01	0.60	5251	68	2016	8.6	15.2
1432.0	73.0	23.0	135	10.1	0.92	0.62	5361	49	1875	8.6	15.2
1433.0	28.0	23.0	135	10.1	1.17	0.65	5651	127	1759	8.6	15.2
1434.0	28.0	23.0	135	10.1	1.17	0.69	5940	127	1657	8.6	15.2
1435.0	47.0	23.0	135	10.1	1.03	0.71	6112	75	1564	8.6	15.2
1436.0	36.0	23.0	135	10.1	1.10	0.74	6337	98	1482	8.6	15.2
1437.0	20.0	23.0	135	10.1	1.26	0.79	6742	177	1414	8.6	15.2
1438.0	28.0	21.0	125	10.1	1.12	0.82	7010	127	1349	8.6	15.2
1439.0	32.0	21.0	125	10.1	1.09	0.86	7245	111	1290	8.6	15.2
1440.0	36.0	19.0	130	10.1	1.04	0.88	7461	98	1236	8.6	15.2
1441.0	26.0	19.0	130	10.1	1.12	0.92	7761	136	1188	8.6	15.2
1442.0	48.0	17.0	130	10.1	0.94	0.94	7924	74	1142	8.6	15.2
1443.0	43.0	17.0	130	10.1	0.97	0.97	8105	82	1100	8.6	15.2
1444.0	56.0	17.0	130	10.1	0.91	0.98	8244	63	1060	8.6	15.2
1445.0	23.0	19.0	130	10.1	1.15	1.03	8584	154	1026	8.6	15.2
1446.0	45.0	19.0	130	10.1	0.99	1.05	8757	78.71	992.29	8.6	15.2
1447.0	44.0	19.0	130	10.1	0.99	1.07	8934	80.50	960.85	8.6	15.2
1448.0	49.0	19.0	130	10.1	0.96	1.09	9093	72.29	931.23	8.6	15.2
1449.0	73.0	19.0	130	10.1	0.87	1.11	9200	48.52	902.76	8.6	15.3
1450.0	117.0	19.0	120	10.1	0.73	1.11	9262	30.27	875.49	8.6	15.3
1451.0	28.0	23.0	120	10.1	1.14	1.15	9519	126.50	852.79	8.6	15.3
1452.0	91.0	26.0	125	10.1	0.87	1.16	9601	38.92	828.86	8.6	15.3
1453.0	116.0	26.0	125	10.1	0.80	1.17	9666	30.53	806.05	8.6	15.3
1454.0	49.0	26.0	125	10.1	1.04	1.19	9819	72.29	785.67	8.6	15.3
1455.0	38.0	22.0	125	10.1	1.06	1.22	10016	93.21	766.95	8.6	15.3
1456.0	37.0	23.0	145	10.1	1.12	1.24	10252	95.73	749.29	8.6	15.3
1457.0	36.0	22.0	145	10.1	1.11	1.27	10493	98.39	732.60	8.6	15.3
1458.0	38.0	21.0	143	10.1	1.08	1.30	10719	93.21	716.61	8.6	15.3
1459.0	31.0	21.0	143	10.1	1.13	1.33	10996	114.26	701.92	8.6	15.3
1460.0	37.0	24.0	143	10.1	1.12	1.36	11228	95.73	687.49	8.6	15.3
1461.0	39.0	24.0	143	10.1	1.11	1.38	11448	90.82	673.61	8.6	15.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1462.0	32.0	26.0	136	10.1	1.17	1.41	11703	110.69	660.82	8.6	15.3
1463.0	29.0	25.0	136	10.1	1.19	1.45	11984	122.14	648.85	8.6	15.3
1464.0	37.0	19.0	140	10.1	1.05	1.48	12211	95.73	636.82	8.6	15.3
1465.0	40.0	20.0	142	10.1	1.05	1.50	12424	88.55	625.16	8.6	15.3
1466.0	46.0	20.0	142	10.1	1.02	1.52	12609	77.00	613.74	8.6	15.3
1467.0	19.0	20.0	142	10.1	1.24	1.57	13058	186.42	605.02	8.6	15.3
1468.0	50.0	17.0	142	10.1	0.96	1.59	13228	70.84	594.33	8.6	15.3
1469.0	40.0	17.0	142	10.1	1.01	1.62	13441	88.55	584.42	8.6	15.3
1470.0	52.0	19.0	142	10.1	0.97	1.64	13605	68.12	574.49	8.6	15.3
1471.0	42.0	19.0	142	10.1	1.03	1.66	13808	84.33	565.24	8.6	15.3
1472.0	45.0	19.0	142	10.1	1.01	1.68	13997	78.71	556.23	8.6	15.3
1473.0	34.0	19.0	142	10.1	1.08	1.71	14248	104.18	548.01	8.6	15.3
1474.0	36.0	14.0	144	10.1	0.99	1.74	14488	98.39	539.98	8.6	15.3
1475.0	13.0	14.0	144	10.1	1.23	1.82	15152	272.46	535.29	8.6	15.3
1476.0	13.0	20.0	144	10.1	1.34	1.90	15817	272.46	530.76	8.6	15.3
1477.0	40.0	20.0	144	10.1	1.05	1.92	16033	88.55	523.26	8.6	15.3
1478.0	20.0	17.0	140	10.1	1.17	1.97	16453	177.10	517.49	8.6	15.3
1479.0	23.0	17.0	140	10.1	1.14	2.01	16818	154.00	511.53	8.6	15.3
1480.0	24.0	19.0	142	10.1	1.16	2.06	17173	147.58	505.66	8.6	15.3
1481.0	10.0	19.0	142	10.1	1.38	2.16	18025	354.20	503.26	8.6	15.3
1482.0	11.0	19.0	142	10.1	1.36	2.25	18800	322.00	500.43	8.6	15.3
1483.0	6.0	19.0	142	10.1	1.51	2.41	20220	590.33	501.81	8.6	15.3
1484.0	9.0	19.0	133	10.1	1.39	2.52	21106	393.56	500.17	8.6	15.3
1485.0	5.0	22.0	135	10.1	1.60	2.72	22726	708.40	503.28	8.6	15.3
1486.0	3.5	20.0	135	10.1	1.65	3.01	25041	1012	511	8.6	15.3
1487.0	8.0	19.0	135	10.1	1.42	3.14	26053	442.75	509.77	8.6	15.3
1488.0	6.0	19.0	135	10.1	1.50	3.30	27403	590.33	510.92	8.6	15.3
1489.0	17.0	18.0	65	10.1	1.04	3.36	27633	208.35	506.66	8.6	15.3
1490.0	18.0	18.0	65	10.1	1.03	3.42	27849	196.78	502.36	8.6	15.3
1491.0	17.0	18.0	65	10.1	1.04	3.48	28079	208.35	498.33	8.6	15.3
1492.0	18.0	18.0	65	10.1	1.03	3.53	28295	196.78	494.26	8.6	15.3
1493.0	5.4	19.0	133	10.1	1.52	3.72	29773	655.93	496.41	8.6	15.3
1494.0	1.8	26.0	135	10.1	1.95	4.27	34273	1968	516	8.6	15.3
1495.0	3.0	40.0	135	10.1	2.05	4.60	36973	1181	524	8.6	15.3

BIT NUMBER	7	IADC CODE	217	INTERVAL	1495.0- 1585.0
HTC JD4		SIZE	12.250	NOZZLES	15 15 14
COST	1800.00	TRIP TIME	6.8	BIT RUN	90.0
TOTAL HOURS	7.22	TOTAL TURNS	49693	CONDITION	T7 B5 G0.313

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1496.0	28.0	26.0	130	10.1	1.20	0.04	279	127	26012	8.6	15.3
1497.0	28.0	26.0	130	10.1	1.20	0.07	557	127	13069	8.6	15.3
1498.0	30.0	27.0	130	10.1	1.19	0.10	817	118	8752	8.6	15.3
1499.0	34.0	27.0	130	10.1	1.16	0.13	1047	104	6590	8.6	15.3
1500.0	16.0	28.0	130	10.1	1.38	0.20	1534	221	5316	8.6	15.3
1501.0	16.0	28.0	130	10.1	1.38	0.26	2022	221	4467	8.6	15.3
1502.0	28.0	31.0	128	10.1	1.25	0.29	2296	127	3847	8.6	15.3
1503.0	9.0	32.0	127	10.1	1.59	0.41	3143	394	3415	8.6	15.3
1504.0	19.0	34.0	127	10.1	1.40	0.46	3544	186	3057	8.6	15.3
1505.0	9.0	34.0	127	10.1	1.62	0.57	4390	394	2790	8.6	15.3
1506.0	25.0	31.0	130	10.1	1.29	0.61	4702	142	2550	8.6	15.3
1507.0	23.0	27.0	122	10.1	1.25	0.65	5020	154	2350	8.6	15.3
1508.0	28.0	27.0	122	10.1	1.19	0.69	5282	127	2179	8.6	15.3
1509.0	24.0	27.0	122	10.1	1.24	0.73	5587	148	2034	8.6	15.4
1510.0	18.0	28.0	118	10.1	1.32	0.79	5980	197	1911	8.6	15.4
1511.0	14.0	27.0	115	10.1	1.37	0.86	6473	253	1808	8.6	15.4
1512.0	20.0	28.0	117	10.1	1.29	0.91	6824	177	1712	8.6	15.4
1513.0	16.0	27.0	117	10.1	1.33	0.97	7263	221	1629	8.6	15.4
1514.0	6.2	28.0	114	10.1	1.60	1.13	8366	571	1573	8.6	15.4
1515.0	14.0	28.0	114	10.1	1.38	1.20	8855	253	1507	8.6	15.4
1516.0	22.0	23.0	116	10.1	1.19	1.25	9171	161	1443	8.6	15.4
1517.0	56.0	25.0	116	10.1	0.97	1.27	9295	63	1380	8.6	15.4
1518.0	51.0	17.0	116	10.1	0.90	1.29	9432	69	1323	8.6	15.4
1519.0	56.0	17.0	116	10.1	0.88	1.30	9556	63	1271	8.6	15.4
1520.0	69.0	17.0	116	10.1	0.83	1.32	9657	51	1222	8.6	15.4
1521.0	72.0	25.0	115	10.1	0.90	1.33	9753	49	1177	8.6	15.4
1522.0	44.0	18.0	117	10.1	0.95	1.35	9912	81	1136	8.6	15.4
1523.0	59.0	18.0	117	10.1	0.88	1.37	10031	60	1098	8.6	15.4
1524.0	59.0	23.0	114	10.1	0.93	1.39	10147	60	1062	8.6	15.4
1525.0	45.0	24.0	114	10.1	1.01	1.41	10299	79	1029	8.6	15.4
1526.0	50.0	22.0	115	10.1	0.96	1.43	10437	70.84	998.50	8.6	15.4
1527.0	59.0	22.0	115	10.1	0.92	1.45	10554	60.03	969.17	8.6	15.4
1528.0	46.0	22.0	115	10.1	0.99	1.47	10704	77.00	942.14	8.6	15.4
1529.0	9.0	22.0	115	10.1	1.41	1.58	11471	393.56	926.00	8.6	15.4
1530.0	7.0	32.0	100	10.1	1.59	1.72	12328	506.00	914.00	8.6	15.4
1531.0	4.0	33.0	100	10.1	1.77	1.97	13828	885.50	913.21	8.6	15.4
1532.0	6.0	32.0	68	10.1	1.53	2.14	14508	590.33	904.49	8.6	15.4
1533.0	7.0	32.0	68	10.1	1.48	2.28	15091	506.00	894.00	8.6	15.4
1534.0	24.0	32.0	115	10.1	1.28	2.32	15378	147.58	874.86	8.6	15.4
1535.0	27.0	32.0	115	10.1	1.25	2.36	15634	131.19	856.27	8.6	15.4
1536.0	33.0	32.0	116	10.1	1.19	2.39	15845	107.33	838.00	8.6	15.4
1537.0	35.0	32.0	116	10.1	1.17	2.42	16044	101.20	820.46	8.6	15.4
1538.0	69.0	31.0	110	10.1	0.96	2.44	16139	51.33	802.57	8.6	15.4

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1539.0	56.0	31.0	110	10.1	1.01	2.45	16257	63.25	785.77	8.6	15.4
1540.0	28.0	30.0	109	10.1	1.20	2.49	16491	126.50	771.12	8.6	15.4
1541.0	10.0	30.0	109	10.1	1.49	2.59	17145	354.20	762.06	8.6	15.4
1542.0	5.0	30.0	109	10.1	1.68	2.79	18453	708.40	760.91	8.6	15.4
1543.0	8.0	30.0	109	10.1	1.55	2.91	19270	442.75	754.29	8.6	15.4
1544.0	19.0	30.0	115	10.1	1.32	2.97	19633	186.42	742.70	8.6	15.4
1545.0	12.0	30.0	115	10.1	1.45	3.05	20208	295.17	733.75	8.6	15.4
1546.0	5.6	31.0	114	10.1	1.68	3.23	21430	632.50	731.76	8.6	15.4
1547.0	5.0	33.0	114	10.1	1.74	3.43	22798	708.40	731.31	8.6	15.4
1548.0	6.7	33.0	114	10.1	1.66	3.58	23819	528.66	727.49	8.6	15.4
1549.0	19.0	27.0	116	10.1	1.29	3.63	24185	186.42	717.47	8.6	15.4
1550.0	59.0	19.0	116	10.1	0.89	3.65	24303	60.03	705.51	8.6	15.4
1551.0	49.0	17.0	116	10.1	0.91	3.67	24445	72.29	694.21	8.6	15.4
1552.0	51.0	15.0	116	10.1	0.87	3.69	24582	69.45	683.25	8.6	15.4
1553.0	69.0	28.0	116	10.1	0.94	3.70	24682	51.33	672.35	8.6	15.4
1554.0	51.0	30.0	114	10.1	1.04	3.72	24817	69.45	662.13	8.6	15.4
1555.0	96.0	30.0	114	10.1	0.86	3.73	24888	36.90	651.71	8.6	15.4
1556.0	44.0	28.0	113	10.1	1.06	3.75	25042	80.50	642.35	8.6	15.4
1557.0	28.0	32.0	114	10.1	1.23	3.79	25286	126.50	634.03	8.6	15.4
1558.0	30.0	27.0	142	10.1	1.22	3.82	25570	118.07	625.84	8.6	15.4
1559.0	67.0	20.0	140	10.1	0.92	3.84	25696	52.87	616.88	8.6	15.4
1560.0	56.0	23.0	133	10.1	0.98	3.86	25838	63.25	608.37	8.6	15.4
1561.0	59.0	27.0	133	10.1	1.01	3.87	25973	60.03	600.06	8.6	15.4
1562.0	59.0	27.0	133	10.1	1.01	3.89	26109	60.03	592.00	8.6	15.4
1563.0	34.0	27.0	133	10.1	1.16	3.92	26343	104.18	584.83	8.6	15.4
1564.0	35.0	27.0	133	10.1	1.16	3.95	26571	101.20	577.82	8.6	15.4
1565.0	43.0	27.0	133	10.1	1.10	3.97	26757	82.37	570.74	8.6	15.4
1566.0	51.0	27.0	133	10.1	1.05	3.99	26913	69.45	563.68	8.6	15.4
1567.0	44.0	27.0	120	10.1	1.07	4.01	27077	80.50	556.97	8.6	15.4
1568.0	47.0	27.0	138	10.1	1.09	4.03	27253	75.36	550.37	8.6	15.4
1569.0	36.0	27.0	138	10.1	1.16	4.06	27483	98.39	544.26	8.6	15.4
1570.0	63.0	28.0	138	10.1	1.02	4.08	27615	56.22	537.76	8.6	15.4
1571.0	80.0	28.0	138	10.1	0.95	4.09	27718	44.28	531.26	8.6	15.5
1572.0	70.0	25.0	135	10.1	0.95	4.11	27834	50.60	525.02	8.6	15.5
1573.0	63.0	27.0	135	10.1	1.00	4.12	27962	56.22	519.01	8.6	15.5
1574.0	56.0	15.0	130	10.1	0.88	4.14	28102	63.25	513.24	8.6	15.5
1575.0	42.0	15.0	130	10.1	0.95	4.16	28287	84.33	507.88	8.6	15.5
1576.0	47.0	16.0	133	10.1	0.94	4.18	28457	75.36	502.54	8.6	15.5
1577.0	47.0	16.0	133	10.1	0.94	4.21	28627	75.36	497.33	8.6	15.5
1578.0	3.1	16.0	133	10.1	1.59	4.53	31201	1143	505	8.6	15.5
1579.0	2.6	32.0	110	10.1	1.90	4.91	33740	1362	515	8.6	15.5
1580.0	2.3	30.0	114	10.1	1.91	5.35	36713	1540	527	8.6	15.5
1581.0	2.7	30.0	115	10.1	1.87	5.72	39269	1312	536	8.6	15.5
1582.0	1.7	28.0	116	10.1	1.96	6.31	43363	2084	554	8.6	15.5
1583.0	2.4	33.0	118	10.1	1.96	6.72	46313	1476	565	8.6	15.5
1584.0	5.0	40.0	114	10.1	1.84	6.92	47681	708.40	566.35	8.6	15.5
1585.0	3.4	42.0	114	10.1	1.99	7.22	49693	1042	572	8.6	15.5

BIT NUMBER	9	IADC CODE	517	INTERVAL	1585.0- 1986.0
HTC J22		SIZE	12.250	NOZZLES	15 15 14
COST	4200.00	TRIP TIME	8.2	BIT RUN	401.0
TOTAL HOURS	40.51	TOTAL TURNS	244481	CONDITION	T5 B4 G0.188

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1586.0	4.6	10.0	80	10.1	1.23	0.22	1043	770	34014	8.6	15.5
1587.0	4.6	15.0	81	10.1	1.35	0.43	2100	770	17392	8.6	15.5
1588.0	4.7	18.0	75	10.1	1.39	0.65	3057	754	11846	8.6	15.5
1589.0	3.1	19.0	75	10.1	1.51	0.97	4509	1143	9170	8.6	15.5
1590.0	4.4	20.0	75	10.1	1.45	1.20	5532	805	7497	8.6	15.5
1591.0	6.7	20.0	75	10.1	1.34	1.35	6203	529	6336	8.6	15.5
1592.0	3.7	20.0	75	10.1	1.49	1.62	7420	957	5567	8.6	15.5
1593.0	10.9	21.0	72	10.1	1.22	1.71	7816	325	4912	8.6	15.5
1594.0	16.0	22.0	72	10.1	1.14	1.77	8086	221	4391	8.6	15.5
1595.0	24.0	7.0	90	10.1	0.84	1.81	8311	148	3967	8.6	15.5
1596.0	24.0	7.0	90	10.1	0.84	1.85	8536	148	3619	8.6	15.5
1597.0	32.0	6.0	90	10.1	0.76	1.89	8705	111	3327	8.6	15.5
1598.0	47.0	10.0	90	10.1	0.76	1.91	8820	75	3077	8.6	15.5
1599.0	23.0	23.0	90	10.1	1.11	1.95	9054	154	2868	8.6	15.5
1600.0	9.6	28.0	88	10.1	1.41	2.05	9604	369	2701	8.6	15.5
1601.0	8.1	22.0	90	10.1	1.37	2.18	10271	437	2560	8.6	15.5
1602.0	32.0	23.0	90	10.1	1.03	2.21	10440	111	2416	8.6	15.5
1603.0	25.0	22.0	90	10.1	1.08	2.25	10656	142	2290	8.6	15.5
1604.0	24.0	22.0	90	10.1	1.09	2.29	10881	148	2177	8.6	15.5
1605.0	25.0	22.0	90	10.1	1.08	2.33	11097	142	2075	8.6	15.5
1606.0	24.0	22.0	90	10.1	1.09	2.37	11322	148	1983	8.6	15.5
1607.0	34.0	25.0	94	10.1	1.05	2.40	11488	104	1898	8.6	15.5
1608.0	25.0	24.0	25	10.1	0.77	2.44	11548	142	1821	8.6	15.5
1609.0	28.0	24.0	95	10.1	1.09	2.48	11751	127	1751	8.6	15.5
1610.0	20.0	20.0	26	10.1	0.80	2.53	11829	177	1688	8.6	15.5
1611.0	7.6	30.0	26	10.1	1.16	2.66	12034	466	1641	8.6	15.5
1612.0	8.2	30.0	95	10.1	1.50	2.78	12730	432	1596	8.6	15.5
1613.0	7.2	34.0	95	10.1	1.60	2.92	13521	492	1557	8.6	15.5
1614.0	5.8	51.0	100	10.1	1.90	3.09	14556	611	1524	8.6	15.5
1615.0	40.0	51.0	100	10.1	1.26	3.12	14706	89	1476	8.6	15.5
1616.0	35.0	50.0	100	10.1	1.30	3.15	14877	101	1432	8.6	15.5
1617.0	32.0	40.0	100	10.1	1.24	3.18	15065	111	1391	8.6	15.5
1618.0	17.0	38.0	102	10.1	1.41	3.24	15425	208	1355	8.6	15.5
1619.0	30.0	39.0	105	10.1	1.26	3.27	15635	118	1318	8.6	15.5
1620.0	14.0	39.0	105	10.1	1.49	3.34	16085	253	1288	8.6	15.5
1621.0	26.0	38.0	105	10.1	1.29	3.38	16327	136	1256	8.6	15.5
1622.0	18.0	36.0	104	10.1	1.38	3.44	16674	197	1227	8.6	15.5
1623.0	21.0	36.0	104	10.1	1.33	3.48	16971	169	1199	8.6	15.5
1624.0	38.0	30.0	104	10.1	1.10	3.51	17135	93	1171	8.6	15.5
1625.0	36.0	36.0	103	10.1	1.17	3.54	17307	98	1144	8.6	15.5
1626.0	36.0	40.0	102	10.1	1.21	3.56	17477	98	1119	8.6	15.5
1627.0	23.0	40.0	102	10.1	1.34	3.61	17743	154	1096	8.6	15.5
1628.0	29.0	40.0	102	10.1	1.27	3.64	17954	122	1073	8.6	15.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1629.0	24.0	40.0	102	10.0	1.34	3.68	18209	148	1052	8.6	15.5
1630.0	19.0	40.0	102	10.0	1.42	3.74	18531	186	1033	8.6	15.5
1631.0	25.0	40.0	102	10.0	1.33	3.78	18776	142	1014	8.6	15.5
1632.0	21.0	40.0	102	10.0	1.38	3.82	19067	168.67	995.55	8.6	15.5
1633.0	25.0	40.0	102	10.0	1.33	3.86	19312	141.68	977.76	8.6	15.5
1634.0	21.0	40.0	102	10.0	1.38	3.91	19603	168.67	961.24	8.6	15.5
1635.0	24.0	40.0	102	10.0	1.34	3.95	19858	147.58	944.97	8.6	15.5
1636.0	8.9	40.0	102	10.0	1.65	4.07	20546	397.98	934.25	8.6	15.5
1637.0	15.0	40.0	102	10.0	1.49	4.13	20954	236.13	920.82	8.6	15.5
1638.0	25.0	40.0	102	10.0	1.33	4.17	21199	141.68	906.12	8.6	15.5
1639.0	34.0	40.0	102	10.0	1.24	4.20	21379	104.18	891.27	8.6	15.5
1640.0	44.0	40.0	102	10.0	1.16	4.22	21518	80.50	876.53	8.6	15.5
1641.0	21.0	41.0	105	10.0	1.40	4.27	21818	168.67	863.89	8.6	15.6
1642.0	21.0	41.0	105	10.0	1.40	4.32	22118	168.67	851.69	8.6	15.6
1643.0	21.0	41.0	105	10.0	1.40	4.37	22418	168.67	839.91	8.6	15.6
1644.0	7.1	35.0	105	10.0	1.66	4.51	23305	498.87	834.13	8.6	15.6
1645.0	30.0	38.0	105	10.0	1.26	4.54	23515	118.07	822.20	8.6	15.6
1646.0	7.8	36.0	105	10.0	1.65	4.67	24323	454.10	816.17	8.6	15.6
1647.0	4.6	37.0	105	10.0	1.82	4.89	25692	770.00	815.42	8.6	15.6
1648.0	4.9	41.0	106	10.0	1.86	5.09	26990	722.86	813.95	8.6	15.6
1649.0	8.2	41.0	106	10.0	1.70	5.21	27766	431.95	807.98	8.6	15.6
1650.0	21.0	39.0	105	10.0	1.38	5.26	28066	168.67	798.15	8.6	15.6
1651.0	30.0	39.0	105	10.0	1.27	5.29	28276	118.07	787.84	8.6	15.6
1652.0	34.0	36.0	105	10.0	1.21	5.32	28461	104.18	777.64	8.6	15.6
1653.0	37.0	36.0	105	10.0	1.18	5.35	28632	95.73	767.61	8.6	15.6
1654.0	7.6	39.0	105	10.0	1.69	5.48	29461	466.05	763.24	8.6	15.6
1655.0	6.4	39.0	105	10.0	1.75	5.64	30445	553.44	760.24	8.6	15.6
1656.0	18.0	38.0	105	10.0	1.42	5.69	30795	196.78	752.31	8.6	15.6
1657.0	20.0	38.0	105	10.0	1.39	5.74	31110	177.10	744.32	8.6	15.6
1658.0	32.0	38.0	102	10.0	1.24	5.78	31301	110.69	735.64	8.6	15.6
1659.0	30.0	38.0	102	10.0	1.26	5.81	31505	118.07	727.29	8.6	15.6
1660.0	33.0	38.0	102	10.0	1.23	5.84	31691	107.33	719.03	8.6	15.6
1661.0	30.0	38.0	102	10.0	1.26	5.87	31895	118.07	711.12	8.6	15.6
1662.0	25.0	38.0	102	10.0	1.31	5.91	32139	141.68	703.72	8.6	15.6
1663.0	27.0	38.0	102	10.0	1.29	5.95	32366	131.19	696.38	8.6	15.6
1664.0	28.0	38.0	102	10.0	1.28	5.99	32585	126.50	689.17	8.6	15.6
1665.0	35.0	38.0	102	10.0	1.21	6.01	32760	101.20	681.82	8.6	15.6
1666.0	18.0	38.0	105	10.0	1.42	6.07	33110	196.78	675.83	8.6	15.6
1667.0	28.0	38.0	105	10.0	1.28	6.11	33335	126.50	669.13	8.6	15.6
1668.0	27.0	38.0	105	10.0	1.30	6.14	33568	131.19	662.65	8.6	15.6
1669.0	33.0	38.0	105	10.0	1.23	6.17	33759	107.33	656.04	8.6	15.6
1670.0	28.0	38.0	105	10.0	1.28	6.21	33984	126.50	649.81	8.6	15.6
1671.0	33.0	38.0	105	10.0	1.23	6.24	34175	107.33	643.50	8.6	15.6
1672.0	20.0	41.0	102	10.0	1.41	6.29	34481	177.10	638.14	8.6	15.6
1673.0	17.0	41.0	102	10.0	1.46	6.35	34841	208.35	633.26	8.6	15.6
1674.0	23.0	35.0	103	10.0	1.31	6.39	35109	154.00	627.87	8.6	15.6
1675.0	38.0	35.0	103	10.0	1.16	6.42	35272	93.21	621.93	8.6	15.6
1676.0	31.0	36.0	103	10.0	1.23	6.45	35471	114.26	616.35	8.6	15.6
1677.0	30.0	36.0	103	10.0	1.24	6.48	35677	118.07	610.94	8.6	15.6
1678.0	5.6	38.0	104	10.0	1.77	6.66	36792	632.50	611.17	8.6	15.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1679.0	2.9	40.0	103	10.0	2.00	7.01	38923	1221	618	8.6	15.6
1680.0	9.0	40.0	103	10.0	1.65	7.12	39609	393.56	615.30	8.6	15.6
1681.0	3.1	41.0	102	10.0	1.99	7.44	41584	1143	621	8.6	15.6
1682.0	3.8	34.0	105	10.0	1.83	7.70	43241	932.11	624.00	8.6	15.6
1683.0	6.4	34.0	105	10.0	1.68	7.86	44226	553.44	623.28	8.6	15.6
1684.0	26.0	37.0	105	10.0	1.30	7.90	44468	136.23	618.36	8.6	15.6
1685.0	12.0	35.0	105	10.0	1.50	7.98	44993	295.17	615.13	8.6	15.6
1686.0	7.3	36.0	105	10.0	1.67	8.12	45856	485.21	613.85	8.6	15.6
1687.0	11.0	36.0	105	10.0	1.54	8.21	46429	322.00	610.98	8.6	15.6
1688.0	17.0	38.0	105	10.0	1.44	8.27	46799	208.35	607.08	8.6	15.6
1689.0	7.2	38.0	105	10.0	1.70	8.41	47674	491.94	605.97	8.6	15.6
1690.0	12.0	36.0	100	10.0	1.50	8.49	48174	295.17	603.01	8.6	15.6
1691.0	5.2	36.0	102	10.0	1.76	8.68	49351	681.15	603.75	8.6	15.6
1692.0	5.6	35.0	100	10.0	1.72	8.86	50423	632.50	604.01	8.6	15.6
1693.0	5.1	36.0	100	10.0	1.76	9.06	51599	694.51	604.85	8.6	15.6
1694.0	5.9	36.0	100	10.0	1.72	9.23	52616	600.34	604.81	8.6	15.6
1695.0	7.8	36.0	100	10.0	1.63	9.35	53385	454.10	603.44	8.6	15.6
1696.0	4.4	28.0	110	10.0	1.70	9.58	54885	805.00	605.26	8.6	15.6
1697.0	10.0	28.0	110	10.0	1.47	9.68	55545	354.20	603.02	8.6	15.6
1698.0	15.0	27.0	112	10.0	1.35	9.75	55993	236.13	599.77	8.6	15.6
1699.0	15.0	27.0	112	10.0	1.35	9.82	56441	236.13	596.58	8.6	15.6
1700.0	9.6	26.0	114	10.0	1.47	9.92	57154	368.96	594.60	8.6	15.6
1701.0	4.0	26.0	114	10.0	1.70	10.17	58864	885.50	597.11	8.6	15.6
1702.0	3.8	34.0	117	10.0	1.86	10.43	60711	932.11	599.97	8.6	15.6
1703.0	6.9	34.0	117	10.0	1.69	10.58	61729	513.33	599.24	8.6	15.6
1704.0	27.0	31.0	117	10.0	1.25	10.61	61989	131.19	595.30	8.6	15.6
1705.0	22.0	31.0	113	10.0	1.30	10.66	62297	161.00	591.68	8.6	15.6
1706.0	36.0	29.0	119	10.0	1.15	10.69	62495	98.39	587.61	8.6	15.6
1707.0	38.0	29.0	119	10.0	1.14	10.71	62683	93.21	583.55	8.6	15.6
1708.0	38.0	29.0	119	10.0	1.14	10.74	62871	93.21	579.57	8.6	15.7
1709.0	26.0	29.0	119	10.0	1.24	10.78	63146	136.23	575.99	8.6	15.7
1710.0	22.0	28.0	119	10.0	1.28	10.82	63470	161.00	572.67	8.6	15.7
1711.0	7.3	28.0	119	10.0	1.58	10.96	64448	485.21	571.98	8.6	15.7
1712.0	5.9	28.0	118	10.0	1.64	11.13	65648	600.34	572.20	8.6	15.7
1713.0	8.5	28.0	118	10.0	1.54	11.25	66481	416.71	570.99	8.6	15.7
1714.0	3.6	28.0	119	10.0	1.78	11.53	68465	983.89	574.19	8.6	15.7
1715.0	5.1	28.0	119	10.0	1.68	11.72	69865	694.51	575.11	8.6	15.7
1716.0	9.0	28.0	119	10.0	1.53	11.83	70658	393.56	573.73	8.6	15.7
1717.0	9.0	28.0	119	10.0	1.53	11.94	71451	393.56	572.36	8.6	15.7
1718.0	16.0	28.0	119	10.0	1.37	12.01	71897	221.38	569.72	8.6	15.7
1719.0	23.0	28.0	119	10.0	1.27	12.05	72208	154.00	566.62	8.6	15.7
1720.0	20.0	28.0	119	10.0	1.30	12.10	72565	177.10	563.74	8.6	15.7
1721.0	20.0	28.0	119	10.0	1.30	12.15	72922	177.10	560.89	8.6	15.7
1722.0	23.0	26.0	120	10.0	1.24	12.19	73235	154.00	557.92	8.6	15.7
1723.0	20.0	26.0	120	10.0	1.28	12.24	73595	177.10	555.16	8.6	15.7
1724.0	9.0	29.0	120	10.0	1.54	12.36	74395	393.60	554.00	8.6	15.7
1725.0	4.0	27.0	120	10.0	1.74	12.61	76195	885.50	556.37	8.6	15.7
1726.0	11.0	27.0	120	10.0	1.46	12.70	76850	322.00	554.71	8.6	15.7
1727.0	13.0	20.0	120	10.0	1.30	12.77	77403	272.46	552.72	8.6	15.7
1728.0	13.0	22.0	115	10.0	1.33	12.85	77934	272.46	550.76	8.6	15.7

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1729.0	14.0	20.0	115	10.0	1.27	12.92	78427	253.00	548.69	8.6	15.7
1730.0	24.0	21.0	116	10.0	1.15	12.96	78717	147.58	545.92	8.6	15.7
1731.0	14.0	21.0	116	10.0	1.29	13.03	79214	253.00	543.92	8.6	15.7
1732.0	31.0	22.0	105	10.0	1.08	13.07	79417	114.26	541.00	8.6	15.7
1733.0	17.0	22.0	105	10.0	1.23	13.13	79788	208.35	538.75	8.6	15.7
1734.0	16.0	19.0	105	10.0	1.20	13.19	80182	221.38	536.62	8.6	15.7
1735.0	10.0	19.0	105	10.0	1.32	13.29	80812	354.20	535.40	8.6	15.7
1736.0	12.0	19.0	116	10.0	1.30	13.37	81392	295.17	533.81	8.6	15.7
1737.0	8.5	22.0	110	10.0	1.42	13.49	82168	416.71	533.04	8.6	15.7
1738.0	16.0	22.0	110	10.0	1.26	13.55	82581	221.38	531.00	8.6	15.7
1739.0	18.0	22.0	110	10.0	1.23	13.61	82947	196.78	528.83	8.6	15.7
1740.0	13.0	21.0	110	10.0	1.30	13.68	83455	272.46	527.18	8.6	15.7
1741.0	9.0	21.0	110	10.0	1.39	13.80	84188	393.56	526.32	8.6	15.7
1742.0	16.0	22.0	115	10.0	1.27	13.86	84620	221.38	524.38	8.6	15.7
1743.0	7.6	22.0	115	10.0	1.47	13.99	85528	466.05	524.01	8.6	15.7
1744.0	11.0	22.0	115	10.0	1.37	14.08	86155	322.00	522.74	8.6	15.7
1745.0	9.0	22.0	115	10.0	1.42	14.19	86922	393.56	521.93	8.6	15.7
1746.0	12.0	21.0	115	10.0	1.33	14.27	87497	295.17	520.52	8.6	15.7
1747.0	13.0	21.0	115	10.0	1.31	14.35	88027	272.46	518.99	8.6	15.7
1748.0	8.5	21.0	114	10.0	1.42	14.47	88832	416.71	518.37	8.6	15.7
1749.0	12.0	20.0	114	10.0	1.31	14.55	89402	295.17	517.01	8.6	15.7
1750.0	10.0	26.0	113	10.0	1.45	14.65	90080	354.20	516.02	8.6	15.7
1751.0	13.0	28.0	112	10.0	1.41	14.73	90597	272.46	514.55	8.6	15.7
1752.0	7.5	28.0	112	10.0	1.56	14.86	91496	474.16	514.31	8.6	15.7
1753.0	3.8	28.0	112	10.0	1.75	15.13	93265	932.11	516.80	8.6	15.7
1754.0	2.3	23.0	114	10.0	1.80	15.56	96239	1540	523	8.6	15.7
1755.0	2.3	32.0	112	10.0	1.96	16.00	99161	1540	529	8.6	15.7
1756.0	7.2	32.0	110	10.0	1.63	16.13	100077	491.94	528.62	8.6	15.7
1757.0	6.7	34.0	118	10.0	1.70	16.28	101134	528.66	528.62	8.6	15.7
1758.0	17.0	32.0	113	10.0	1.39	16.34	101533	208.35	526.77	8.6	15.7
1759.0	29.0	30.0	114	10.0	1.21	16.38	101769	122.14	524.44	8.6	15.7
1760.0	21.0	32.0	117	10.0	1.34	16.42	102103	168.67	522.41	8.6	15.7
1761.0	5.1	32.0	117	10.0	1.74	16.62	103479	694.51	523.39	8.6	15.7
1762.0	4.0	32.0	117	10.0	1.81	16.87	105234	885.50	525.43	8.6	15.7
1763.0	6.4	32.0	117	10.0	1.68	17.03	106331	553.44	525.59	8.6	15.7
1764.0	7.2	32.0	98	10.0	1.59	17.17	107148	491.94	525.40	8.6	15.7
1765.0	14.0	31.0	100	10.0	1.39	17.24	107577	253.00	523.89	8.6	15.7
1766.0	14.0	32.0	98	10.0	1.40	17.31	107997	253.00	522.39	8.6	15.7
1767.0	13.0	32.0	98	10.0	1.42	17.39	108449	272.46	521.02	8.6	15.7
1768.0	17.0	31.0	96	10.0	1.33	17.44	108788	208.35	519.31	8.6	15.7
1769.0	17.0	31.0	96	10.0	1.33	17.50	109126	208.35	517.62	8.6	15.7
1770.0	9.0	33.0	96	10.0	1.54	17.61	109766	393.56	516.95	8.6	15.7
1771.0	5.2	32.0	94	10.0	1.68	17.81	110851	681.15	517.83	8.6	15.7
1772.0	5.0	32.0	94	10.0	1.69	18.01	111979	708.40	518.85	8.6	15.7
1773.0	7.8	38.0	94	10.0	1.64	18.14	112702	454.10	518.51	8.6	15.7
1774.0	13.0	40.0	96	10.0	1.51	18.21	113145	272.46	517.20	8.6	15.7
1775.0	15.0	38.0	96	10.0	1.45	18.28	113529	236.13	515.73	8.6	15.7
1776.0	18.0	41.0	95	10.0	1.42	18.33	113846	196.78	514.06	8.6	15.7
1777.0	23.0	40.0	95	10.0	1.33	18.38	114094	154.00	512.18	8.6	15.8
1778.0	20.0	39.0	94	10.0	1.36	18.43	114376	177.10	510.44	8.6	15.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1779.0	18.0	41.0	94	10.0	1.42	18.48	114689	196.78	508.83	8.6	15.8
1780.0	15.0	39.0	95	10.0	1.46	18.55	115069	236.13	507.43	8.6	15.8
1781.0	15.0	39.0	95	10.0	1.46	18.62	115449	236.13	506.04	8.6	15.8
1782.0	19.0	39.0	95	10.0	1.38	18.67	115749	186.42	504.42	8.5	15.7
1783.0	19.0	42.0	97	10.0	1.42	18.72	116055	186.42	502.82	8.5	15.8
1784.0	12.0	38.0	96	10.0	1.52	18.81	116535	295.17	501.77	8.5	15.8
1785.0	19.0	38.0	96	10.0	1.38	18.86	116839	186.43	500.20	8.5	15.8
1786.0	15.0	42.0	95	10.0	1.49	18.92	117219	236.13	498.88	8.5	15.8
1787.0	19.0	42.0	95	10.0	1.42	18.98	117519	186.42	497.34	8.5	15.8
1788.0	29.0	39.0	95	10.0	1.25	19.01	117715	122.14	495.49	8.5	15.8
1789.0	16.0	39.0	95	10.0	1.44	19.07	118071	221.38	494.14	8.5	15.8
1790.0	15.0	39.0	95	10.0	1.46	19.14	118451	236.13	492.89	8.5	15.8
1791.0	8.9	40.0	102	10.0	1.65	19.25	119139	397.98	492.42	8.5	15.8
1792.0	18.0	41.0	103	10.0	1.45	19.31	119482	196.78	491.00	8.5	15.8
1793.0	18.0	38.0	103	10.0	1.41	19.36	119826	196.78	489.58	8.5	15.8
1794.0	6.3	39.0	95	10.0	1.72	19.52	120730	562.22	489.93	8.5	15.8
1795.0	17.0	40.0	95	10.0	1.43	19.58	121066	208.35	488.59	8.5	15.8
1796.0	15.0	40.0	95	10.0	1.47	19.65	121446	236.13	487.39	8.5	15.8
1797.0	26.0	41.0	95	10.0	1.31	19.69	121665	136.23	485.74	8.5	15.8
1798.0	19.0	40.0	100	10.0	1.41	19.74	121981	186.42	484.33	8.5	15.8
1799.0	16.0	41.0	100	10.0	1.47	19.80	122356	221.38	483.10	8.5	15.8
1800.0	15.0	40.0	100	10.0	1.48	19.87	122756	236.13	481.95	8.5	15.8
1801.0	18.0	40.0	100	10.0	1.43	19.92	123089	196.78	480.63	8.5	15.8
1802.0	13.0	40.0	100	10.0	1.53	20.00	123551	272.46	479.67	8.5	15.8
1803.0	4.8	40.0	100	10.0	1.83	20.21	124801	737.92	480.86	8.5	15.8
1804.0	7.3	39.0	88	10.0	1.65	20.35	125524	485.21	480.88	8.5	15.8
1805.0	5.6	38.0	103	10.0	1.77	20.53	126627	632.50	481.57	8.5	15.8
1806.0	5.6	38.0	103	10.0	1.77	20.70	127731	632.50	482.25	8.5	15.8
1807.0	7.3	39.0	98	10.0	1.69	20.84	128537	485.21	482.26	8.5	15.8
1808.0	5.1	40.0	104	10.0	1.83	21.04	129760	694.51	483.21	8.5	15.8
1809.0	5.9	39.0	105	10.0	1.77	21.21	130828	600.34	483.74	8.5	15.8
1810.0	4.4	39.0	105	10.0	1.86	21.43	132260	805.00	485.17	8.5	15.8
1811.0	7.2	40.0	98	10.0	1.70	21.57	133076	491.94	485.20	8.5	15.8
1812.0	13.5	40.0	98	10.0	1.51	21.65	133512	262.37	484.21	8.5	15.8
1813.0	4.7	38.0	100	10.0	1.81	21.86	134788	753.62	485.40	8.5	15.8
1814.0	13.0	39.0	106	10.0	1.53	21.94	135278	272.46	484.47	8.5	15.8
1815.0	13.0	35.0	93	10.0	1.44	22.01	135707	272.46	483.54	8.5	15.8
1816.0	11.0	38.0	104	10.0	1.57	22.10	136274	322.00	482.84	8.5	15.8
1817.0	3.5	36.0	99	10.0	1.87	22.39	137971	1012	485	8.5	15.8
1818.0	15.0	36.0	102	10.0	1.44	22.46	138379	236.13	484.06	8.5	15.8
1819.0	10.0	37.0	102	10.0	1.58	22.56	138991	354.20	483.50	8.5	15.8
1820.0	14.0	36.0	102	10.0	1.46	22.63	139428	253.00	482.52	8.5	15.8
1821.0	12.0	34.0	100	10.0	1.48	22.71	139928	295.17	481.73	8.5	15.8
1822.0	18.0	35.0	100	10.0	1.37	22.77	140262	196.78	480.52	8.5	15.8
1823.0	18.0	35.0	100	10.0	1.37	22.82	140595	196.78	479.33	8.5	15.8
1824.0	18.0	35.0	100	10.0	1.37	22.88	140928	196.78	478.15	8.5	15.8
1825.0	18.0	36.0	103	10.0	1.39	22.93	141272	196.78	476.98	8.5	15.8
1826.0	14.0	36.0	106	10.0	1.47	23.00	141726	253.00	476.05	8.5	15.8
1827.0	16.0	35.0	105	10.0	1.42	23.07	142120	221.38	475.00	8.5	15.8
1828.0	15.0	35.0	105	10.0	1.44	23.13	142540	236.13	474.01	8.5	15.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1829.0	13.0	35.0	105	10.0	1.48	23.21	143024	272.46	473.19	8.5	15.8
1830.0	13.0	35.0	107	10.0	1.49	23.29	143518	272.46	472.37	8.5	15.8
1831.0	12.0	35.0	107	10.0	1.51	23.37	144053	295.17	471.65	8.5	15.8
1832.0	12.0	35.0	107	10.0	1.51	23.45	144588	295.17	470.93	8.5	15.8
1833.0	15.0	36.0	106	10.0	1.45	23.52	145012	236.13	469.99	8.5	15.8
1834.0	15.0	35.0	107	10.0	1.44	23.59	145440	236.13	469.05	8.5	15.8
1835.0	14.0	35.0	107	10.0	1.46	23.66	145899	253.00	468.18	8.5	15.8
1836.0	4.7	35.0	105	10.0	1.78	23.87	147239	753.62	469.32	8.5	15.8
1837.0	4.7	35.0	105	10.0	1.78	24.08	148580	753.62	470.45	8.5	15.8
1838.0	5.8	36.0	105	10.0	1.73	24.26	149666	610.69	471.00	8.5	15.8
1839.0	14.0	36.0	105	10.0	1.47	24.33	150116	253.00	470.14	8.5	15.8
1840.0	7.3	34.0	104	10.0	1.64	24.47	150971	485.21	470.20	8.5	15.8
1841.0	7.3	37.0	104	10.0	1.68	24.60	151826	485.21	470.26	8.5	15.8
1842.0	11.0	37.0	104	10.0	1.55	24.69	152393	322.00	469.69	8.5	15.8
1843.0	12.0	37.0	104	10.0	1.53	24.78	152913	295.17	469.01	8.5	15.8
1844.0	14.0	38.0	104	10.0	1.49	24.85	153359	253.00	468.17	8.5	15.8
1845.0	14.0	38.0	104	10.0	1.49	24.92	153804	253.00	467.35	8.5	15.8
1846.0	11.0	38.0	102	10.0	1.56	25.01	154361	322.00	466.79	8.5	15.8
1847.0	14.0	38.0	102	10.0	1.49	25.08	154798	253.00	465.97	8.5	15.8
1848.0	11.0	38.0	102	10.0	1.56	25.17	155354	322.00	465.43	8.5	15.8
1849.0	14.0	38.0	102	10.0	1.49	25.24	155791	253.00	464.62	8.5	15.8
1850.0	3.8	38.0	102	10.0	1.88	25.51	157402	932.11	466.39	8.5	15.8
1851.0	9.1	39.0	105	10.0	1.64	25.62	158094	389.23	466.10	8.5	15.8
1852.0	12.0	38.0	105	10.0	1.54	25.70	158619	295.17	465.46	8.5	15.8
1853.0	16.0	38.0	105	10.0	1.45	25.76	159013	221.38	464.55	8.5	15.8
1854.0	17.0	32.0	105	10.0	1.37	25.82	159383	208.35	463.59	8.5	15.9
1855.0	15.0	32.0	105	10.0	1.40	25.89	159803	236.13	462.75	8.5	15.9
1856.0	13.0	37.0	105	10.0	1.51	25.97	160288	272.46	462.05	8.5	15.9
1857.0	16.0	37.0	105	10.0	1.44	26.03	160682	221.38	461.16	8.5	15.9
1858.0	9.6	38.0	100	10.0	1.60	26.13	161307	368.96	460.83	8.5	15.9
1859.0	4.3	37.0	100	10.0	1.82	26.36	162702	823.72	462.15	8.5	15.9
1860.0	4.7	37.0	100	10.0	1.80	26.58	163979	753.62	463.21	8.5	15.9
1861.0	4.5	37.0	100	10.0	1.81	26.80	165312	787.11	464.38	8.5	15.9
1862.0	4.7	37.0	100	10.0	1.80	27.01	166589	753.62	465.43	8.5	15.9
1863.0	5.0	37.0	100	10.0	1.78	27.21	167789	708.40	466.30	8.5	15.9
1864.0	14.0	32.0	100	10.0	1.41	27.28	168217	253.00	465.54	8.5	15.9
1865.0	17.0	33.0	100	10.0	1.36	27.34	168570	208.35	464.62	8.5	15.9
1866.0	17.0	36.0	100	10.0	1.40	27.40	168923	208.35	463.71	8.5	15.9
1867.0	17.0	36.0	100	10.0	1.40	27.46	169276	208.35	462.80	8.5	15.9
1868.0	6.3	37.0	100	10.0	1.71	27.62	170228	562.22	463.15	8.5	15.9
1869.0	4.3	38.0	100	10.0	1.84	27.85	171624	823.72	464.42	8.5	15.9
1870.0	4.3	36.0	100	10.0	1.81	28.08	173019	823.72	465.68	8.5	15.9
1871.0	5.0	37.0	94	10.0	1.76	28.28	174147	708.40	466.53	8.5	15.9
1872.0	5.6	38.0	95	10.0	1.74	28.46	175165	632.50	467.11	8.5	15.9
1873.0	7.6	37.0	95	10.0	1.64	28.59	175915	466.05	467.11	8.5	15.9
1874.0	9.6	36.0	94	10.0	1.55	28.70	176503	368.96	466.77	8.5	15.9
1875.0	13.0	33.0	94	10.0	1.42	28.78	176936	272.46	466.10	8.5	15.9
1876.0	20.0	33.0	94	10.0	1.30	28.83	177218	177.10	465.10	8.5	15.9
1877.0	16.0	34.0	95	10.0	1.38	28.89	177575	221.38	464.27	8.5	15.9
1878.0	17.0	33.0	95	10.0	1.35	28.95	177910	208.35	463.40	8.5	15.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1879.0	14.0	33.0	95	10.0	1.40	29.02	178317	253.00	462.68	8.5	15.9
1880.0	8.9	35.0	95	10.0	1.56	29.13	178957	397.98	462.46	8.5	15.9
1881.0	5.9	35.0	95	10.0	1.69	29.30	179924	600.34	462.93	8.5	15.9
1882.0	13.0	34.0	95	10.0	1.44	29.38	180362	272.46	462.28	8.5	15.9
1883.0	14.0	35.0	95	10.0	1.43	29.45	180769	253.00	461.58	8.5	15.9
1884.0	14.0	32.0	95	10.0	1.39	29.52	181176	253.00	460.88	8.5	15.9
1885.0	15.0	32.0	95	10.0	1.37	29.59	181556	236.13	460.14	8.5	15.9
1886.0	15.0	34.0	95	10.0	1.40	29.65	181936	236.13	459.39	8.5	15.9
1887.0	16.0	34.0	90	10.0	1.36	29.72	182274	221.38	458.60	8.5	15.9
1888.0	19.0	34.0	90	10.0	1.31	29.77	182558	186.42	457.71	8.5	15.9
1889.0	12.0	34.0	90	10.0	1.45	29.85	183008	295.17	457.17	8.5	15.9
1890.0	12.0	35.0	90	10.0	1.46	29.94	183458	295.17	456.64	8.5	15.9
1891.0	9.6	35.0	90	10.0	1.53	30.04	184021	368.96	456.35	8.5	15.9
1892.0	12.0	35.0	90	10.0	1.46	30.12	184471	295.17	455.83	8.5	15.9
1893.0	11.0	34.0	90	10.0	1.47	30.21	184961	322.00	455.39	8.5	15.9
1894.0	6.4	36.0	90	10.0	1.66	30.37	185805	553.44	455.71	8.5	15.9
1895.0	5.6	36.0	90	10.0	1.70	30.55	186769	632.50	456.28	8.5	15.9
1896.0	5.0	37.0	90	10.0	1.75	30.75	187849	708.40	457.09	8.5	15.9
1897.0	15.0	37.0	90	10.0	1.42	30.82	188209	236.13	456.38	8.5	15.9
1898.0	15.0	37.0	90	10.0	1.42	30.88	188569	236.13	455.68	8.5	15.9
1899.0	15.0	35.0	90	10.0	1.39	30.95	188929	236.13	454.98	8.5	15.9
1900.0	8.5	35.0	90	10.0	1.56	31.07	189565	416.71	454.86	8.5	15.9
1901.0	11.0	35.0	90	10.0	1.48	31.16	190056	322.00	454.44	8.5	15.9
1902.0	12.0	35.0	90	10.0	1.46	31.24	190506	295.17	453.94	8.5	15.9
1903.0	14.0	35.0	90	10.0	1.41	31.31	190891	253.00	453.30	8.5	15.9
1904.0	15.0	35.0	90	10.0	1.39	31.38	191251	236.13	452.62	8.5	15.9
1905.0	18.0	35.0	90	10.0	1.34	31.43	191551	196.78	451.82	8.5	15.9
1906.0	13.0	35.0	90	10.0	1.44	31.51	191967	272.46	451.27	8.5	15.9
1907.0	18.0	34.0	93	10.0	1.34	31.57	192277	196.78	450.47	8.5	15.9
1908.0	11.0	37.0	96	10.0	1.53	31.66	192800	322.00	450.08	8.5	15.9
1909.0	4.3	35.0	90	10.0	1.76	31.89	194056	823.72	451.23	8.5	15.9
1910.0	6.3	33.0	92	10.0	1.63	32.05	194932	562.22	451.57	8.5	15.9
1911.0	6.3	33.0	92	10.0	1.63	32.21	195809	562.22	451.91	8.5	15.9
1912.0	4.7	35.0	94	10.0	1.75	32.42	197009	753.62	452.83	8.5	15.9
1913.0	6.4	35.0	94	10.0	1.66	32.58	197890	553.44	453.14	8.5	15.9
1914.0	12.0	35.0	94	10.0	1.47	32.66	198360	295.17	452.66	8.5	15.9
1915.0	17.0	33.0	94	10.0	1.35	32.72	198692	208.35	451.92	8.5	15.9
1916.0	16.0	34.0	95	10.0	1.38	32.78	199048	221.38	451.22	8.5	15.9
1917.0	16.0	34.0	95	10.0	1.38	32.84	199404	221.38	450.53	8.5	15.9
1918.0	16.0	34.0	95	10.0	1.38	32.91	199760	221.38	449.84	8.5	15.9
1919.0	14.0	34.0	95	10.0	1.42	32.98	200168	253.00	449.25	8.5	15.9
1920.0	16.0	34.0	95	10.0	1.38	33.04	200524	221.38	448.57	8.5	15.9
1921.0	15.0	35.0	95	10.0	1.41	33.11	200904	236.13	447.94	8.5	15.9
1922.0	15.0	35.0	95	10.0	1.41	33.17	201284	236.13	447.31	8.5	15.9
1923.0	11.0	37.0	98	10.0	1.54	33.26	201818	322.00	446.94	8.5	15.9
1924.0	4.0	37.0	98	10.0	1.84	33.51	203288	885.50	448.24	8.5	15.9
1925.0	6.9	35.0	98	10.0	1.65	33.66	204141	513.33	448.43	8.5	15.9
1926.0	13.0	31.0	98	10.0	1.41	33.74	204593	272.46	447.91	8.5	15.9
1927.0	19.0	34.0	98	10.0	1.34	33.79	204902	186.42	447.15	8.5	15.9
1928.0	7.8	34.0	98	10.0	1.60	33.92	205656	454.10	447.17	8.5	15.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1929.0	5.1	31.0	104	10.0	1.69	34.11	206880	694.51	447.89	8.5	16.0
1930.0	4.2	34.0	102	10.0	1.79	34.35	208337	843.33	449.03	8.5	16.0
1931.0	4.5	38.0	88	10.0	1.79	34.57	209510	787.11	450.01	8.5	16.0
1932.0	11.0	38.0	88	10.1	1.50	34.66	209990	322.00	449.64	8.5	16.0
1933.0	13.0	38.0	88	10.1	1.45	34.74	210396	272.46	449.13	8.5	16.0
1934.0	14.0	37.0	90	10.1	1.42	34.81	210782	253.00	448.57	8.5	16.0
1935.0	14.0	39.0	90	10.1	1.45	34.88	211168	253.00	448.01	8.5	16.0
1936.0	13.0	38.0	90	10.1	1.46	34.96	211583	272.46	447.51	8.5	16.0
1937.0	16.0	39.0	90	10.1	1.41	35.02	211921	221.38	446.87	8.5	16.0
1938.0	12.0	39.0	90	10.1	1.49	35.11	212371	295.17	446.44	8.5	16.0
1939.0	12.0	38.0	90	10.1	1.48	35.19	212821	295.17	446.01	8.5	16.0
1940.0	11.0	38.0	90	10.1	1.51	35.28	213312	322.00	445.66	8.5	16.0
1941.0	12.0	39.0	90	10.1	1.49	35.36	213762	295.17	445.24	8.5	16.0
1942.0	12.0	39.0	90	10.1	1.49	35.45	214212	295.17	444.82	8.5	16.0
1943.0	12.0	39.0	90	10.1	1.49	35.53	214662	295.17	444.40	8.5	16.0
1944.0	12.0	38.0	90	10.1	1.48	35.61	215112	295.17	443.98	8.5	16.0
1945.0	13.0	40.0	90	10.1	1.48	35.69	215527	272.46	443.51	8.5	16.0
1946.0	8.2	37.0	90	10.1	1.58	35.81	216185	431.95	443.48	8.5	16.0
1947.0	11.0	36.0	90	10.1	1.48	35.90	216676	322.00	443.14	8.5	16.0
1948.0	12.0	36.0	90	10.1	1.46	35.99	217126	295.17	442.73	8.5	16.0
1949.0	9.1	35.0	90	10.1	1.53	36.10	217720	389.23	442.59	8.5	16.0
1950.0	11.0	35.0	90	10.1	1.47	36.19	218211	322.00	442.26	8.5	16.0
1951.0	9.6	38.0	90	10.1	1.55	36.29	218773	368.96	442.06	8.5	16.0
1952.0	6.9	38.0	97	10.1	1.67	36.44	219617	513.33	442.25	8.5	16.0
1953.0	11.0	37.0	96	10.1	1.51	36.53	220140	322.00	441.92	8.5	16.0
1954.0	6.2	37.0	96	10.1	1.69	36.69	221069	571.29	442.27	8.5	16.0
1955.0	4.4	38.0	96	10.1	1.80	36.92	222378	805.00	443.25	8.5	16.0
1956.0	8.9	37.0	96	10.1	1.58	37.03	223026	397.98	443.13	8.5	16.0
1957.0	13.0	38.0	96	10.1	1.48	37.11	223469	272.46	442.67	8.5	16.0
1958.0	12.0	38.0	96	10.1	1.50	37.19	223949	295.17	442.28	8.5	16.0
1959.0	8.9	38.0	96	10.1	1.59	37.30	224596	397.98	442.16	8.5	16.0
1960.0	5.0	38.0	96	10.1	1.76	37.50	225748	708.40	442.87	8.5	16.0
1961.0	4.4	36.0	97	10.1	1.78	37.73	227071	805.00	443.83	8.5	16.0
1962.0	7.8	37.0	97	10.1	1.62	37.86	227817	454.10	443.86	8.5	16.0
1963.0	12.0	37.0	97	10.1	1.49	37.94	228302	295.17	443.47	8.5	16.0
1964.0	8.5	37.0	97	10.1	1.59	38.06	228986	416.71	443.40	8.5	16.0
1965.0	10.2	29.0	95	10.1	1.43	38.16	229545	347.25	443.14	8.5	16.0
1966.0	10.0	27.0	110	10.1	1.45	38.26	230205	354.20	442.91	8.5	16.0
1967.0	9.0	28.0	105	10.1	1.48	38.37	230905	393.56	442.78	8.5	16.0
1968.0	9.0	27.0	105	10.1	1.46	38.48	231605	393.56	442.65	8.5	16.0
1969.0	8.9	28.0	105	10.1	1.48	38.59	232313	397.98	442.53	8.5	16.0
1970.0	8.9	28.0	105	10.1	1.48	38.70	233021	397.98	442.42	8.5	16.0
1971.0	8.6	28.0	105	10.1	1.49	38.82	233754	411.86	442.34	8.5	16.0
1972.0	11.0	28.0	105	10.1	1.42	38.91	234326	322.00	442.03	8.5	16.0
1973.0	14.0	28.0	105	10.1	1.35	38.98	234776	253.00	441.54	8.5	16.0
1974.0	16.0	28.0	105	10.1	1.32	39.04	235170	221.38	440.98	8.5	16.0
1975.0	7.8	28.0	105	10.1	1.52	39.17	235978	454.10	441.01	8.5	16.0
1976.0	8.5	27.0	105	10.1	1.48	39.29	236719	416.71	440.95	8.5	16.0
1977.0	8.5	28.0	105	10.1	1.49	39.41	237460	416.71	440.89	8.5	16.0
1978.0	8.2	28.0	105	10.1	1.50	39.53	238228	431.95	440.86	8.5	16.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1979.0	6.7	28.0	105	10.1	1.56	39.68	239169	528.66	441.09	8.5	16.0
1980.0	5.4	28.0	105	10.1	1.62	39.86	240335	655.93	441.63	8.5	16.0
1981.0	9.6	29.0	105	10.1	1.47	39.97	240992	368.96	441.45	8.5	16.0
1982.0	8.2	29.0	105	10.1	1.52	40.09	241760	431.95	441.42	8.5	16.0
1983.0	8.9	28.0	110	10.1	1.49	40.20	242501	397.98	441.31	8.5	16.0
1984.0	10.0	28.0	110	10.1	1.46	40.30	243161	354.20	441.09	8.5	16.0
1985.0	10.0	28.0	110	10.1	1.46	40.40	243821	354.20	440.88	8.5	16.0
1986.0	10.0	28.0	110	10.1	1.46	40.50	244481	354.20	440.66	8.5	16.0

BIT NUMBER	10	IADC CODE	517	INTERVAL	1986.0- 2161.0
HTC J22		SIZE	12.250	NOZZLES	14 14 15
COST	4200.00	TRIP TIME	8.9	BIT RUN	175.0
TOTAL HOURS	29.75	TOTAL TURNS	175777	CONDITION	T8 B5 G0.125

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1987.0	21.0	10.0	80	10.1	0.91	0.05	229	169	35892	8.5	16.0
1988.0	29.5	10.0	80	10.1	0.84	0.08	391	120	18006	8.5	16.0
1989.0	29.1	10.0	80	10.1	0.84	0.12	556	122	12045	8.5	16.0
1990.0	7.2	10.0	80	10.1	1.14	0.25	1223	492	9157	8.5	16.0
1991.0	8.0	12.0	80	10.1	1.16	0.38	1823	443	7414	8.5	16.0
1992.0	7.0	12.0	80	10.1	1.19	0.52	2509	506	6262	8.5	16.0
1993.0	10.3	11.0	80	10.1	1.08	0.62	2975	344	5417	8.5	16.0
1994.0	5.6	12.0	80	10.1	1.24	0.80	3832	633	4819	8.5	16.0
1995.0	14.1	36.0	100	10.1	1.44	0.87	4257	251	4311	8.5	16.0
1996.0	14.9	35.0	100	10.1	1.41	0.94	4660	238	3904	8.5	16.0
1997.0	13.0	36.0	100	10.1	1.46	1.01	5122	272	3574	8.5	16.0
1998.0	13.6	38.0	100	10.1	1.47	1.09	5563	260	3298	8.5	16.0
1999.0	14.4	38.0	100	10.1	1.46	1.16	5979	246	3063	8.5	16.0
2000.0	15.0	41.0	100	10.1	1.48	1.22	6379	236	2861	8.5	16.0
2001.0	12.5	36.0	100	10.1	1.48	1.30	6859	283	2689	8.5	16.0
2002.0	13.0	37.0	100	10.1	1.48	1.38	7321	272	2538	8.5	16.0
2003.0	6.0	37.0	100	10.1	1.71	1.55	8321	590	2424	8.5	16.0
2004.0	20.3	37.0	100	10.1	1.34	1.60	8616	174	2299	8.5	16.0
2005.0	18.6	37.0	100	10.1	1.37	1.65	8939	190	2188	8.5	16.0
2006.0	14.0	34.0	98	10.1	1.41	1.72	9359	253	2091	8.5	16.0
2007.0	18.3	34.0	98	10.1	1.33	1.78	9680	194	2001	8.5	16.0
2008.0	18.6	35.0	98	10.1	1.34	1.83	9996	190	1918	8.5	16.0
2009.0	17.6	35.0	98	10.1	1.36	1.89	10331	201	1844	8.5	16.0
2010.0	16.8	35.0	98	10.1	1.37	1.95	10681	211	1776	8.5	16.0
2011.0	17.1	35.0	98	10.1	1.37	2.00	11024	207	1713	8.5	16.1
2012.0	24.0	33.0	98	10.1	1.24	2.05	11269	148	1653	8.5	16.1
2013.0	24.3	36.0	98	10.1	1.27	2.09	11511	146	1597	8.5	16.1
2014.0	7.3	38.0	98	10.1	1.66	2.22	12317	485	1557	8.5	16.1
2015.0	10.1	38.0	98	10.1	1.56	2.32	12899	351	1516	8.5	16.1
2016.0	10.4	38.0	98	10.1	1.55	2.42	13464	341	1476	8.5	16.1
2017.0	7.8	35.0	98	10.1	1.60	2.55	14218	454	1443	8.5	16.1
2018.0	11.6	35.0	98	10.1	1.48	2.63	14725	305	1408	8.5	16.1
2019.0	10.5	35.0	98	10.1	1.51	2.73	15285	337	1375	8.5	16.1
2020.0	12.1	35.0	98	10.1	1.47	2.81	15771	293	1344	8.5	16.1
2021.0	11.0	35.0	98	10.1	1.50	2.90	16306	322	1314	8.5	16.1
2022.0	14.0	26.0	98	10.1	1.31	2.97	16726	253	1285	8.5	16.1
2023.0	12.8	35.0	100	10.1	1.46	3.05	17194	277	1258	8.5	16.1
2024.0	10.6	35.0	100	10.1	1.51	3.15	17760	334	1233	8.5	16.1
2025.0	8.5	36.0	100	10.1	1.59	3.26	18466	417	1212	8.5	16.1
2026.0	9.6	36.0	100	10.1	1.55	3.37	19091	369	1191	8.5	16.1
2027.0	9.6	36.0	100	10.1	1.55	3.47	19716	369	1171	8.5	16.1
2028.0	7.3	35.0	100	10.1	1.62	3.61	20538	485	1155	8.5	16.1
2029.0	8.9	35.0	100	10.1	1.56	3.72	21212	398	1137	8.5	16.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2030.0	9.6	30.0	100	10.1	1.47	3.83	21837	369	1120	8.5	16.1
2031.0	6.4	26.0	100	10.1	1.53	3.98	22775	553	1107	8.5	16.1
2032.0	7.2	26.0	100	10.1	1.49	4.12	23608	492	1094	8.5	16.1
2033.0	9.6	27.0	100	10.1	1.43	4.23	24233	369	1078	8.5	16.1
2034.0	5.9	26.0	100	10.1	1.55	4.39	25250	600	1069	8.5	16.1
2035.0	7.2	26.0	98	10.1	1.49	4.53	26067	492	1057	8.5	16.1
2036.0	12.9	26.0	98	10.1	1.33	4.61	26523	275	1041	8.5	16.1
2037.0	12.9	26.0	98	10.1	1.33	4.69	26979	275	1026	8.5	16.1
2038.0	13.6	26.0	98	10.1	1.32	4.76	27411	260	1011	8.5	16.1
2039.0	11.9	26.0	98	10.1	1.35	4.85	27905	297.65	997.89	8.5	16.1
2040.0	15.0	31.0	98	10.1	1.36	4.91	28297	236.13	983.79	8.5	16.1
2041.0	18.0	32.0	98	10.1	1.32	4.97	28624	196.78	969.48	8.5	16.1
2042.0	17.0	33.0	98	10.1	1.34	5.03	28970	208.35	955.89	8.5	16.1
2043.0	13.7	33.0	98	10.1	1.41	5.10	29399	258.54	943.65	8.5	16.1
2044.0	12.1	32.0	98	10.1	1.43	5.18	29885	292.73	932.43	8.5	16.1
2045.0	12.9	32.0	98	10.1	1.41	5.26	30341	274.57	921.28	8.5	16.1
2046.0	17.1	35.0	98	10.1	1.37	5.32	30684	207.13	909.38	8.5	16.1
2047.0	13.4	34.0	98	10.1	1.42	5.39	31123	264.33	898.80	8.5	16.1
2048.0	14.3	34.0	98	10.1	1.41	5.46	31534	247.69	888.30	8.5	16.1
2049.0	13.2	34.0	98	10.1	1.43	5.54	31980	268.33	878.46	8.5	16.1
2050.0	11.3	34.0	98	10.1	1.47	5.63	32500	313.45	869.63	8.5	16.1
2051.0	13.7	24.0	98	10.1	1.29	5.70	32929	258.54	860.23	8.5	16.1
2052.0	8.5	24.0	98	10.1	1.41	5.82	33621	416.71	853.51	8.5	16.1
2053.0	4.3	30.0	95	10.1	1.68	6.05	34947	823.72	853.07	8.5	16.1
2054.0	4.1	35.0	95	10.0	1.80	6.30	36354	874.57	853.38	8.5	16.1
2055.0	2.4	16.0	95	10.0	1.58	6.71	38729	1476	862	8.5	16.1
2056.0	2.2	10.0	100	10.0	1.46	7.18	41520	1647	874	8.5	16.1
2057.0	3.6	24.0	100	10.0	1.66	7.46	43177	978.45	875.09	8.5	16.1
2058.0	6.2	25.0	100	10.0	1.53	7.62	44145	571.29	870.87	8.5	16.1
2059.0	4.5	20.0	100	10.0	1.53	7.84	45478	787.11	869.73	8.5	16.1
2060.0	3.5	26.0	100	10.0	1.71	8.12	47193	1012	872	8.5	16.1
2061.0	10.1	26.0	100	10.0	1.42	8.22	47787	350.69	864.70	8.5	16.1
2062.0	10.7	29.0	100	10.0	1.44	8.32	48347	331.03	857.68	8.5	16.1
2063.0	3.5	30.0	100	10.0	1.77	8.60	50062	1012	860	8.5	16.1
2064.0	5.9	32.0	100	10.1	1.64	8.77	51079	600.34	856.36	8.5	16.1
2065.0	5.2	31.0	100	10.1	1.66	8.96	52233	681.15	854.14	8.5	16.1
2066.0	10.9	31.0	100	10.1	1.45	9.06	52783	324.95	847.53	8.5	16.1
2067.0	11.4	32.0	100	10.1	1.45	9.14	53309	310.70	840.90	8.5	16.1
2068.0	12.6	32.0	100	10.1	1.42	9.22	53785	281.11	834.07	8.5	16.1
2069.0	10.6	32.0	100	10.1	1.47	9.32	54352	334.15	828.05	8.5	16.1
2070.0	7.7	32.0	100	10.1	1.57	9.45	55136	463.01	823.70	8.5	16.1
2071.0	7.6	32.0	100	10.1	1.57	9.58	55925	466.05	819.50	8.5	16.1
2072.0	8.5	33.0	100	10.1	1.55	9.70	56631	416.71	814.81	8.5	16.1
2073.0	10.6	32.0	100	10.1	1.47	9.79	57197	334.15	809.29	8.5	16.1
2074.0	9.6	32.0	100	10.1	1.50	9.90	57822	368.96	804.28	8.5	16.1
2075.0	8.9	31.0	100	10.1	1.51	10.01	58496	397.98	799.72	8.5	16.1
2076.0	2.4	31.0	100	10.1	1.88	10.43	60996	1476	807	8.5	16.1
2077.0	8.5	27.0	118	10.1	1.51	10.54	61829	416.71	802.94	8.5	16.1
2078.0	8.5	30.0	118	10.1	1.55	10.66	62662	416.71	798.74	8.5	16.1
2079.0	7.7	30.0	118	10.1	1.58	10.79	63582	460.00	795.10	8.5	16.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2080.0	3.5	30.0	118	10.1	1.80	11.08	65605	1012	797	8.5	16.1
2081.0	3.3	29.0	118	10.1	1.80	11.38	67750	1073	800	8.5	16.1
2082.0	7.3	28.0	118	10.1	1.57	11.52	68719	484.54	797.02	8.5	16.1
2083.0	7.7	29.0	118	10.1	1.57	11.65	69638	460.00	793.55	8.5	16.1
2084.0	7.3	28.0	118	10.1	1.57	11.78	70608	485.21	790.40	8.5	16.1
2085.0	6.9	28.0	118	10.1	1.58	11.93	71634	513.33	787.60	8.5	16.1
2086.0	8.2	32.0	118	10.1	1.59	12.05	72497	431.95	784.05	8.5	16.1
2087.0	8.2	34.0	118	10.1	1.62	12.17	73361	431.95	780.56	8.5	16.1
2088.0	3.3	34.0	118	10.1	1.89	12.47	75506	1073	783	8.5	16.1
2089.0	3.2	34.0	118	10.1	1.90	12.79	77719	1107	787	8.5	16.1
2090.0	5.9	38.0	100	10.1	1.73	12.96	78736	600.34	784.78	8.5	16.1
2091.0	7.3	36.0	100	10.1	1.64	13.09	79558	485.21	781.93	8.5	16.2
2092.0	7.3	38.0	100	10.1	1.66	13.23	80380	485.21	779.13	8.5	16.2
2093.0	8.2	36.0	100	10.1	1.60	13.35	81111	431.95	775.88	8.5	16.2
2094.0	7.8	36.0	100	10.1	1.62	13.48	81881	454.10	772.90	8.5	16.2
2095.0	7.7	35.0	100	10.1	1.61	13.61	82660	460.00	770.03	8.5	16.2
2096.0	7.3	35.0	100	10.1	1.62	13.75	83482	485.21	767.44	8.5	16.2
2097.0	7.2	35.0	100	10.1	1.63	13.89	84315	491.94	764.96	8.5	16.2
2098.0	7.4	35.0	100	10.1	1.62	14.02	85126	478.65	762.41	8.5	16.2
2099.0	7.3	38.0	100	10.1	1.66	14.16	85948	485.21	759.95	8.5	16.2
2100.0	5.6	38.0	100	10.1	1.74	14.34	87019	632.50	758.83	8.5	16.2
2101.0	6.2	38.0	100	10.1	1.71	14.50	87987	571.29	757.20	8.5	16.2
2102.0	6.4	38.0	100	10.1	1.70	14.66	88924	553.44	755.45	8.5	16.2
2103.0	6.3	38.0	100	10.1	1.71	14.81	89877	562.22	753.80	8.5	16.2
2104.0	6.2	38.0	100	10.1	1.71	14.98	90845	571.29	752.25	8.5	16.2
2105.0	5.9	38.0	100	10.1	1.73	15.14	91861	600.34	750.97	8.5	16.2
2106.0	5.9	38.0	100	10.1	1.73	15.31	92878	600.34	749.72	8.5	16.2
2107.0	5.9	38.0	100	10.1	1.73	15.48	93895	600.34	748.48	8.5	16.2
2108.0	3.7	38.0	100	10.1	1.87	15.75	95517	957.30	750.19	8.5	16.2
2109.0	6.3	38.0	100	10.1	1.71	15.91	96469	562.22	748.67	8.5	16.2
2110.0	5.6	38.0	100	10.1	1.74	16.09	97541	632.50	747.73	8.5	16.2
2111.0	6.7	38.0	100	10.1	1.69	16.24	98436	528.66	745.98	8.5	16.2
2112.0	6.4	38.0	100	10.1	1.70	16.40	99374	553.44	744.45	8.5	16.2
2113.0	6.4	38.0	100	10.1	1.70	16.55	100311	553.44	742.94	8.5	16.2
2114.0	4.0	38.0	100	10.1	1.84	16.80	101811	885.50	744.06	8.5	16.2
2115.0	3.0	38.0	100	10.1	1.93	17.14	103811	1181	747	8.5	16.2
2116.0	6.3	38.0	100	10.1	1.71	17.29	104764	562.22	746.02	8.5	16.2
2117.0	6.9	37.0	100	10.1	1.67	17.44	105633	513.33	744.24	8.5	16.2
2118.0	5.1	38.0	95	10.1	1.75	17.64	106751	694.51	743.86	8.5	16.2
2119.0	3.4	39.0	95	10.1	1.89	17.93	108427	1042	746	8.5	16.2
2120.0	3.1	38.0	95	10.1	1.90	18.25	110266	1143	749	8.5	16.2
2121.0	3.5	39.0	95	10.1	1.88	18.54	111895	1012	751	8.5	16.2
2122.0	5.1	39.0	95	10.1	1.77	18.73	113012	694.51	750.60	8.5	16.2
2123.0	4.7	38.0	95	10.1	1.78	18.95	114225	753.62	750.62	8.5	16.2
2124.0	4.8	36.0	95	10.1	1.74	19.16	115413	737.92	750.53	8.5	16.2
2125.0	4.9	36.0	95	10.1	1.74	19.36	116576	722.86	750.33	8.5	16.2
2126.0	4.9	37.0	95	10.1	1.75	19.56	117739	722.86	750.13	8.5	16.2
2127.0	5.5	37.0	95	10.1	1.72	19.75	118775	644.00	749.38	8.5	16.2
2128.0	4.5	38.0	95	10.1	1.79	19.97	120042	787.11	749.64	8.5	16.2
2129.0	6.2	39.0	95	10.1	1.71	20.13	120962	571.29	748.40	8.5	16.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCDST	PP	FG
2130.0	4.9	39.0	95	10.1	1.78	20.33	122125	722.86	748.22	8.5	16.2
2131.0	4.8	36.0	95	10.1	1.74	20.54	123312	737.92	748.15	8.5	16.2
2132.0	4.7	37.0	95	10.1	1.76	20.75	124525	753.62	748.19	8.5	16.2
2133.0	5.0	39.0	95	10.1	1.77	20.95	125665	708.40	747.91	8.5	16.2
2134.0	3.8	38.0	95	10.1	1.84	21.22	127165	932.11	749.16	8.5	16.2
2135.0	3.5	36.0	95	10.1	1.84	21.50	128794	1012	751	8.5	16.2
2136.0	2.3	35.0	95	10.1	1.95	21.95	131316	1567	756	8.5	16.2
2137.0	2.1	36.0	95	10.1	1.99	22.42	134030	1687	763	8.5	16.2
2138.0	4.5	36.0	95	10.1	1.76	22.64	135297	787.11	762.69	8.5	16.2
2139.0	1.7	35.0	95	10.1	2.03	23.22	138591	2047	771	8.5	16.2
2140.0	1.6	36.0	95	10.1	2.07	23.85	142154	2214	780	8.5	16.2
2141.0	4.1	37.0	95	10.1	1.81	24.09	143561	874.57	781.06	8.5	16.2
2142.0	3.2	37.0	95	10.1	1.88	24.41	145343	1107	783	8.5	16.2
2143.0	4.1	37.0	95	10.1	1.81	24.65	146733	863.90	783.66	8.5	16.2
2144.0	3.1	34.0	95	10.1	1.84	24.97	148560	1135	786	8.5	16.2
2145.0	4.3	34.0	95	10.1	1.75	25.20	149885	823.72	786.13	8.5	16.2
2146.0	6.3	34.0	95	10.0	1.65	25.36	150786	559.56	784.71	8.5	16.2
2147.0	5.0	34.0	95	10.0	1.72	25.56	151926	708.40	784.24	8.5	16.2
2148.0	6.4	34.0	95	10.0	1.65	25.72	152816	553.44	782.81	8.5	16.2
2149.0	6.4	36.0	95	10.0	1.68	25.87	153707	553.44	781.40	8.5	16.2
2150.0	6.7	36.0	95	10.0	1.66	26.02	154558	528.66	779.86	8.5	16.2
2151.0	5.9	32.0	95	10.0	1.64	26.19	155522	599.32	778.77	8.5	16.2
2152.0	6.0	33.0	95	10.0	1.65	26.36	156472	590.33	777.63	8.5	16.2
2153.0	2.5	33.0	95	10.0	1.91	26.76	158752	1417	781	8.5	16.2
2154.0	4.7	28.0	95	10.0	1.64	26.97	159965	753.62	781.30	8.5	16.2
2155.0	2.7	28.0	95	10.0	1.80	27.34	162076	1312	784	8.5	16.2
2156.0	1.9	34.0	95	10.0	2.01	27.87	165108	1884	791	8.5	16.2
2157.0	2.8	34.0	95	10.0	1.89	28.24	167166	1279	794	8.5	16.2
2158.0	3.2	32.0	95	10.0	1.82	28.55	168947	1107	796	8.5	16.2
2159.0	2.5	32.0	95	10.0	1.89	28.95	171218	1411	799	8.5	16.2
2160.0	3.6	32.0	95	10.0	1.78	29.22	172793	978.45	800.17	8.5	16.2
2161.0	1.9	32.0	95	10.0	1.97	29.75	175777	1854	806	8.5	16.2

BIT NUMBER	11	IADC CODE	527	INTERVAL	2161.0- 2324.5
HTC J33		SIZE	12.250	NOZZLES	14 14 14
CDST	6090.00	TRIP TIME	9.5	BIT RUN	163.5
TOTAL HOURS	35.81	TOTAL TURNS	204879	CONDITION	T4 R6 G0.188

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2162.0	1.5	9.0	95	10.1	1.47	0.66	3738	2300	41646	8.5	16.2
2163.0	1.6	28.0	95	10.1	1.92	1.28	7301	2214	22028	8.5	16.2
2164.0	2.9	30.0	95	10.1	1.80	1.63	9287	1234	15120	8.5	16.2
2165.0	3.5	30.0	95	10.1	1.75	1.92	10939	1027	11605	8.5	16.2
2166.0	7.7	31.0	95	10.1	1.54	2.05	11684	463	9381	8.5	16.2
2167.0	9.1	31.0	95	10.1	1.49	2.16	12310	389	7885	8.5	16.2
2168.0	9.1	31.0	95	10.1	1.49	2.27	12936	389	6816	8.5	16.2
2169.0	8.2	31.0	95	10.1	1.52	2.39	13633	434	6019	8.5	16.2
2170.0	8.5	31.0	95	10.1	1.51	2.51	14307	419	5397	8.5	16.2
2171.0	8.2	31.0	95	10.1	1.52	2.63	15002	432	4901	8.5	16.2
2172.0	8.5	31.0	95	10.1	1.51	2.75	15673	417	4494	8.5	16.2
2173.0	4.5	31.0	95	10.1	1.69	2.97	16939	787	4185	8.5	16.3
2174.0	10.4	31.0	95	10.1	1.45	3.07	17487	341	3890	8.5	16.3
2175.0	8.5	31.0	95	10.1	1.51	3.19	18161	419	3642	8.5	16.3
2176.0	8.9	30.0	95	10.1	1.48	3.30	18802	398	3426	8.5	16.3
2177.0	8.5	28.0	95	10.1	1.46	3.42	19472	417	3238	8.5	16.3
2178.0	6.9	28.0	95	10.1	1.52	3.56	20301	515	3078	8.5	16.3
2179.0	6.9	28.0	95	10.1	1.52	3.71	21127	513	2935	8.5	16.3
2180.0	6.3	29.0	95	10.1	1.56	3.87	22032	562	2811	8.5	16.3
2181.0	6.4	31.0	95	10.1	1.59	4.02	22922	553	2698	8.5	16.3
2182.0	6.2	30.0	95	10.1	1.58	4.18	23842	571	2597	8.5	16.3
2183.0	4.5	30.0	95	10.1	1.67	4.40	25108	787	2514	8.5	16.3
2184.0	5.9	30.0	95	10.1	1.60	4.57	26074	600	2431	8.5	16.3
2185.0	5.9	30.0	95	10.1	1.60	4.74	27040	600	2355	8.5	16.3
2186.0	6.4	30.0	95	10.1	1.57	4.90	27931	553	2283	8.5	16.3
2187.0	6.4	30.0	95	10.1	1.57	5.06	28822	553	2216	8.5	16.3
2188.0	7.2	31.0	96	10.1	1.56	5.20	29622	492	2153	8.5	16.3
2189.0	6.4	28.0	96	10.1	1.55	5.35	30522	553	2095	8.5	16.3
2190.0	8.2	30.0	96	10.1	1.51	5.47	31224	432	2038	8.5	16.3
2191.0	7.3	29.0	96	10.1	1.52	5.61	32013	485	1986	8.5	16.3
2192.0	8.2	29.0	96	10.1	1.49	5.73	32716	432	1936	8.5	16.3
2193.0	4.7	33.0	95	10.1	1.71	5.95	33928	754	1899	8.5	16.3
2194.0	3.0	36.0	95	10.1	1.88	6.28	35828	1181	1878	8.5	16.3
2195.0	4.6	35.0	95	10.1	1.74	6.50	37067	770	1845	8.5	16.3
2196.0	9.6	35.0	95	10.1	1.53	6.60	37661	369	1803	8.5	16.3
2197.0	8.9	35.0	95	10.1	1.55	6.71	38304	399	1764	8.5	16.3
2198.0	6.9	32.0	95	10.1	1.58	6.86	39132	515	1730	8.5	16.3
2199.0	7.7	32.0	95	10.1	1.55	6.99	39873	460	1697	8.5	16.3
2200.0	6.2	34.0	95	10.1	1.64	7.15	40792	571	1668	8.5	16.3
2201.0	6.3	34.0	95	10.1	1.63	7.31	41692	560	1640	8.5	16.3
2202.0	4.5	29.0	95	10.0	1.67	7.53	42959	787	1619	8.5	16.3
2203.0	3.0	26.0	95	10.0	1.73	7.86	44859	1181	1609	8.5	16.3
2204.0	3.2	26.0	95	10.0	1.71	8.17	46635	1103	1597	8.5	16.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2205.0	10.5	26.0	95	10.0	1.39	8.27	47178	337	1569	8.5	16.3
2206.0	9.6	25.0	95	10.0	1.40	8.37	47773	370	1542	8.5	16.3
2207.0	10.6	33.0	90	10.0	1.47	8.47	48283	334	1516	8.5	16.3
2208.0	7.3	34.0	90	10.0	1.59	8.61	49022	485	1494	8.5	16.3
2209.0	9.6	34.0	90	10.0	1.51	8.71	49585	369	1470	8.5	16.3
2210.0	9.6	34.0	90	10.0	1.51	8.81	50147	369	1448	8.5	16.3
2211.0	8.2	33.0	90	10.0	1.55	8.94	50808	434	1428	8.5	16.3
2212.0	10.0	33.0	90	10.0	1.49	9.04	51348	354	1406	8.5	16.3
2213.0	9.6	34.0	90	10.0	1.51	9.14	51911	369	1387	8.5	16.3
2214.0	8.2	34.0	90	10.0	1.56	9.26	52569	432	1369	8.5	16.3
2215.0	8.2	34.0	90	10.0	1.56	9.38	53228	432	1351	8.5	16.3
2216.0	7.3	35.0	90	10.0	1.61	9.52	53968	485	1335	8.5	16.3
2217.0	5.9	34.0	90	10.0	1.65	9.69	54881	599	1322	8.5	16.3
2218.0	7.3	33.0	90	10.0	1.58	9.83	55621	485	1308	8.5	16.3
2219.0	8.5	33.0	90	10.0	1.53	9.95	56256	417	1292	8.5	16.3
2220.0	7.8	33.0	90	10.0	1.56	10.07	56949	454	1278	8.5	16.3
2221.0	4.1	35.0	90	10.0	1.78	10.32	58282	875	1271	8.5	16.3
2222.0	7.8	35.0	90	10.0	1.59	10.45	58974	454	1258	8.5	16.3
2223.0	10.1	32.0	88	10.0	1.46	10.55	59497	351	1243	8.5	16.3
2224.0	4.5	37.0	100	10.0	1.81	10.77	60830	787	1236	8.5	16.3
2225.0	5.2	37.0	100	10.0	1.76	10.96	61975	676	1227	8.5	16.3
2226.0	5.2	35.0	90	10.0	1.70	11.15	63006	676	1219	8.5	16.3
2227.0	5.1	35.0	90	10.0	1.71	11.35	64061	692	1211	8.5	16.3
2228.0	4.1	35.0	90	10.0	1.78	11.59	65394	875	1206	8.5	16.3
2229.0	3.5	35.0	90	10.0	1.82	11.88	66932	1009	1203	8.5	16.3
2230.0	6.7	35.0	90	10.0	1.63	12.03	67738	529	1193	8.5	16.3
2231.0	5.0	34.0	90	10.0	1.70	12.23	68818	708	1186	8.5	16.3
2232.0	11.0	33.0	90	10.0	1.46	12.32	69309	322	1174	8.5	16.3
2233.0	5.1	32.0	90	10.0	1.67	12.51	70368	695	1167	8.5	16.3
2234.0	6.3	32.0	90	10.0	1.61	12.67	71225	562	1159	8.5	16.3
2235.0	8.5	29.0	90	10.0	1.48	12.79	71861	417	1149	8.5	16.3
2236.0	6.7	33.0	90	10.0	1.60	12.94	72667	529	1141	8.5	16.3
2237.0	6.3	32.0	90	10.0	1.61	13.10	73520	560	1133	8.5	16.3
2238.0	7.3	31.0	90	10.0	1.55	13.24	74259	485	1125	8.5	16.3
2239.0	8.9	31.0	90	10.0	1.49	13.35	74866	398	1115	8.5	16.3
2240.0	4.2	33.0	90	10.0	1.74	13.59	76152	843	1112	8.5	16.3
2241.0	6.3	38.0	94	10.0	1.70	13.74	77043	560	1105	8.5	16.3
2242.0	6.3	36.0	94	10.0	1.68	13.90	77934	560	1098	8.5	16.3
2243.0	7.7	35.0	94	10.0	1.61	14.03	78671	463	1091	8.5	16.3
2244.0	9.5	35.0	94	10.0	1.54	14.14	79267	374	1082	8.5	16.3
2245.0	10.6	34.0	96	10.0	1.50	14.23	79810	334	1073	8.5	16.3
2246.0	7.7	34.0	96	10.0	1.60	14.36	80563	463	1066	8.5	16.3
2247.0	6.9	34.0	96	10.0	1.63	14.51	81400	515	1060	8.5	16.3
2248.0	4.9	34.0	96	10.1	1.71	14.71	82576	723	1056	8.5	16.3
2249.0	2.6	36.0	98	10.1	1.93	15.10	84837	1362	1059	8.5	16.3
2250.0	4.0	34.0	98	10.1	1.78	15.35	86307	886	1057	8.5	16.3
2251.0	3.8	35.0	98	10.1	1.81	15.61	87855	932	1056	8.5	16.3
2252.0	3.3	35.0	98	10.2	1.83	15.91	89636	1073	1056	8.5	16.3
2253.0	2.5	35.0	98	10.2	1.91	16.32	92007	1428	1060	8.5	16.3
2254.0	2.6	35.0	98	10.2	1.90	16.70	94269	1362	1063	8.5	16.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2255.0	5.6	35.0	98	10.2	1.68	16.88	95315	630	1059	8.5	16.3
2256.0	6.7	35.0	98	10.2	1.62	17.03	96194	529	1053	8.5	16.3
2257.0	5.6	35.0	98	10.2	1.68	17.21	97240	630	1049	8.5	16.3
2258.0	3.6	36.0	98	10.2	1.82	17.48	98874	984	1048	8.5	16.4
2259.0	6.7	34.0	98	10.2	1.61	17.63	99751	529	1043	8.5	16.4
2260.0	7.2	34.0	98	10.2	1.59	17.77	100568	492	1037	8.5	16.4
2261.0	4.4	36.0	98	10.2	1.76	18.00	101920	814	1035	8.5	16.4
2262.0	7.2	34.0	98	10.2	1.59	18.14	102736	492	1030	8.5	16.4
2263.0	5.4	33.0	98	10.2	1.66	18.33	103825	656	1026	8.5	16.4
2264.0	5.6	34.0	98	10.2	1.66	18.50	104875	633	1022	8.5	16.4
2265.0	4.7	34.0	98	10.2	1.71	18.72	106126	754	1019	8.5	16.4
2266.0	5.0	32.0	98	10.2	1.67	18.92	107302	708	1017	8.5	16.4
2267.0	5.9	36.0	98	10.2	1.68	19.09	108299	600	1013	8.5	16.4
2268.0	3.9	36.0	98	10.2	1.80	19.35	109826	920	1012	8.5	16.4
2269.0	2.8	33.0	98	10.2	1.85	19.70	111926	1265	1014	8.5	16.4
2270.0	4.0	34.0	98	10.2	1.76	19.95	113396	886	1013	8.5	16.4
2271.0	5.0	35.0	98	10.2	1.71	20.15	114572	708	1010	8.5	16.4
2272.0	4.6	33.0	98	10.2	1.70	20.37	115851	770	1008	8.5	16.4
2273.0	6.7	32.0	98	10.2	1.58	20.52	116728	529	1004	8.5	16.4
2274.0	6.2	32.0	98	10.2	1.60	20.68	117677	571.29	999.87	8.5	16.4
2275.0	4.3	36.0	98	10.2	1.77	20.91	119044	823.72	998.32	8.5	16.4
2276.0	3.8	33.0	98	10.2	1.76	21.18	120591	932.11	997.74	8.5	16.4
2277.0	4.8	36.0	98	10.2	1.74	21.39	121816	737.92	995.50	8.5	16.4
2278.0	4.0	33.0	98	10.2	1.74	21.64	123286	885.50	994.56	8.5	16.4
2279.0	3.5	30.0	98	10.2	1.73	21.92	124966	1012	995	8.5	16.4
2280.0	5.0	29.0	98	10.2	1.62	22.12	126142	708.40	992.31	8.5	16.4
2281.0	2.7	29.0	98	10.2	1.79	22.49	128320	1312	995	8.5	16.4
2282.0	4.6	29.0	98	10.2	1.64	22.71	129593	766.67	993.08	8.5	16.4
2283.0	3.0	29.0	98	10.2	1.76	23.04	131553	1181	995	8.5	16.4
2284.0	4.5	29.0	98	10.2	1.65	23.26	132854	783.63	992.90	8.5	16.4
2285.0	4.3	29.0	98	10.2	1.66	23.50	134231	829.51	991.59	8.5	16.4
2286.0	5.6	34.0	98	10.2	1.66	23.68	135277	630.25	988.70	8.5	16.4
2287.0	5.4	36.0	98	10.2	1.70	23.86	136374	660.82	986.09	8.5	16.4
2288.0	3.5	32.0	98	10.2	1.77	24.15	138078	1027	986	8.5	16.4
2289.0	5.9	32.0	98	10.2	1.62	24.32	139082	604.44	983.43	8.5	16.4
2290.0	6.4	33.0	98	10.2	1.61	24.48	140001	553.44	980.10	8.5	16.4
2291.0	4.6	30.0	98	10.2	1.66	24.70	141279	770.00	978.48	8.5	16.4
2292.0	6.2	32.0	98	10.2	1.60	24.86	142227	571.29	975.37	8.5	16.4
2293.0	4.4	30.0	98	10.2	1.67	25.09	143576	812.39	974.14	8.5	16.4
2294.0	7.2	29.0	98	10.2	1.52	25.23	144394	492.63	970.52	8.5	16.4
2295.0	4.3	30.0	90	10.1	1.67	25.46	145649	823.72	969.42	8.5	16.4
2296.0	4.1	30.0	90	10.1	1.69	25.71	146983	874.57	968.72	8.5	16.4
2297.0	3.9	30.0	90	10.1	1.70	25.96	148367	908.21	968.28	8.5	16.4
2298.0	3.9	34.0	90	10.1	1.76	26.22	149770	920.00	967.92	8.5	16.4
2299.0	3.7	28.0	90	10.1	1.68	26.49	151241	965.12	967.90	8.5	16.4
2300.0	4.9	32.0	90	10.1	1.66	26.70	152343	722.86	966.14	8.5	16.4
2301.0	4.0	30.0	90	10.1	1.69	26.95	153687	881.09	965.53	8.5	16.4
2302.0	4.4	33.0	90	10.1	1.71	27.17	154906	799.55	964.36	8.5	16.4
2303.0	3.4	33.0	90	10.1	1.78	27.47	156494	1042	965	8.5	16.4
2304.0	4.4	33.0	90	10.1	1.71	27.69	157721	805.00	963.78	8.5	16.4

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2305.0	6.0	35.0	90	9.9	1.68	27.86	158621	590.33	961.19	8.5	16.4
2306.0	5.6	35.0	90	10.0	1.68	28.04	159585	632.50	958.92	8.5	16.4
2307.0	6.3	35.0	90	10.0	1.65	28.20	160439	559.56	956.19	8.5	16.4
2308.0	5.6	35.0	90	10.1	1.67	28.38	161403	632.50	953.99	8.5	16.4
2309.0	3.1	32.0	90	10.1	1.79	28.70	163145	1143	955	8.5	16.4
2310.0	1.9	34.0	90	10.1	1.97	29.24	166048	1904	962	8.5	16.4
2311.0	2.4	31.0	90	10.1	1.85	29.65	168270	1458	965	8.5	16.4
2312.0	1.5	34.0	90	10.1	2.03	30.30	171777	2300	974	8.5	16.4
2313.0	1.6	37.0	100	10.1	2.10	30.92	175527	2214	982	8.5	16.4
2314.0	1.5	38.0	100	10.1	2.14	31.59	179554	2377	991	8.5	16.4
2315.0	1.3	36.0	100	10.1	2.15	32.36	184169	2725	1002	8.5	16.4
2316.0	1.8	44.0	100	10.1	2.18	32.92	187502	1968	1009	8.5	16.4
2317.0	2.3	38.0	100	10.1	2.01	33.35	190111	1540	1012	8.5	16.4
2318.0	5.4	34.0	100	10.1	1.70	33.54	191222	656	1010	8.5	16.4
2319.0	5.9	35.0	100	10.1	1.68	33.71	192239	600	1007	8.5	16.4
2320.0	5.6	37.0	100	10.1	1.73	33.89	193310	633	1005	8.5	16.4
2321.0	5.9	37.0	100	10.1	1.71	34.05	194326	599	1002	8.5	16.4
2322.0	2.4	37.0	100	10.1	1.99	34.48	196879	1507	1005	8.5	16.4
2323.0	2.0	35.0	100	10.1	2.00	34.98	199879	1771	1010	8.5	16.4
2324.0	1.2	38.0	100	10.1	2.21	35.81	204879	2952	1022	8.5	16.4
2324.5	1.3	37.0	100	10.1	2.16	36.22	207325	2725	1027	8.5	16.4

BIT NUMBER	12	IADC CODE	527	INTERVAL	2324.5- 2521.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.2	BIT RUN	196.5
TOTAL HOURS	45.29	TOTAL TURNS	252275	CONDITION	T6 B6 G0.250

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2325.0	4.8	18.0	80	10.1	1.40	0.10	460	738	92517	8.5	16.4
2326.0	5.2	18.0	82	10.1	1.39	0.29	1406	681	29616	8.5	16.4
2327.0	5.0	19.0	85	10.1	1.43	0.49	2426	708	17865	8.5	16.4
2328.0	5.2	25.0	90	10.1	1.54	0.68	3465	681	12898	8.5	16.4
2329.0	9.1	25.0	90	10.1	1.39	0.79	4058	389	10094	8.5	16.4
2330.0	7.7	25.0	90	10.1	1.43	0.92	4764	463	8330	8.5	16.4
2331.0	9.6	22.0	90	10.1	1.33	1.03	5328	370	7098	8.5	16.4
2332.0	7.7	28.0	90	10.1	1.48	1.16	6034	463	6208	8.5	16.4
2333.0	8.2	32.0	90	10.1	1.52	1.28	6693	432	5526	8.5	16.4
2334.0	8.9	32.0	90	10.1	1.49	1.39	7301	399	4984	8.5	16.4
2335.0	5.6	32.0	90	10.1	1.62	1.57	8262	630	4567	8.5	16.4
2336.0	6.1	31.0	90	10.1	1.59	1.73	9147	581	4220	8.5	16.4
2337.0	4.5	31.0	90	10.1	1.67	1.96	10347	787	3944	8.5	16.4
2338.0	5.6	30.0	90	10.1	1.60	2.13	11312	633	3698	8.5	16.4
2339.0	3.6	30.0	90	10.1	1.72	2.41	12812	984	3510	8.5	16.4
2340.0	3.1	30.0	90	10.1	1.76	2.74	14559	1146	3357	8.5	16.4
2341.0	3.1	34.0	90	10.1	1.83	3.06	16301	1143	3223	8.5	16.4
2342.0	3.5	30.0	80	10.1	1.69	3.34	17669	1009	3096	8.5	16.4
2343.0	6.7	30.0	80	10.1	1.51	3.49	18386	529	2957	8.5	16.4
2344.0	4.0	29.0	80	10.1	1.64	3.74	19592	890	2851	8.5	16.4
2345.0	1.7	28.0	110	10.1	1.94	4.32	23407	2047	2812	8.5	16.4
2346.0	3.0	29.0	110	10.1	1.81	4.65	25607	1181	2736	8.5	16.4
2347.0	2.6	33.0	103	10.1	1.90	5.04	27984	1362	2674	8.5	16.4
2348.0	6.7	31.0	103	10.1	1.60	5.19	28907	529	2583	8.5	16.4
2349.0	10.4	30.0	103	10.1	1.46	5.28	29501	341	2491	8.5	16.5
2350.0	6.2	29.0	103	10.1	1.59	5.45	30498	571	2416	8.5	16.5
2351.0	5.0	28.0	103	10.1	1.63	5.65	31734	708	2351	8.5	16.5
2352.0	4.0	30.0	103	10.1	1.73	5.90	33279	886	2298	8.5	16.5
2353.0	3.6	30.0	103	10.1	1.76	6.18	35015	995	2252	8.5	16.5
2354.0	2.8	35.0	109	10.1	1.93	6.53	37350	1265	2219	8.5	16.5
2355.0	5.4	30.0	109	10.1	1.66	6.72	38561	656	2167	8.5	16.5
2356.0	6.3	30.0	109	10.1	1.62	6.88	39600	562	2116	8.5	16.5
2357.0	7.2	33.0	110	10.1	1.63	7.02	40516	492	2066	8.5	16.5
2358.0	4.4	33.0	110	10.1	1.77	7.25	42033	814	2029	8.5	16.5
2359.0	4.6	34.0	110	10.1	1.77	7.46	43468	770	1992	8.5	16.5
2360.0	3.4	34.0	110	10.1	1.86	7.76	45409	1042	1966	8.5	16.5
2361.0	2.5	34.0	110	10.1	1.95	8.16	48049	1417	1950	8.5	16.5
2362.0	8.5	34.0	110	10.1	1.59	8.28	48826	417	1910	8.5	16.5
2363.0	7.8	33.0	110	10.1	1.60	8.40	49672	454	1872	8.5	16.5
2364.0	7.3	34.0	110	10.1	1.64	8.54	50576	485	1837	8.5	16.5
2365.0	6.4	34.0	110	10.1	1.67	8.70	51607	553	1805	8.5	16.5
2366.0	7.2	35.0	110	10.1	1.65	8.84	52524	492	1773	8.5	16.5
2367.0	5.9	33.0	110	10.1	1.68	9.01	53643	600	1746	8.5	16.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2368.0	5.4	34.0	110	10.1	1.72	9.19	54865	656	1720	8.5	16.5
2369.0	5.4	33.0	90	10.1	1.65	9.38	55865	656	1697	8.5	16.5
2370.0	3.5	34.0	93	10.1	1.80	9.66	57455	1009	1681	8.5	16.5
2371.0	3.0	34.0	90	10.1	1.84	10.00	59285	1201	1671	8.5	16.5
2372.0	2.6	35.0	90	10.1	1.89	10.38	61362	1362	1665	8.5	16.5
2373.0	2.6	38.0	90	10.1	1.94	10.77	63439	1362	1658	8.5	16.5
2374.0	3.8	38.0	90	10.1	1.83	11.03	64856	930	1644	8.5	16.5
2375.0	3.3	35.0	90	10.1	1.82	11.33	66493	1073	1632	8.5	16.5
2376.0	6.3	35.0	90	10.1	1.63	11.49	67350	562	1612	8.5	16.5
2377.0	6.9	35.0	90	10.1	1.61	11.64	68132	513	1591	8.5	16.5
2378.0	6.3	35.0	90	10.1	1.63	11.80	68986	560	1571	8.5	16.5
2379.0	4.0	36.0	90	10.1	1.78	12.05	70329	881	1559	8.5	16.5
2380.0	3.3	36.0	90	10.1	1.84	12.35	71985	1087	1550	8.5	16.5
2381.0	3.3	36.0	90	10.1	1.84	12.65	73622	1073	1542	8.5	16.5
2382.0	4.0	36.0	90	10.1	1.78	12.90	74972	886	1530	8.5	16.5
2383.0	5.4	36.0	90	10.1	1.70	13.09	75979	661	1515	8.5	16.5
2384.0	5.6	36.0	90	10.1	1.68	13.27	76945	634	1501	8.5	16.5
2385.0	3.2	31.0	90	10.1	1.77	13.58	78627	1103	1494	8.5	16.5
2386.0	4.4	32.0	90	10.1	1.69	13.81	79846	800	1483	8.5	16.5
2387.0	4.0	33.0	90	10.1	1.74	14.06	81196	886	1473	8.5	16.5
2388.0	6.7	34.0	90	10.1	1.60	14.21	82003	529	1458	8.5	16.5
2389.0	5.1	32.0	90	10.1	1.65	14.40	83062	695	1446	8.5	16.5
2390.0	3.2	32.0	90	10.1	1.78	14.71	84745	1103	1441	8.5	16.5
2391.0	2.9	32.0	90	10.1	1.81	15.06	86588	1209	1438	8.5	16.5
2392.0	5.2	35.0	90	10.1	1.69	15.25	87626	681	1426	8.5	16.5
2393.0	6.2	35.0	90	10.1	1.64	15.41	88497	571	1414	8.5	16.5
2394.0	7.2	35.0	90	10.1	1.59	15.55	89247	492	1401	8.5	16.5
2395.0	8.2	33.0	90	10.1	1.53	15.67	89906	432	1387	8.5	16.5
2396.0	6.7	33.0	90	10.1	1.59	15.82	90711	529	1375	8.5	16.5
2397.0	7.7	33.0	90	10.1	1.55	15.95	91417	463	1362	8.5	16.5
2398.0	2.5	33.0	90	10.1	1.87	16.35	93595	1428	1363	8.5	16.5
2399.0	2.0	35.0	90	10.1	1.97	16.85	96281	1762	1369	8.5	16.5
2400.0	2.5	33.0	90	10.1	1.87	17.25	98459	1428	1369	8.5	16.5
2401.0	2.6	32.0	90	10.1	1.84	17.63	100512	1347	1369	8.5	16.5
2402.0	5.1	30.0	90	10.1	1.62	17.83	101571	695	1360	8.5	16.5
2403.0	6.7	36.0	90	10.1	1.63	17.98	102377	529	1350	8.5	16.5
2404.0	6.8	35.0	90	10.1	1.61	18.13	103171	521	1339	8.5	16.5
2405.0	6.7	35.0	90	10.1	1.62	18.28	103977	529	1329	8.5	16.5
2406.0	6.4	30.0	90	10.1	1.56	18.43	104821	553	1320	8.5	16.5
2407.0	6.2	30.0	90	10.1	1.57	18.59	105692	571	1311	8.5	16.5
2408.0	6.2	30.0	90	10.1	1.57	18.75	106563	571	1302	8.5	16.5
2409.0	5.1	29.0	90	10.1	1.61	18.95	107621	695	1295	8.5	16.5
2410.0	5.6	29.0	90	10.1	1.58	19.13	108586	633	1287	8.5	16.5
2411.0	5.3	30.0	90	10.1	1.61	19.32	109605	668	1280	8.5	16.5
2412.0	5.2	30.0	90	10.1	1.61	19.51	110635	676	1273	8.5	16.5
2413.0	8.5	29.0	90	10.1	1.47	19.63	111273	419	1263	8.5	16.5
2414.0	7.3	29.0	90	10.1	1.51	19.76	112012	485	1254	8.5	16.5
2415.0	6.7	29.0	90	10.1	1.53	19.91	112819	529	1246	8.5	16.5
2416.0	5.9	30.0	90	10.1	1.58	20.08	113733	599	1239	8.5	16.5
2417.0	2.6	29.0	90	10.1	1.79	20.47	115810	1362	1241	8.5	16.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2418.0	3.0	33.0	90	10.1	1.82	20.81	117640	1201	1240	8.5	16.5
2419.0	4.0	30.0	90	10.1	1.69	21.06	118984	881	1236	8.5	16.5
2420.0	2.8	29.0	90	10.1	1.77	21.41	120912	1265	1237	8.5	16.5
2421.0	3.0	29.0	90	10.1	1.75	21.75	122712	1181	1236	8.5	16.5
2422.0	3.0	29.0	90	10.1	1.76	22.08	124530	1193	1236	8.5	16.5
2423.0	3.1	29.0	90	10.1	1.74	22.40	126261	1135	1235	8.5	16.5
2424.0	7.3	28.0	90	10.1	1.49	22.54	127000	485	1227	8.5	16.5
2425.0	7.8	32.0	90	10.1	1.53	22.67	127692	454	1219	8.5	16.5
2426.0	6.4	33.0	90	10.1	1.60	22.82	128536	553	1213	8.5	16.5
2427.0	7.2	35.0	90	10.1	1.59	22.96	129287	493	1206	8.5	16.5
2428.0	5.2	31.0	90	10.1	1.63	23.15	130318	676	1201	8.5	16.5
2429.0	2.2	36.0	90	10.1	1.96	23.61	132772	1610	1205	8.5	16.5
2430.0	2.7	34.0	90	10.1	1.87	23.98	134795	1327	1206	8.5	16.5
2431.0	2.9	34.0	90	10.1	1.85	24.33	136676	1234	1206	8.5	16.5
2432.0	4.4	34.0	90	10.1	1.72	24.56	137895	800	1202	8.5	16.5
2433.0	7.2	35.0	90	10.1	1.59	24.70	138645	492	1196	8.5	16.5
2434.0	8.5	35.0	90	10.1	1.55	24.81	139280	417	1189	8.5	16.5
2435.0	7.6	35.0	90	10.1	1.58	24.95	139991	466	1182	8.5	16.5
2436.0	8.9	35.0	90	10.1	1.53	25.06	140598	398	1175	8.5	16.5
2437.0	5.2	34.0	90	10.1	1.67	25.25	141628	676	1171	8.5	16.5
2438.0	2.5	34.0	90	10.1	1.89	25.66	143823	1440	1173	8.5	16.5
2439.0	6.2	34.0	90	10.1	1.62	25.82	144694	571	1168	8.5	16.6
2440.0	7.2	34.0	90	10.1	1.58	25.96	145444	492	1162	8.5	16.6
2441.0	4.7	33.0	90	10.1	1.69	26.17	146593	754	1158	8.5	16.6
2442.0	8.2	31.0	90	10.1	1.50	26.29	147252	432	1152	8.5	16.6
2443.0	4.8	34.0	90	10.1	1.70	26.50	148377	738	1149	8.5	16.6
2444.0	3.3	36.0	90	10.1	1.84	26.80	150013	1073	1148	8.5	16.6
2445.0	2.8	37.0	90	10.1	1.91	27.16	151963	1279	1149	8.5	16.6
2446.0	2.5	37.0	90	10.1	1.93	27.56	154089	1394	1151	8.5	16.6
2447.0	4.3	37.0	90	10.1	1.78	27.79	155344	824	1149	8.5	16.6
2448.0	7.6	37.0	90	10.1	1.61	27.92	156055	466	1143	8.5	16.6
2449.0	5.6	37.0	90	10.1	1.70	28.10	157019	633	1139	8.5	16.6
2450.0	6.7	37.0	90	10.0	1.67	28.25	157825	529	1134	8.5	16.6
2451.0	6.2	37.0	90	10.0	1.69	28.41	158696	571	1130	8.5	16.6
2452.0	6.2	37.0	90	10.0	1.69	28.57	159567	571	1125	8.5	16.6
2453.0	6.3	37.0	90	10.0	1.68	28.73	160420	560	1121	8.5	16.6
2454.0	2.8	38.0	90	9.9	1.95	29.09	162349	1265	1122	8.5	16.6
2455.0	3.4	38.0	90	10.0	1.89	29.38	163961	1057	1121	8.5	16.6
2456.0	3.4	38.0	90	10.0	1.89	29.68	165549	1042	1121	8.5	16.6
2457.0	2.6	38.0	90	10.0	1.97	30.07	167658	1384	1123	8.5	16.6
2458.0	3.6	38.0	90	10.0	1.87	30.35	169175	995	1122	8.5	16.6
2459.0	9.1	33.0	90	9.9	1.53	30.46	169768	389	1116	8.5	16.6
2460.0	8.5	33.0	90	9.9	1.55	30.58	170406	419	1111	8.5	16.6
2461.0	12.1	34.0	90	9.9	1.46	30.66	170852	293	1105	8.5	16.6
2462.0	5.9	30.0	90	9.9	1.61	30.83	171774	604	1102	8.5	16.6
2463.0	3.5	32.0	90	9.9	1.80	31.12	173339	1027	1101	8.5	16.6
2464.0	3.3	32.0	90	9.9	1.82	31.43	174996	1087	1101	8.5	16.6
2465.0	3.8	30.0	90	9.9	1.74	31.69	176420	935	1100	8.5	16.6
2466.0	2.3	34.0	90	9.9	1.95	32.13	178768	1540	1103	8.5	16.6
2467.0	3.8	34.0	90	9.9	1.80	32.39	180186	930	1102	8.5	16.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2468.0	9.1	34.0	90	9.9	1.54	32.50	180778	389	1097	8.5	16.6
2469.0	6.4	34.0	90	9.9	1.65	32.65	181622	553	1093	8.5	16.6
2470.0	6.4	35.0	90	10.0	1.65	32.81	182466	553	1089	8.5	16.6
2471.0	4.4	35.0	90	10.0	1.76	33.04	183707	814	1087	8.5	16.6
2472.0	4.8	35.0	90	10.0	1.73	33.25	184832	738	1085	8.5	16.6
2473.0	4.5	35.0	90	10.0	1.75	33.47	186027	784	1083	8.5	16.6
2474.0	2.7	35.0	90	10.0	1.90	33.84	188027	1312	1084	8.5	16.6
2475.0	2.9	35.0	90	10.0	1.88	34.18	189883	1217	1085	8.5	16.6
2476.0	5.0	34.0	90	10.0	1.70	34.38	190963	708	1083	8.5	16.6
2477.0	3.8	34.0	90	10.0	1.79	34.65	192387	935	1082	8.5	16.6
2478.0	6.3	34.0	90	10.0	1.63	34.81	193240	560	1078	8.5	16.6
2479.0	4.4	34.0	90	10.0	1.74	35.04	194482	814	1077	8.5	16.6
2480.0	8.5	34.0	90	10.0	1.55	35.15	195120	419	1073	8.5	16.6
2481.0	5.1	34.0	90	10.0	1.70	35.35	196175	692	1070	8.5	16.6
2482.0	5.9	34.0	90	10.0	1.66	35.52	197090	600	1067	8.5	16.6
2483.0	3.5	34.0	90	10.0	1.81	35.80	198629	1009	1067	8.5	16.6
2484.0	4.9	38.0	90	10.0	1.77	36.01	199731	723	1065	8.5	16.6
2485.0	2.4	38.0	90	10.0	1.99	36.43	202028	1507	1067	8.5	16.6
2486.0	2.4	34.0	90	10.0	1.92	36.85	204278	1476	1070	8.5	16.6
2487.0	5.0	34.0	90	10.0	1.70	37.05	205358	708	1068	8.5	16.6
2488.0	6.3	34.0	90	10.0	1.64	37.21	206216	562	1065	8.5	16.6
2489.0	6.9	34.0	90	10.0	1.61	37.35	207000	515	1061	8.5	16.6
2490.0	7.7	34.0	90	10.0	1.58	37.49	207706	463	1058	8.5	16.6
2491.0	6.4	34.0	90	10.0	1.63	37.64	208550	553	1055	8.5	16.6
2492.0	7.2	34.0	90	10.0	1.60	37.78	209301	493	1051	8.5	16.6
2493.0	5.4	34.0	90	10.0	1.68	37.97	210309	661	1049	8.5	16.6
2494.0	2.2	35.0	90	10.0	1.96	38.42	212730	1588	1052	8.5	16.6
2495.0	2.0	33.0	90	10.0	1.96	38.93	215485	1807	1057	8.5	16.6
2496.0	2.1	33.0	90	10.0	1.94	39.40	218069	1695	1060	8.5	16.6
2497.0	4.1	33.0	90	10.0	1.75	39.65	219402	875	1059	8.5	16.6
2498.0	7.8	33.0	90	10.0	1.56	39.78	220095	454	1056	8.5	16.6
2499.0	5.1	34.0	90	10.0	1.70	39.97	221149	692	1054	8.5	16.6
2500.0	5.9	34.0	90	10.0	1.66	40.15	222071	604	1051	8.5	16.6
2501.0	10.3	34.0	90	10.0	1.49	40.24	222595	344	1047	8.5	16.6
2502.0	10.0	34.0	90	10.0	1.50	40.34	223135	354	1043	8.5	16.6
2503.0	9.1	34.0	90	10.0	1.53	40.45	223728	389	1039	8.5	16.6
2504.0	10.6	34.0	90	10.0	1.48	40.55	224237	334	1036	8.5	16.6
2505.0	9.1	34.0	100	10.0	1.56	40.66	224897	389	1032	8.5	16.6
2506.0	5.9	32.0	100	10.0	1.66	40.83	225914	600	1030	8.5	16.6
2507.0	5.9	32.0	100	10.0	1.66	41.00	226930	600	1027	8.5	16.6
2508.0	4.0	33.0	100	10.0	1.78	41.24	228423	881	1026	8.5	16.6
2509.0	6.2	33.0	100	10.0	1.66	41.41	229395	574	1024	8.5	16.6
2510.0	6.9	32.0	100	10.0	1.61	41.55	230268	515	1021	8.5	16.6
2511.0	6.4	30.0	100	10.0	1.60	41.71	231205	553	1019	8.5	16.6
2512.0	4.8	32.0	100	10.0	1.72	41.92	232455	738	1017	8.5	16.6
2513.0	4.9	32.0	100	10.0	1.71	42.12	233680	723	1016	8.5	16.6
2514.0	7.3	32.0	100	10.0	1.59	42.26	234500	485	1013	8.5	16.6
2515.0	2.1	34.0	95	10.0	1.98	42.74	237281	1728	1017	8.5	16.6
2516.0	2.2	33.0	95	10.0	1.94	43.20	239860	1603	1020	8.5	16.6
2517.0	2.1	36.0	95	10.0	2.02	43.69	242641	1728	1023	8.5	16.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2518.0	1.8	37.0	100	10.0	2.09	44.24	245974	1968	1028	8.5	16.6
2519.0	2.2	36.0	100	10.0	2.01	44.69	248689	1603	1031	8.5	16.6
2520.0	2.5	36.0	100	10.0	1.97	45.09	251051	1394	1033	8.5	16.6
2521.0	4.9	36.0	100	9.9	1.79	45.29	252275	723	1031	8.5	16.6

BIT NUMBER	13	IADC CODE	316	INTERVAL	2521.0- 2535.0
HTC J7		SIZE	12.250	NOZZLES	14 14 14
COST	1800.00	TRIP TIME	10.2	BIT RUN	14.0
TOTAL HOURS	6.20	TOTAL TURNS	20696	CONDITION	T3 B2 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2522.0	3.2	30.0	82	10.0	1.75	0.31	1538	1107	39035	8.5	16.6
2523.0	6.3	38.0	95	10.0	1.71	0.47	2438	560	19797	8.5	16.6
2524.0	5.1	36.0	92	10.0	1.74	0.67	3520	695	13430	8.5	16.6
2525.0	3.7	40.0	95	10.0	1.91	0.94	5061	957	10312	8.5	16.6
2526.0	4.7	35.0	96	10.0	1.76	1.15	6286	754	8400	8.5	16.6
2527.0	6.9	36.0	97	10.0	1.67	1.29	7132	515	7086	8.5	16.6
2528.0	1.8	37.0	92	10.0	2.08	1.86	10269	2013	6361	8.5	16.6
2529.0	1.7	34.0	70	10.1	1.93	2.44	12682	2036	5820	8.5	16.6
2530.0	1.4	35.0	35	10.1	1.81	3.16	14193	2548	5457	8.5	16.6
2531.0	3.0	35.0	36	10.1	1.59	3.50	14925	1201	5031	8.5	16.7
2532.0	3.0	36.0	36	10.1	1.59	3.83	15638	1169	4680	8.5	16.7
2533.0	2.5	36.0	36	10.1	1.65	4.22	16499	1411	4408	8.5	16.7
2534.0	1.0	37.0	36	10.1	1.93	5.20	18596	3439	4333	8.5	16.7
2535.0	1.0	38.0	35	10.1	1.94	6.20	20696	3542	4277	8.5	16.7

BIT NUMBER	14	IADC CODE	527	INTERVAL	2535.0- 2600.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.4	BIT RUN	65.0
TOTAL HOURS	8.77	TOTAL TURNS	53719	CONDITION	T5 B3 G0.125

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2536.0	10.1	25.0	85	10.0	1.36	0.10	505	351	43277	8.5	16.7
2537.0	12.6	33.0	125	10.0	1.52	0.18	1100	281	21779	8.5	16.7
2538.0	14.6	36.0	140	10.0	1.54	0.25	1676	243	14600	8.5	16.7
2539.0	13.5	38.0	130	10.0	1.57	0.32	2253	262	11016	8.5	16.7
2540.0	12.9	40.0	131	10.0	1.61	0.40	2863	275	8868	8.5	16.7
2541.0	13.6	40.0	126	10.0	1.58	0.47	3418	260	7433	8.5	16.7
2542.0	13.9	38.0	127	10.0	1.56	0.54	3967	255	6408	8.5	16.7
2543.0	13.7	40.0	127	10.0	1.58	0.62	4523	259	5639	8.5	16.7
2544.0	15.9	38.0	123	10.0	1.50	0.68	4987	223	5037	8.5	16.7
2545.0	13.6	40.0	120	10.0	1.57	0.75	5516	260	4560	8.5	16.7
2546.0	10.0	33.0	105	10.0	1.53	0.85	6146	354	4177	8.5	16.7
2547.0	9.6	34.0	75	10.0	1.46	0.96	6615	369	3860	8.5	16.7
2548.0	6.7	32.0	85	10.0	1.57	1.11	7376	529	3604	8.5	16.7
2549.0	5.7	40.0	75	10.0	1.69	1.28	8166	621	3391	8.5	16.7
2550.0	2.4	40.0	116	10.0	2.09	1.70	11066	1476	3263	8.5	16.7
2551.0	3.4	45.0	130	10.0	2.10	1.99	13360	1042	3124	8.5	16.7
2552.0	7.3	50.0	126	10.0	1.91	2.13	14394	485	2969	8.5	16.7
2553.0	5.6	48.0	128	10.0	1.97	2.31	15761	630	2839	8.5	16.7
2554.0	10.0	50.0	120	10.0	1.79	2.41	16481	354	2708	8.5	16.7
2555.0	15.6	50.0	120	10.0	1.64	2.47	16942	227	2584	8.5	16.7
2556.0	8.2	41.0	120	10.0	1.74	2.59	17820	432	2482	8.5	16.7
2557.0	13.2	48.0	126	10.0	1.69	2.67	18393	268	2381	8.5	16.7
2558.0	11.2	48.0	126	10.0	1.74	2.76	19068	316	2291	8.5	16.7
2559.0	12.4	48.0	128	10.0	1.71	2.84	19687	286	2208	8.5	16.7
2560.0	11.0	49.0	125	10.0	1.76	2.93	20369	322	2132	8.5	16.7
2561.0	10.1	49.0	125	10.0	1.79	3.03	21112	351	2064	8.5	16.7
2562.0	14.2	46.0	96	10.0	1.55	3.10	21517	249	1997	8.5	16.7
2563.0	10.0	48.0	73	10.0	1.60	3.20	21955	354	1938	8.5	16.7
2564.0	8.9	48.0	73	10.0	1.64	3.31	22448	398	1885	8.5	16.7
2565.0	8.2	48.0	73	10.0	1.67	3.43	22984	434	1836	8.5	16.7
2566.0	10.5	48.0	98	10.0	1.68	3.53	23544	337	1788	8.5	16.7
2567.0	8.9	48.0	115	10.0	1.79	3.64	24319	398	1745	8.5	16.7
2568.0	11.2	48.0	110	10.0	1.70	3.73	24908	316	1701	8.5	16.7
2569.0	10.3	48.0	100	10.0	1.69	3.83	25491	344	1661	8.5	16.7
2570.0	6.9	48.0	105	9.9	1.86	3.97	26406	515	1629	8.5	16.7
2571.0	3.7	52.0	100	9.9	2.11	4.25	28041	965	1610	8.5	16.7
2572.0	4.7	52.0	100	9.9	2.02	4.46	29318	754	1587	8.5	16.7
2573.0	9.6	52.0	100	9.9	1.78	4.56	29943	369	1555	8.5	16.7
2574.0	9.6	52.0	100	9.9	1.78	4.67	30568	369	1525	8.5	16.7
2575.0	5.7	52.0	100	9.9	1.96	4.84	31624	624	1502	8.5	16.7
2576.0	3.3	52.0	105	9.9	2.16	5.14	33522	1067	1491	8.5	16.7
2577.0	6.2	52.0	105	9.9	1.95	5.31	34538	571	1470	8.5	16.7
2578.0	12.2	52.0	105	9.9	1.72	5.39	35054	290	1442	8.5	16.7

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2579.0	11.5	52.0	100	9.9	1.72	5.47	35576	308	1416	8.5	16.7
2580.0	3.6	52.0	100	9.9	2.11	5.75	37243	984	1407	8.5	16.7
2581.0	4.0	52.0	100	10.0	2.06	6.00	38750	890	1395	8.5	16.7
2582.0	9.1	51.0	97	10.0	1.76	6.11	39390	389	1374	8.5	16.7
2583.0	10.5	42.0	95	10.0	1.60	6.21	39933	337	1352	8.5	16.7
2584.0	10.4	53.0	100	10.0	1.75	6.31	40510	341	1332	8.5	16.7
2585.0	5.6	46.0	87	10.1	1.80	6.48	41439	630	1318	8.5	16.7
2586.0	9.6	47.0	93	10.1	1.67	6.59	42020	369	1299	8.5	16.7
2587.0	9.6	47.0	93	10.1	1.67	6.69	42601	369	1281	8.5	16.7
2588.0	4.6	49.0	100	10.1	1.95	6.91	43903	768	1272	8.5	16.7
2589.0	8.5	50.0	100	10.1	1.76	7.03	44612	419	1256	8.5	16.7
2590.0	8.7	48.0	102	10.1	1.74	7.14	45319	409	1240	8.5	16.7
2591.0	4.4	46.0	101	10.1	1.93	7.37	46687	800	1233	8.5	16.7
2592.0	6.9	48.0	98	10.1	1.80	7.51	47539	513	1220	8.5	16.7
2593.0	9.1	47.0	100	10.1	1.71	7.62	48198	389	1206	8.5	16.7
2594.0	12.3	49.0	93	10.1	1.61	7.70	48652	288	1190	8.5	16.7
2595.0	9.0	49.0	93	10.1	1.71	7.82	49272	394	1177	8.5	16.7
2596.0	8.9	48.0	105	10.1	1.74	7.93	49980	398	1164	8.5	16.7
2597.0	11.3	48.0	105	10.1	1.66	8.02	50537	313	1150	8.5	16.7
2598.0	4.2	52.0	70	10.1	1.90	8.25	51537	843	1145	8.5	16.7
2599.0	3.8	48.0	70	10.1	1.88	8.52	52639	930	1142	8.5	16.7
2600.0	4.0	49.0	72	10.1	1.89	8.77	53719	886	1138	8.5	16.7

BIT NUMBER	15	IADC CODE	527	INTERVAL	2600.0- 2663.3
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	10.7	BIT RUN	63.3
TOTAL HOURS	13.94	TOTAL TURNS	76380	CONDITION	T3 B3 G0.125

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2601.0	6.0	48.0	70	10.1	1.74	0.17	700	590	44580	8.5	16.7
2602.0	3.9	55.0	72	10.1	1.98	0.43	1822	920	22750	8.5	16.7
2603.0	3.1	48.0	70	10.1	1.95	0.75	3177	1143	15547	8.5	16.7
2604.0	3.2	48.0	72	10.1	1.95	1.06	4523	1103	11936	8.5	16.7
2605.0	2.5	48.0	100	10.1	2.13	1.46	6913	1411	9831	8.5	16.7
2606.0	4.2	48.0	100	10.1	1.97	1.70	8345	845	8334	8.5	16.7
2607.0	4.0	48.0	90	10.1	1.95	1.95	9688	881	7269	8.5	16.7
2608.0	3.6	48.0	85	10.1	1.97	2.23	11121	995	6485	8.5	16.7
2609.0	4.4	50.0	100	10.1	1.98	2.45	12475	800	5853	8.5	16.7
2610.0	3.8	50.0	90	10.1	1.99	2.72	13893	930	5361	8.5	16.7
2611.0	5.1	50.0	90	10.1	1.89	2.91	14947	692	4936	8.5	16.7
2612.0	4.0	50.0	90	10.1	1.97	3.16	16291	881	4598	8.5	16.7
2613.0	9.1	50.0	90	10.1	1.71	3.27	16884	389	4275	8.5	16.7
2614.0	12.6	50.0	90	10.1	1.60	3.35	17313	281	3989	8.5	16.7
2615.0	16.0	48.0	87	10.0	1.50	3.41	17639	221	3738	8.5	16.7
2616.0	12.8	48.0	87	10.0	1.58	3.49	18047	277	3522	8.5	16.7
2617.0	12.9	49.0	89	10.0	1.59	3.57	18461	275	3331	8.5	16.7
2618.0	10.8	49.0	89	10.0	1.65	3.66	18955	328	3164	8.5	16.7
2619.0	3.7	48.0	90	10.0	2.00	3.93	20427	965	3048	8.5	16.7
2620.0	4.5	50.0	85	10.0	1.94	4.15	21555	784	2935	8.5	16.7
2621.0	3.8	49.0	83	10.0	1.97	4.42	22869	935	2840	8.5	16.7
2622.0	5.4	49.0	95	10.0	1.90	4.60	23924	656	2740	8.5	16.7
2623.0	3.2	49.0	95	10.0	2.07	4.91	25706	1107	2669	8.5	16.7
2624.0	3.2	49.0	97	10.0	2.08	5.23	27524	1107	2604	8.5	16.8
2625.0	1.9	53.0	87	10.0	2.28	5.75	30272	1864	2575	8.5	16.8
2626.0	3.5	52.0	93	10.0	2.08	6.04	31866	1012	2515	8.5	16.8
2627.0	4.3	56.0	90	10.0	2.05	6.27	33131	830	2452	8.5	16.8
2628.0	4.3	56.0	90	10.0	2.05	6.51	34395	830	2394	8.5	16.8
2629.0	3.5	55.0	90	10.0	2.11	6.79	35934	1009	2347	8.5	16.8
2630.0	4.8	56.0	87	10.0	2.00	7.00	37021	738	2293	8.5	16.8
2631.0	4.0	53.0	87	10.0	2.03	7.25	38333	890	2248	8.5	16.8
2632.0	4.4	53.0	87	10.0	1.99	7.48	39511	800	2202	8.5	16.8
2633.0	4.0	54.0	90	10.0	2.05	7.73	40868	890	2163	8.5	16.8
2634.0	7.2	54.0	90	10.0	1.85	7.87	41618	492	2113	8.5	16.8
2635.0	4.8	54.0	90	10.0	1.99	8.08	42743	738	2074	8.5	16.8
2636.0	4.8	54.0	90	10.0	1.99	8.28	43868	738	2037	8.5	16.8
2637.0	4.1	54.0	90	10.0	2.04	8.53	45201	875	2006	8.5	16.8
2638.0	3.8	54.0	90	10.0	2.07	8.80	46626	935	1977	8.5	16.8
2639.0	3.8	53.0	88	10.0	2.04	9.06	48016	932	1951	8.5	16.8
2640.0	4.8	54.0	88	10.0	1.98	9.27	49116	738	1920	8.5	16.8
2641.0	5.9	54.0	88	10.0	1.91	9.44	50017	604	1888	8.5	16.8
2642.0	4.5	53.0	88	10.0	1.99	9.66	51185	784	1862	8.5	16.8
2643.0	4.0	53.0	80	10.0	1.99	9.91	52379	881	1839	8.5	16.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2644.0	4.2	53.0	80	10.0	1.98	10.15	53522	843	1816	8.5	16.8
2645.0	3.0	53.0	70	10.0	2.04	10.48	54908	1169	1802	8.5	16.8
2646.0	4.6	53.0	113	10.0	2.06	10.69	56378	768	1780	8.5	16.8
2647.0	3.9	52.0	113	10.0	2.11	10.95	58139	920	1761	8.5	16.8
2648.0	4.4	52.0	110	10.0	2.06	11.18	59657	814	1742	8.5	16.8
2649.0	3.6	52.0	110	10.0	2.12	11.46	61480	978	1726	8.5	16.8
2650.0	4.5	52.0	110	10.0	2.05	11.68	62940	784	1707	8.5	16.8
2651.0	3.8	53.0	110	10.0	2.12	11.94	64682	935	1692	8.5	16.8
2652.0	5.9	53.0	110	10.0	1.97	12.11	65808	604	1671	8.5	16.8
2653.0	5.2	46.0	110	10.0	1.92	12.31	67067	676	1652	8.5	16.8
2654.0	3.3	46.0	100	10.0	2.04	12.61	68886	1073	1642	8.5	16.8
2655.0	3.4	48.0	100	10.0	2.06	12.90	70650	1042	1631	8.5	16.8
2656.0	5.9	46.0	100	10.0	1.85	13.07	71667	600	1612	8.5	16.8
2657.0	11.4	46.0	100	10.0	1.64	13.16	72194	311	1589	8.5	16.8
2658.0	13.3	46.0	100	10.0	1.59	13.23	72645	266	1567	8.5	16.8
2659.0	9.1	48.0	80	10.0	1.66	13.34	73172	389	1547	8.5	16.8
2660.0	14.2	48.0	80	10.0	1.52	13.41	73510	249	1525	8.5	16.8
2661.0	11.7	46.0	80	10.0	1.56	13.50	73920	303	1505	8.5	16.8
2662.0	11.1	46.0	97	10.0	1.64	13.59	74444	319	1486	8.5	16.8
2663.0	10.5	46.0	102	10.0	1.67	13.69	75027	337	1468	8.5	16.8
2663.3	10.5	46.0	102	10.0	1.67	13.71	75202	337	1462	8.5	16.8

BIT NUMBER	16	IADC CODE	4	INTERVAL	2663.3- 2669.0
CHRISTENSEN C20		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	10.7	BIT RUN	5.7
TOTAL HOURS	4.08	TOTAL TURNS	18692	CONDITION	T0 B0 G0.200

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2663.4	6.2	10.0	64	10.0	1.23	0.02	62	571	529565	8.5	16.8
2663.6	6.9	10.0	64	10.0	1.21	0.05	173	513	176864	8.5	16.8
2663.8	3.6	16.0	64	10.0	1.53	0.10	387	984	106512	8.5	16.8
2664.0	1.5	16.0	64	10.0	1.76	0.23	899	2361	76755	8.5	16.8
2664.2	1.3	16.0	64	10.0	1.80	0.39	1508	2811	60323	8.5	16.8
2664.4	1.8	16.0	64	10.0	1.71	0.50	1930	1946	49709	8.5	16.8
2664.6	3.6	16.0	64	10.0	1.53	0.56	2142	978	42212	8.5	16.8
2664.8	4.3	16.0	64	10.0	1.48	0.60	2321	824	36693	8.5	16.8
2665.0	4.1	18.0	67	10.0	1.55	0.65	2517	864	32478	8.5	16.8
2665.2	3.0	19.0	78	10.0	1.71	0.72	2829	1181	29184	8.5	16.8
2665.4	3.0	19.0	78	10.0	1.71	0.79	3141	1181	26517	8.5	16.8
2665.6	2.7	19.0	78	10.0	1.73	0.86	3488	1312	24325	8.5	16.8
2665.8	4.0	19.0	78	10.0	1.63	0.91	3722	886	22450	8.5	16.8
2666.0	3.2	18.0	78	10.0	1.66	0.97	4014	1107	20869	8.5	16.8
2666.2	0.9	18.0	78	10.0	2.01	1.19	5049	3918	19700	8.5	16.8
2666.4	0.7	18.0	78	10.0	2.08	1.48	6387	5060	18755	8.5	16.8
2666.6	0.8	18.0	78	10.0	2.05	1.74	7618	4661	17901	8.5	16.8
2666.8	0.6	16.0	80	10.0	2.06	2.08	9218	5903	17216	8.5	16.8
2667.0	0.7	16.0	80	10.0	2.01	2.35	10533	4852	16547	8.5	16.8
2667.2	0.8	17.0	80	10.0	2.02	2.60	11733	4428	15926	8.5	16.8
2667.4	0.8	17.0	80	10.0	2.03	2.86	12980	4600	15373	8.5	16.8
2667.6	1.3	20.0	80	10.0	1.96	3.01	13696	2643	14781	8.5	16.8
2667.8	1.3	19.0	80	10.0	1.94	3.16	14413	2643	14242	8.5	16.8
2668.0	1.8	16.0	80	10.0	1.77	3.27	14955	2001	13721	8.5	16.8
2668.2	0.5	11.0	80	10.0	1.90	3.64	16733	6559	13429	8.5	16.8
2668.4	1.7	10.0	80	10.0	1.59	3.76	17298	2084	12984	8.5	16.8
2668.6	2.1	20.0	80	10.0	1.84	3.85	17755	1687	12557	8.5	16.8
2668.8	2.1	20.0	80	10.0	1.84	3.95	18212	1687	12162	8.5	16.8
2669.0	1.5	20.0	60	10.0	1.85	4.08	18692	2361	11818	8.5	16.8

BIT NUMBER	17	IADC CODE	527	INTERVAL	2669.0- 2815.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.2	BIT RUN	146.0
TOTAL HOURS	33.41	TOTAL TURNS	234387	CONDITION	T6 B5 G0.187-

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2670.0	3.0	15.0	80	10.2	1.44	0.33	1600	1181	46941	8.5	16.8
2671.0	1.8	25.0	105	10.2	1.84	0.89	5100	1968	24454	8.5	16.8
2672.0	0.3	30.0	100	10.2	2.42	4.22	25100	11807	20239	8.5	16.8
2673.0	4.0	48.0	95	10.2	1.95	4.47	26518	881	15399	8.5	16.8
2674.0	3.8	48.0	100	10.1	2.00	4.73	28097	932	12506	8.5	16.8
2675.0	3.9	46.0	120	10.1	2.03	4.99	29967	920	10575	8.5	16.8
2676.0	3.2	46.0	120	10.1	2.08	5.31	32210	1103	9222	8.5	16.8
2677.0	4.7	46.0	123	10.1	1.97	5.52	33780	754	8163	8.5	16.8
2678.0	4.6	47.0	123	10.1	1.99	5.74	35381	768	7342	8.5	16.8
2679.0	3.2	46.0	124	10.1	2.10	6.05	37699	1103	6718	8.5	16.8
2680.0	3.3	47.0	124	10.1	2.10	6.35	39953	1073	6205	8.5	16.8
2681.0	3.3	47.0	124	10.1	2.10	6.65	42208	1073	5777	8.5	16.8
2682.0	2.6	49.0	116	10.1	2.18	7.03	44854	1347	5436	8.5	16.8
2683.0	3.6	48.0	124	10.1	2.09	7.31	46921	984	5118	8.5	16.8
2684.0	6.3	48.0	124	10.1	1.91	7.47	48102	562	4814	8.5	16.8
2685.0	10.3	49.0	124	10.1	1.76	7.57	48824	344	4535	8.5	16.8
2686.0	13.1	49.0	124	10.1	1.68	7.64	49392	270	4284	8.5	16.8
2687.0	11.5	46.0	115	10.1	1.66	7.73	49992	308	4063	8.5	16.8
2688.0	10.6	47.0	122	10.1	1.72	7.82	50683	334	3867	8.5	16.8
2689.0	10.5	48.0	120	10.1	1.73	7.92	51368	337	3691	8.5	16.8
2690.0	10.1	48.0	120	10.1	1.74	8.02	52081	351	3531	8.5	16.8
2691.0	11.7	48.0	112	10.1	1.67	8.10	52656	303	3385	8.5	16.8
2692.0	5.9	48.0	75	10.1	1.76	8.27	53418	600	3264	8.5	16.8
2693.0	10.0	48.0	120	10.1	1.75	8.37	54138	354	3142	8.5	16.8
2694.0	8.9	48.0	122	10.1	1.79	8.49	54964	399	3033	8.5	16.8
2695.0	4.8	48.0	121	10.1	1.99	8.69	56476	738	2944	8.5	16.8
2696.0	6.7	48.0	121	10.1	1.88	8.84	57560	529	2855	8.5	16.8
2697.0	4.7	49.0	121	10.1	2.01	9.06	59104	754	2780	8.5	16.8
2698.0	3.5	48.0	120	10.1	2.09	9.35	61191	1027	2719	8.5	16.8
2699.0	3.8	50.0	123	10.1	2.09	9.61	63128	930	2660	8.5	16.8
2700.0	3.3	50.0	120	10.1	2.14	9.92	65337	1087	2609	8.5	16.8
2701.0	3.0	48.0	120	10.1	2.14	10.25	67737	1181	2564	8.5	16.8
2702.0	7.3	50.0	120	10.1	1.87	10.39	68723	485	2501	8.5	16.8
2703.0	3.3	48.0	120	10.1	2.11	10.69	70905	1073	2459	8.5	16.8
2704.0	3.4	51.0	123	10.1	2.15	10.98	73076	1042	2419	8.5	16.8
2705.0	2.8	51.0	120	10.1	2.20	11.34	75611	1247	2386	8.5	16.8
2706.0	10.2	48.0	120	10.1	1.74	11.43	76317	347	2331	8.5	16.8
2707.0	6.9	51.0	122	10.1	1.91	11.58	77381	515	2283	8.5	16.8
2708.0	3.3	50.0	120	10.1	2.13	11.88	79563	1073	2252	8.5	16.8
2709.0	4.8	51.0	122	10.1	2.03	12.09	81088	738	2215	8.5	16.8
2710.0	6.3	48.0	120	10.1	1.90	12.25	82230	562	2174	8.5	16.8
2711.0	7.8	46.0	123	10.1	1.81	12.38	83177	454	2133	8.5	16.8
2712.0	12.3	46.0	139	10.1	1.70	12.46	83855	288	2090	8.5	16.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2713.0	14.7	50.0	123	10.1	1.65	12.53	84357	241	2048	8.5	16.8
2714.0	5.0	47.0	124	10.1	1.97	12.73	85842	707	2019	8.5	16.8
2715.0	6.4	46.0	124	10.1	1.88	12.88	87004	553	1987	8.5	16.8
2716.0	11.5	48.0	122	10.1	1.71	12.97	87641	308	1951	8.5	16.8
2717.0	9.5	47.0	120	10.1	1.75	13.07	88399	373	1918	8.5	16.8
2718.0	7.8	46.0	115	10.1	1.79	13.20	89283	454	1888	8.5	16.8
2719.0	8.5	47.0	115	10.1	1.77	13.32	90095	417	1859	8.5	16.8
2720.0	10.6	45.0	115	10.1	1.68	13.41	90746	334	1829	8.5	16.8
2721.0	3.5	45.0	115	10.1	2.03	13.70	92717	1012	1813	8.5	16.9
2722.0	9.6	45.0	115	10.1	1.71	13.80	93436	369	1786	8.5	16.9
2723.0	3.6	48.0	120	10.1	2.08	14.08	95425	978	1771	8.5	16.9
2724.0	8.5	45.0	120	10.1	1.76	14.20	96276	419	1746	8.5	16.9
2725.0	3.8	45.0	120	10.1	2.02	14.46	98171	932	1732	8.5	16.9
2726.0	3.0	48.0	120	10.1	2.14	14.80	100595	1193	1722	8.5	16.9
2727.0	6.7	48.0	130	10.1	1.90	14.95	101761	529	1702	8.5	16.9
2728.0	6.4	48.0	130	10.1	1.92	15.10	102980	553	1682	8.5	16.9
2729.0	8.2	48.0	130	10.1	1.84	15.23	103931	432	1662	8.5	16.9
2730.0	8.2	48.0	120	10.1	1.81	15.35	104809	432	1641	8.5	16.9
2731.0	11.1	50.0	120	10.1	1.74	15.44	105458	319	1620	8.5	16.9
2732.0	9.1	50.0	115	10.1	1.79	15.55	106216	389	1601	8.5	16.9
2733.0	6.9	50.0	120	10.1	1.89	15.69	107259	513	1584	8.5	16.9
2734.0	4.6	50.0	120	10.1	2.02	15.91	108821	768	1571	8.5	16.9
2735.0	4.9	50.0	120	10.1	2.00	16.11	110291	723	1558	8.5	16.9
2736.0	7.2	46.0	120	10.1	1.83	16.25	111291	492	1542	8.5	16.9
2737.0	5.6	47.0	120	10.1	1.92	16.43	112572	630	1529	8.5	16.9
2738.0	3.7	48.0	120	10.1	2.07	16.70	114518	957	1521	8.5	16.9
2739.0	4.3	44.0	120	10.1	1.96	16.93	116192	824	1511	8.5	16.9
2740.0	7.8	48.0	120	10.1	1.83	17.06	117115	454	1496	8.5	16.9
2741.0	4.4	46.0	120	10.1	1.99	17.29	118770	814	1486	8.5	16.9
2742.0	9.6	46.0	120	10.1	1.74	17.40	119520	369	1471	8.5	16.9
2743.0	10.6	46.0	120	10.1	1.70	17.49	120200	334	1456	8.5	16.9
2744.0	4.0	48.0	120	10.1	2.04	17.74	122000	886	1448	8.5	16.9
2745.0	4.0	46.0	120	10.1	2.01	17.99	123791	881	1440	8.5	16.9
2746.0	6.4	46.0	120	10.1	1.86	18.15	124916	553	1429	8.5	16.9
2747.0	10.3	47.0	120	10.1	1.72	18.24	125615	344	1415	8.5	16.9
2748.0	12.3	47.0	120	10.1	1.67	18.32	126200	288	1401	8.5	16.9
2749.0	8.9	46.0	120	10.1	1.76	18.44	127009	398	1388	8.5	16.9
2750.0	4.0	46.0	120	10.1	2.01	18.69	128809	886	1382	8.5	16.9
2751.0	6.2	47.0	120	10.1	1.89	18.85	129970	571	1372	8.5	16.9
2752.0	5.0	45.0	122	10.1	1.93	19.05	131431	707	1364	8.5	16.9
2753.0	5.9	45.0	122	10.1	1.88	19.22	132681	604	1355	8.5	16.9
2754.0	5.0	46.0	120	10.1	1.94	19.42	134121	708	1348	8.5	16.9
2755.0	4.7	45.0	120	10.1	1.95	19.63	135652	754	1341	8.5	16.9
2756.0	7.7	43.0	124	10.1	1.78	19.76	136625	463	1331	8.5	16.9
2757.0	2.4	44.0	125	10.1	2.16	20.18	139750	1476	1332	8.5	16.9
2758.0	4.0	43.0	123	10.1	1.98	20.43	141586	881	1327	8.5	16.9
2759.0	6.4	43.0	125	10.1	1.84	20.58	142758	553	1318	8.5	16.9
2760.0	3.7	43.0	120	10.1	2.00	20.86	144720	965	1315	8.5	16.9
2761.0	4.8	43.0	120	10.1	1.91	21.06	146220	738	1308	8.5	16.9
2762.0	3.1	42.0	121	10.1	2.04	21.38	148546	1135	1306	8.5	16.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2763.0	4.2	45.0	120	10.1	1.99	21.62	150265	845	1302	8.5	16.9
2764.0	10.4	40.0	120	10.1	1.64	21.72	150957	341	1291	8.5	16.9
2765.0	4.4	40.0	122	10.1	1.91	21.95	152640	814	1286	8.5	16.9
2766.0	2.2	46.0	120	10.1	2.21	22.40	155913	1610	1290	8.5	16.9
2767.0	10.6	46.0	120	10.1	1.70	22.50	156592	334	1280	8.5	16.9
2768.0	11.2	45.0	120	10.1	1.67	22.59	157235	316	1270	8.5	16.9
2769.0	7.3	46.0	120	10.1	1.82	22.72	158221	485	1262	8.5	16.9
2770.0	3.0	46.0	120	10.1	2.11	23.06	160621	1181	1262	8.5	16.9
2771.0	3.0	46.0	120	10.1	2.11	23.39	163021	1181	1261	8.5	16.9
2772.0	2.6	46.0	120	10.1	2.15	23.78	165790	1362	1262	8.5	16.9
2773.0	4.5	47.0	120	10.1	1.99	24.00	167390	787	1257	8.5	16.9
2774.0	2.8	48.0	124	10.1	2.17	24.35	170047	1265	1257	8.5	16.9
2775.0	2.7	48.0	116	10.1	2.16	24.72	172625	1312	1258	8.5	16.9
2776.0	11.3	48.0	120	10.1	1.71	24.81	173262	313	1249	8.5	16.9
2777.0	11.0	49.0	123	10.1	1.73	24.90	173933	322	1240	8.5	16.9
2778.0	10.1	54.0	76	10.1	1.66	25.00	174385	351	1232	8.5	16.9
2779.0	4.8	51.0	120	10.1	2.02	25.21	175885	738	1228	8.5	16.9
2780.0	4.0	51.0	120	10.1	2.08	25.46	177685	886	1225	8.5	16.9
2781.0	2.7	46.0	120	10.1	2.14	25.84	180381	1327	1226	8.5	16.9
2782.0	4.5	44.0	126	10.1	1.96	26.06	182061	787	1222	8.5	16.9
2783.0	10.3	47.0	121	10.1	1.73	26.16	182766	344	1214	8.5	16.9
2784.0	3.1	48.0	124	10.1	2.13	26.48	185151	1135	1213	8.5	16.9
2785.0	3.8	46.0	126	10.1	2.05	26.74	187140	932	1211	8.5	16.9
2786.0	2.7	46.0	116	10.1	2.13	27.11	189718	1312	1212	8.5	16.9
2787.0	2.8	47.0	115	10.1	2.13	27.47	192182	1265	1212	8.5	16.9
2788.0	6.3	50.0	127	10.1	1.94	27.63	193392	562	1207	8.5	16.9
2789.0	3.6	47.0	121	10.1	2.07	27.90	195409	984	1205	8.5	16.9
2790.0	4.4	49.0	128	10.1	2.05	28.13	197154	805	1202	8.5	16.9
2791.0	8.5	49.0	128	10.1	1.83	28.25	198058	417	1195	8.5	16.9
2792.0	8.5	49.0	128	10.1	1.83	28.37	198961	417	1189	8.5	16.9
2793.0	8.5	48.0	128	10.1	1.82	28.48	199865	417	1183	8.5	16.9
2794.0	3.6	51.0	116	10.1	2.11	28.76	201798	984	1181	8.5	16.9
2795.0	9.6	51.0	118	10.1	1.79	28.87	202535	369	1175	8.5	16.9
2796.0	9.6	51.0	118	10.1	1.79	28.97	203273	369	1168	8.5	16.9
2797.0	8.9	46.0	120	10.1	1.76	29.08	204082	398	1162	8.5	16.9
2798.0	3.4	50.0	120	10.1	2.12	29.38	206200	1042	1161	8.5	16.9
2799.0	2.9	46.0	120	10.1	2.12	29.72	208682	1221	1162	8.5	16.9
2800.0	3.3	46.0	120	10.1	2.08	30.02	210864	1073	1161	8.5	16.9
2801.0	11.2	50.0	115	10.1	1.72	30.11	211480	316	1155	8.5	16.9
2802.0	10.6	50.0	117	10.1	1.74	30.21	212143	334	1149	8.5	16.9
2803.0	7.8	49.0	120	10.1	1.84	30.34	213066	454	1143	8.5	16.9
2804.0	10.1	48.0	120	10.1	1.74	30.43	213778	351	1137	8.5	16.9
2805.0	10.1	48.0	120	10.1	1.74	30.53	214491	351	1132	8.5	16.9
2806.0	3.4	46.0	115	10.1	2.05	30.83	216521	1042	1131	8.5	16.9
2807.0	3.4	46.0	115	10.1	2.05	31.12	218550	1042	1130	8.5	16.9
2808.0	2.8	46.0	115	10.1	2.12	31.48	221014	1265	1131	8.5	16.9
2809.0	8.2	46.0	115	10.1	1.77	31.60	221856	432	1126	8.5	16.9
2810.0	3.3	42.0	115	10.1	2.00	31.90	223947	1073	1126	8.5	16.9
2811.0	2.7	45.0	115	10.1	2.11	32.27	226502	1312	1127	8.5	16.9
2812.0	2.7	47.0	115	10.1	2.14	32.64	229058	1312	1129	8.5	16.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2813.0	3.3	48.0	118	10.1	2.10	32.95	231230	1087	1128	8.5	16.9
2814.0	4.6	49.0	118	10.1	2.01	33.17	232769	770	1126	8.5	16.9
2815.0	2.1	49.0	115	10.1	2.25	33.64	236008	1663	1130	8.5	16.9

BIT NUMBER	18	IADC CODE	527	INTERVAL	2815.0- 2955.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.7	BIT RUN	140.0
TOTAL HOURS	36.54	TOTAL TURNS	218379	CONDITION	T6 R6 G0.250

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2816.0	2.8	50.0	105	10.1	2.14	0.36	2250	1265	48796	8.5	16.9
2817.0	3.1	50.0	105	10.1	2.11	0.68	4282	1143	24969	8.5	16.9
2818.0	2.5	52.0	105	10.1	2.21	1.08	6802	1417	17119	8.5	16.9
2819.0	5.0	58.0	110	10.1	2.07	1.28	8122	708	13016	8.5	17.0
2820.0	11.3	58.0	110	10.1	1.79	1.37	8706	313	10476	8.5	17.0
2821.0	9.6	57.0	110	10.1	1.83	1.47	9394	369	8791	8.5	17.0
2822.0	16.0	57.0	110	10.1	1.66	1.53	9806	221	7567	8.5	17.0
2823.0	14.0	57.0	110	10.1	1.70	1.61	10278	253	6653	8.5	17.0
2824.0	14.0	58.0	105	10.1	1.70	1.68	10728	253	5942	8.5	17.0
2825.0	8.2	55.0	105	10.1	1.85	1.80	11496	432	5391	8.5	17.0
2826.0	5.9	48.0	105	10.1	1.87	1.97	12564	600	4955	8.5	17.0
2827.0	6.3	48.0	104	10.1	1.85	2.13	13554	562	4589	8.5	17.0
2828.0	12.0	48.0	104	10.1	1.64	2.21	14074	295	4259	8.5	17.0
2829.0	8.9	48.0	104	10.1	1.74	2.32	14775	398	3983	8.5	17.0
2830.0	5.1	48.0	104	10.1	1.92	2.52	15999	695	3764	8.5	17.0
2831.0	2.8	48.0	104	10.1	2.11	2.88	18228	1265	3608	8.5	17.0
2832.0	7.8	48.0	104	10.1	1.78	3.01	19028	454	3422	8.5	17.0
2833.0	3.8	48.0	104	10.1	2.01	3.27	20670	932	3284	8.5	17.0
2834.0	7.5	48.0	104	10.1	1.79	3.40	21502	472	3136	8.5	17.0
2835.0	6.4	48.0	104	10.1	1.84	3.56	22477	553	3007	8.5	17.0
2836.0	6.4	45.0	100	10.1	1.79	3.71	23414	553	2890	8.5	17.0
2837.0	5.9	45.0	100	10.1	1.82	3.88	24431	600	2786	8.5	17.0
2838.0	6.9	45.0	100	10.1	1.77	4.03	25301	513	2687	8.5	17.0
2839.0	5.9	45.0	100	10.1	1.82	4.20	26318	600	2600	8.5	17.0
2840.0	9.6	45.0	100	10.1	1.67	4.30	26943	369	2511	8.5	17.0
2841.0	9.6	45.0	100	10.1	1.67	4.41	27568	369	2428	8.5	17.0
2842.0	11.0	45.0	100	10.1	1.62	4.50	28113	322	2350	8.5	17.0
2843.0	5.1	47.0	100	10.1	1.89	4.69	29290	695	2291	8.5	17.0
2844.0	2.8	45.0	100	10.1	2.06	5.05	31432	1265	2256	8.5	17.0
2845.0	2.7	45.0	100	10.1	2.07	5.42	33655	1312	2224	8.5	17.0
2846.0	2.8	45.0	100	10.1	2.06	5.78	35797	1265	2193	8.5	17.0
2847.0	1.7	52.0	100	10.1	2.32	6.37	39327	2084	2190	8.5	17.0
2848.0	3.2	50.0	100	10.1	2.08	6.68	41202	1107	2157	8.5	17.0
2849.0	10.0	52.0	100	10.1	1.73	6.78	41802	354	2104	8.5	17.0
2850.0	10.0	50.0	100	10.1	1.71	6.88	42402	354	2054	8.5	17.0
2851.0	11.0	50.0	100	10.1	1.68	6.97	42947	322	2006	8.5	17.0
2852.0	11.0	50.0	100	10.1	1.68	7.06	43493	322	1961	8.5	17.0
2853.0	10.0	50.0	100	10.1	1.71	7.16	44093	354	1918	8.5	17.0
2854.0	10.0	50.0	100	10.1	1.71	7.26	44693	354	1878	8.5	17.0
2855.0	5.2	50.0	100	10.1	1.92	7.45	45847	681	1848	8.5	17.0
2856.0	2.5	55.0	100	10.0	2.26	7.85	48247	1417	1838	8.5	17.0
2857.0	3.5	55.0	100	10.0	2.14	8.14	49961	1012	1818	8.5	17.0
2858.0	12.6	50.0	100	10.0	1.65	8.22	50437	281	1782	8.5	17.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2859.0	6.3	52.0	100	10.0	1.90	8.38	51390	562	1755	8.5	17.0
2860.0	2.8	55.0	100	10.0	2.22	8.73	53532	1265	1744	8.5	17.0
2861.0	7.4	55.0	104	10.0	1.90	8.87	54376	479	1716	8.5	17.0
2862.0	2.6	55.0	106	10.0	2.26	9.25	56822	1362	1709	8.5	17.0
2863.0	5.4	40.0	100	10.0	1.80	9.44	57941	661	1687	8.5	17.0
2864.0	9.1	50.0	104	10.0	1.77	9.55	58627	389	1660	8.5	17.0
2865.0	10.7	50.0	102	10.0	1.71	9.64	59199	331	1634	8.5	17.0
2866.0	4.8	52.0	104	10.0	2.01	9.85	60499	738	1616	8.5	17.0
2867.0	5.2	52.0	102	10.0	1.98	10.04	61676	681	1598	8.5	17.0
2868.0	10.2	48.0	102	10.0	1.70	10.14	62276	347	1575	8.5	17.0
2869.0	6.7	48.0	102	10.0	1.84	10.29	63191	529	1555	8.5	17.0
2870.0	3.0	49.0	102	10.0	2.12	10.62	65231	1181	1548	8.5	17.0
2871.0	8.5	49.0	104	10.0	1.78	10.74	65965	417	1528	8.5	17.0
2872.0	5.0	49.0	104	10.0	1.96	10.94	67213	708	1514	8.5	17.0
2873.0	1.9	47.0	104	10.0	2.24	11.47	70497	1864	1520	8.5	17.0
2874.0	2.8	45.0	104	10.0	2.09	11.83	72725	1265	1516	8.5	17.0
2875.0	10.8	44.0	101	10.0	1.64	11.92	73287	328	1496	8.5	17.0
2876.0	11.0	45.0	104	10.0	1.65	12.01	73854	322	1477	8.5	17.0
2877.0	10.9	45.0	104	10.0	1.65	12.10	74426	325	1458	8.5	17.0
2878.0	3.6	51.0	104	10.0	2.09	12.38	76160	984	1450	8.5	17.0
2879.0	3.0	51.0	100	10.0	2.14	12.71	78160	1181	1446	8.5	17.0
2880.0	3.2	49.0	102	10.0	2.10	13.02	80072	1107	1441	8.5	17.0
2881.0	3.8	51.0	100	10.0	2.06	13.29	81651	932	1433	8.5	17.0
2882.0	3.0	51.0	100	10.0	2.14	13.62	83651	1181	1430	8.5	17.0
2883.0	1.5	53.0	104	10.0	2.42	14.29	87811	2361	1443	8.5	17.0
2884.0	2.5	50.0	103	10.0	2.20	14.69	90283	1417	1443	8.5	17.0
2885.0	2.1	49.0	105	10.0	2.25	15.16	93283	1687	1446	8.5	17.0
2886.0	5.1	50.0	105	10.0	1.97	15.36	94518	695	1436	8.5	17.0
2887.0	2.5	49.0	95	10.0	2.16	15.76	96798	1417	1435	8.5	17.0
2888.0	3.0	51.0	100	10.0	2.14	16.09	98798	1181	1432	8.5	17.0
2889.0	2.6	46.0	92	10.0	2.09	16.48	100921	1362	1431	8.5	17.0
2890.0	2.5	48.0	93	10.0	1.61	16.56	101368	283	1416	8.5	17.0
2891.0	3.2	46.0	88	10.0	2.01	16.87	103018	1107	1412	8.5	17.0
2892.0	2.5	48.0	95	10.0	2.14	17.27	105298	1417	1412	8.5	17.0
2893.0	1.7	49.0	90	10.0	2.26	17.86	108474	2084	1420	8.5	17.0
2894.0	2.6	48.0	98	10.0	2.14	18.24	110736	1362	1420	8.5	17.0
2895.0	4.5	48.0	85	10.0	1.91	18.47	111869	787	1412	8.5	17.0
2896.0	8.5	46.0	106	10.0	1.75	18.58	112617	417	1399	8.5	17.0
2897.0	3.6	46.0	98	10.0	2.00	18.86	114251	984	1394	8.5	17.0
2898.0	9.1	44.0	106	10.0	1.71	18.97	114950	389	1382	8.5	17.0
2899.0	2.4	47.0	104	10.0	2.17	19.39	117550	1476	1383	8.5	17.0
2900.0	2.5	46.0	102	10.0	2.13	19.79	119998	1417	1384	8.5	17.0
2901.0	2.1	46.0	103	10.0	2.19	20.26	122941	1687	1387	8.5	17.0
2902.0	2.1	46.0	103	10.0	2.19	20.74	125883	1687	1391	8.5	17.0
2903.0	7.3	48.0	95	10.0	1.79	20.88	126664	485	1380	8.5	17.0
2904.0	3.9	45.0	95	10.0	1.95	21.13	128126	908	1375	8.5	17.0
2905.0	2.9	47.0	70	10.0	1.98	21.48	129574	1221	1373	8.5	17.0
2906.0	1.9	45.0	70	10.0	2.09	22.00	131785	1864	1379	8.5	17.0
2907.0	3.5	45.0	70	10.0	1.89	22.29	132985	1012	1375	8.5	17.0
2908.0	5.9	41.0	68	10.0	1.66	22.46	133676	600	1366	8.5	17.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2909.0	5.9	43.0	68	10.0	1.69	22.63	134368	600	1358	8.5	17.0
2910.0	3.3	46.0	68	10.0	1.91	22.93	135604	1073	1355	8.5	17.0
2911.0	3.8	50.0	98	10.0	2.04	23.20	137151	932	1351	8.5	17.0
2912.0	3.8	48.0	105	10.0	2.04	23.46	138809	932	1347	8.5	17.0
2913.0	7.8	45.0	105	10.0	1.76	23.59	139617	454	1338	8.5	17.0
2914.0	10.2	45.0	105	10.0	1.68	23.68	140235	347	1328	8.5	17.0
2915.0	10.6	45.0	105	10.0	1.67	23.78	140829	334	1318	8.5	17.0
2916.0	7.2	45.0	105	10.0	1.79	23.92	141704	492	1309	8.5	17.0
2917.0	5.0	46.0	105	10.0	1.92	24.12	142964	708	1304	8.5	17.0
2918.0	4.0	46.0	105	10.0	1.99	24.37	144539	886	1299	8.5	17.0
2919.0	3.0	46.0	100	10.0	2.07	24.70	146539	1181	1298	8.5	17.0
2920.0	4.0	45.0	100	10.0	1.96	24.95	148039	886	1294	8.5	17.1
2921.0	4.0	45.0	100	10.0	1.96	25.20	149539	886	1291	8.5	17.1
2922.0	3.0	45.0	100	10.0	2.05	25.53	151539	1181	1289	8.5	17.1
2923.0	2.1	43.0	105	10.0	2.15	26.01	154539	1687	1293	8.5	17.1
2924.0	12.5	43.0	105	10.0	1.59	26.09	155043	283	1284	8.5	17.1
2925.0	10.0	43.0	105	10.0	1.66	26.19	155673	354	1275	8.5	17.1
2926.0	5.1	43.0	105	10.0	1.87	26.39	156903	692	1270	8.5	17.1
2927.0	2.7	46.0	105	10.0	2.12	26.76	159237	1312	1271	8.5	17.1
2928.0	3.1	45.0	105	10.0	2.06	27.08	161269	1143	1269	8.5	17.1
2929.0	2.4	45.0	105	10.0	2.14	27.50	163894	1476	1271	8.5	17.1
2930.0	2.4	45.0	105	10.0	2.14	27.91	166519	1476	1273	8.5	17.1
2931.0	2.5	45.0	105	10.0	2.13	28.31	169039	1417	1274	8.5	17.1
2932.0	2.6	48.0	105	10.0	2.16	28.70	171462	1362	1275	8.5	17.1
2933.0	2.5	48.0	100	10.0	2.16	29.10	173862	1417	1276	8.5	17.1
2934.0	3.3	48.0	100	10.0	2.07	29.40	175680	1073	1275	8.5	17.1
2935.0	7.2	48.0	100	10.0	1.81	29.54	176514	492	1268	8.5	17.1
2936.0	3.6	45.0	100	10.0	2.00	29.82	178180	984	1266	8.5	17.1
2937.0	2.2	46.0	100	10.0	2.17	30.27	180908	1610	1268	8.5	17.1
2938.0	2.2	44.0	102	10.0	2.14	30.73	183689	1610	1271	8.5	17.1
2939.0	3.8	46.0	104	10.0	2.01	30.99	185331	932	1269	8.5	17.1
2940.0	3.2	42.0	100	10.0	1.99	31.30	187206	1107	1267	8.5	17.1
2941.0	5.1	42.0	100	10.0	1.84	31.50	188378	692	1263	8.5	17.1
2942.0	4.7	42.0	100	10.0	1.87	31.71	189655	754	1259	8.5	17.1
2943.0	3.1	43.0	100	10.0	2.01	32.03	191590	1143	1258	8.5	17.1
2944.0	3.0	43.0	100	10.0	2.02	32.37	193590	1181	1257	8.5	17.1
2945.0	3.4	44.0	103	10.0	2.01	32.66	195408	1042	1255	8.5	17.1
2946.0	3.0	42.0	102	10.0	2.02	32.99	197448	1181	1255	8.5	17.1
2947.0	8.5	42.0	102	10.0	1.69	33.11	198168	417	1249	8.5	17.1
2948.0	9.6	42.0	104	10.0	1.66	33.21	198818	369	1242	8.5	17.1
2949.0	3.2	44.0	103	10.0	2.03	33.53	200749	1107	1241	8.5	17.1
2950.0	1.5	42.0	102	10.0	2.23	34.19	204829	2361	1249	8.5	17.1
2951.0	1.9	44.0	102	10.0	2.19	34.72	208050	1864	1254	8.5	17.1
2952.0	2.3	52.0	100	10.0	2.24	35.15	210625	1520	1256	8.5	17.1
2953.0	2.4	51.0	102	10.0	2.22	35.57	213175	1476	1257	8.5	17.1
2954.0	2.6	53.0	97	10.0	2.21	35.95	215414	1362	1258	8.5	17.1
2955.0	1.7	48.0	84	10.0	2.23	36.54	218379	2084	1264	8.5	17.1

BIT NUMBER	19	IADC CODE	131	INTERVAL	1998.0- 2460.0
HTC OSC 1G		SIZE	8.500	NOZZLES	28 28 28
COST	900.00	TRIP TIME	9.9	BIT RUN	462.0
TOTAL HOURS	14.37	TOTAL TURNS	104481	CONDITION	T3 R5 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2000.0	50.0	10.0	100	10.2	0.83	0.04	240	71	18054	8.5	16.0
2005.0	23.0	10.0	100	10.2	1.01	0.26	1544	154	5268	8.5	16.0
2010.0	43.0	10.0	100	10.2	0.86	0.37	2242	82	3107	8.5	16.0
2015.0	12.0	20.0	120	10.2	1.43	0.79	5242	295	2280	8.5	16.1
2020.0	60.0	20.0	120	10.2	0.99	0.87	5842	59	1775	8.5	16.1
2025.0	30.0	20.0	120	10.2	1.18	1.04	7042	118	1469	8.5	16.1
2030.0	23.0	22.0	120	10.2	1.29	1.26	8607	154	1263	8.5	16.1
2035.0	20.0	20.0	110	10.2	1.27	1.51	10257	177	1116	8.5	16.1
2040.0	25.0	20.0	110	10.2	1.21	1.71	11577	142	1000	8.5	16.1
2045.0	23.0	18.0	110	10.2	1.19	1.93	13012	154.00	910.31	8.5	16.1
2050.0	20.0	15.0	120	10.2	1.19	2.18	14812	177.10	839.81	8.5	16.1
2055.0	20.0	15.0	120	10.2	1.19	2.43	16612	177.10	781.68	8.5	16.1
2060.0	22.0	15.0	120	10.2	1.17	2.65	18248	161.00	731.62	8.5	16.1
2065.0	25.0	15.0	124	10.2	1.15	2.85	19736	141.68	687.60	8.5	16.1
2070.0	26.0	15.0	124	10.2	1.14	3.04	21167	136.23	649.31	8.5	16.1
2075.0	25.0	15.0	122	10.2	1.14	3.24	22631	141.68	616.34	8.5	16.1
2080.0	27.0	15.0	122	10.2	1.12	3.43	23987	131.19	586.76	8.5	16.1
2085.0	20.0	15.0	122	10.2	1.20	3.68	25817	177.10	563.22	8.5	16.1
2090.0	16.0	15.0	122	10.2	1.26	3.99	28104	221.38	544.64	8.5	16.1
2095.0	33.0	15.0	122	10.2	1.07	4.14	29213	107.33	522.10	8.5	16.2
2100.0	23.0	15.0	122	10.2	1.16	4.36	30805	154.00	504.05	8.5	16.2
2105.0	30.0	15.0	122	10.2	1.10	4.53	32025	118.07	486.02	8.5	16.2
2110.0	31.0	15.0	122	10.2	1.09	4.69	33205	114.26	469.42	8.5	16.2
2115.0	30.0	15.0	122	10.2	1.10	4.86	34425	118.07	454.41	8.5	16.2
2120.0	28.0	15.0	122	10.1	1.13	5.03	35732	126.50	440.97	8.5	16.2
2125.0	29.0	15.0	122	10.1	1.12	5.21	36994	122.14	428.41	8.5	16.2
2130.0	33.0	18.0	123	10.1	1.14	5.36	38113	107.33	416.25	8.5	16.2
2135.0	36.0	18.0	123	10.1	1.12	5.50	39138	98.39	404.65	8.5	16.2
2140.0	32.0	18.0	123	10.1	1.15	5.65	40291	110.69	394.30	8.5	16.2
2145.0	32.0	18.0	123	10.1	1.15	5.81	41444	110.69	384.65	8.5	16.2
2150.0	30.0	18.0	123	10.1	1.17	5.98	42674	118.07	375.88	8.5	16.2
2155.0	35.0	15.0	123	10.1	1.07	6.12	43728	101.20	367.14	8.5	16.2
2160.0	34.0	18.0	124	10.1	1.14	6.27	44822	104.18	359.02	8.5	16.2
2165.0	33.0	18.0	124	10.1	1.14	6.42	45950	107.33	351.49	8.5	16.2
2170.0	35.0	18.0	124	10.1	1.13	6.56	47012	101.20	344.21	8.5	16.2
2175.0	33.0	18.0	124	10.1	1.14	6.71	48140	107.33	337.52	8.5	16.3
2180.0	33.0	18.0	124	10.1	1.14	6.86	49267	107.33	331.19	8.5	16.3
2185.0	33.0	18.0	124	10.1	1.14	7.02	50394	107.33	325.21	8.5	16.3
2190.0	33.0	18.0	124	10.1	1.14	7.17	51522	107.33	319.53	8.5	16.3
2195.0	34.0	18.0	124	10.1	1.14	7.31	52616	104.18	314.07	8.5	16.3
2200.0	35.0	18.0	124	10.1	1.13	7.46	53678	101.20	308.80	8.5	16.3
2205.0	38.0	18.0	124	10.1	1.11	7.59	54657	93.21	303.59	8.5	16.3
2210.0	39.0	18.0	124	10.1	1.10	7.72	55611	90.82	298.57	8.5	16.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2215.0	40.0	18.0	125	10.1	1.10	7.84	56549	88.55	293.73	8.5	16.3
2220.0	30.0	18.0	125	10.1	1.17	8.01	57799	118.07	289.78	8.5	16.3
2225.0	30.0	18.0	125	10.1	1.17	8.17	59049	118.07	286.00	8.5	16.3
2230.0	35.0	18.0	125	10.1	1.13	8.32	60120	101.20	282.01	8.5	16.3
2235.0	35.0	18.0	125	10.1	1.13	8.46	61192	101.20	278.20	8.5	16.3
2240.0	32.0	18.0	125	10.1	1.16	8.62	62364	110.69	274.74	8.5	16.3
2245.0	32.0	18.0	125	10.1	1.16	8.77	63535	110.69	271.42	8.5	16.3
2250.0	34.0	18.0	122	10.1	1.13	8.92	64612	104.18	268.10	8.5	16.3
2255.0	36.0	18.0	122	10.1	1.12	9.06	65629	98.39	264.80	8.5	16.3
2260.0	35.0	18.0	122	10.1	1.12	9.20	66674	101.20	261.67	8.5	16.4
2265.0	35.0	18.0	122	10.1	1.12	9.34	67720	101.20	258.67	8.5	16.4
2270.0	35.0	18.0	122	10.1	1.12	9.49	68766	101.20	255.78	8.5	16.4
2275.0	37.0	18.0	122	10.1	1.11	9.62	69755	95.73	252.89	8.5	16.4
2280.0	35.0	18.0	122	10.1	1.12	9.77	70801	101.20	250.20	8.5	16.4
2285.0	36.0	18.0	122	10.1	1.12	9.90	71817	98.39	247.55	8.5	16.4
2290.0	36.0	18.0	122	10.1	1.12	10.04	72834	98.39	245.00	8.5	16.4
2295.0	36.0	18.0	122	10.1	1.12	10.18	73851	98.39	242.53	8.5	16.4
2300.0	36.0	18.0	122	10.1	1.12	10.32	74867	98.39	240.14	8.5	16.4
2305.0	35.0	18.0	122	10.1	1.12	10.46	75913	101.20	237.88	8.5	16.4
2310.0	37.0	18.0	122	10.1	1.11	10.60	76902	95.73	235.60	8.5	16.4
2315.0	30.0	18.0	122	10.1	1.17	10.77	78122	118.07	233.75	8.5	16.4
2320.0	30.0	18.0	122	10.1	1.17	10.93	79342	118.07	231.95	8.5	16.4
2325.0	35.0	18.0	122	10.1	1.12	11.08	80388	101.20	229.95	8.5	16.4
2330.0	35.0	14.0	122	10.1	1.05	11.22	81434	101.20	228.01	8.5	16.4
2335.0	35.0	14.0	122	10.1	1.05	11.36	82479	101.20	226.13	8.5	16.4
2340.0	38.0	14.0	122	10.1	1.03	11.49	83442	93.21	224.19	8.5	16.4
2345.0	40.0	15.0	122	10.1	1.04	11.62	84357	88.55	222.23	8.5	16.4
2350.0	33.0	15.0	122	10.1	1.09	11.77	85467	107.33	220.60	8.5	16.5
2355.0	35.0	15.0	122	10.1	1.07	11.91	86512	101.20	218.93	8.5	16.5
2360.0	36.0	15.0	122	10.1	1.06	12.05	87529	98.39	217.27	8.5	16.5
2365.0	37.0	12.0	122	10.1	1.00	12.19	88518	95.73	215.61	8.5	16.5
2370.0	40.0	12.0	122	10.1	0.98	12.31	89433	88.55	213.90	8.5	16.5
2375.0	40.0	14.0	122	10.1	1.02	12.44	90348	88.55	212.24	8.5	16.5
2380.0	40.0	14.0	122	10.1	1.02	12.56	91263	88.55	210.62	8.5	16.5
2385.0	40.0	14.0	122	10.1	1.02	12.69	92178	88.55	209.04	8.5	16.5
2390.0	40.0	12.0	122	10.1	0.98	12.81	93093	88.55	207.51	8.5	16.5
2395.0	42.0	12.0	122	10.1	0.97	12.93	93965	84.33	205.95	8.5	16.5
2400.0	42.0	14.0	122	10.1	1.01	13.05	94836	84.33	204.44	8.5	16.5
2405.0	42.0	12.0	122	10.1	0.97	13.17	95707	84.33	202.97	8.5	16.5
2410.0	42.0	14.0	122	10.1	1.01	13.29	96579	84.33	201.53	8.5	16.5
2415.0	43.0	15.0	122	10.1	1.02	13.40	97430	82.37	200.10	8.5	16.5
2420.0	45.0	16.0	122	10.1	1.02	13.51	98243	78.71	198.66	8.5	16.5
2425.0	45.0	16.0	122	10.1	1.02	13.63	99057	78.71	197.26	8.5	16.5
2430.0	48.0	16.0	122	10.1	1.01	13.73	99819	73.79	195.83	8.5	16.5
2435.0	48.0	16.0	122	10.1	1.01	13.83	100582	73.79	194.43	8.5	16.5
2440.0	48.0	16.0	122	10.1	1.01	13.94	101344	73.79	193.07	8.5	16.6
2445.0	50.0	16.0	122	10.1	1.00	14.04	102076	70.84	191.70	8.5	16.6
2450.0	45.0	12.0	122	10.1	0.95	14.15	102889	78.71	190.45	8.5	16.6
2460.0	46.0	12.0	122	10.1	0.95	14.37	104481	77.00	187.99	8.5	16.6

BIT NUMBER	20	IADC CODE	116	INTERVAL	2460.0- 2747.0
HTC J2		SIZE	8.500	NOZZLES	16 16 16
COST	900.00	TRIP TIME	11.0	BIT RUN	287.0
TOTAL HOURS	5.46	TOTAL TURNS	35461	CONDITION	T2 B2 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2465.0	40.0	12.0	116	10.1	0.96	0.13	870	89	8061	8.5	16.6
2470.0	59.0	12.0	116	10.1	0.87	0.21	1460	60	4060	8.5	16.6
2475.0	52.0	12.0	116	10.1	0.90	0.31	2129	68	2730	8.5	16.6
2480.0	33.0	13.0	120	10.1	1.04	0.46	3220	107	2074	8.5	16.6
2485.0	54.0	13.0	120	10.1	0.92	0.55	3887	66	1672	8.5	16.6
2490.0	46.0	13.0	120	10.1	0.96	0.66	4669	77	1407	8.5	16.6
2495.0	45.0	13.0	120	10.1	0.96	0.77	5469	79	1217	8.5	16.6
2500.0	47.0	13.0	120	10.1	0.95	0.88	6235	75	1074	8.5	16.6
2505.0	50.0	13.0	120	10.1	0.94	0.98	6955	70.84	962.66	8.5	16.6
2510.0	49.0	13.0	120	10.1	0.94	1.08	7690	72.29	873.62	8.5	16.6
2515.0	50.0	13.0	120	10.1	0.94	1.18	8410	70.84	800.64	8.5	16.6
2520.0	53.0	13.0	116	10.1	0.91	1.27	9067	66.83	739.49	8.5	16.6
2525.0	55.0	13.0	116	10.1	0.90	1.36	9699	64.40	687.56	8.5	16.6
2530.0	56.0	14.0	116	10.1	0.92	1.45	10321	63.25	642.97	8.5	16.7
2535.0	57.0	14.0	116	10.1	0.91	1.54	10931	62.14	604.25	8.5	16.7
2540.0	58.0	14.0	116	10.1	0.91	1.63	11531	61.07	570.30	8.5	16.7
2545.0	60.0	14.0	116	10.1	0.90	1.71	12111	59.03	540.22	8.5	16.7
2550.0	58.0	14.0	116	10.1	0.91	1.80	12711	61.07	513.60	8.5	16.7
2555.0	62.0	14.0	116	10.1	0.89	1.88	13272	57.13	489.58	8.5	16.7
2560.0	52.0	14.0	116	10.1	0.94	1.97	13942	68.12	468.50	8.5	16.7
2565.0	53.0	14.0	116	10.1	0.93	2.07	14598	66.83	449.38	8.5	16.7
2570.0	53.0	12.0	116	10.1	0.90	2.16	15255	66.83	431.99	8.5	16.7
2575.0	71.0	12.0	116	10.1	0.82	2.23	15745	49.89	415.38	8.5	16.7
2580.0	60.0	10.0	40	10.1	0.58	2.32	15945	59.03	400.53	8.5	16.7
2585.0	60.0	10.0	40	10.1	0.58	2.40	16145	59.03	386.87	8.5	16.7
2590.0	55.0	10.0	40	10.1	0.60	2.49	16363	64.40	374.47	8.5	16.7
2595.0	47.0	10.0	40	10.1	0.64	2.60	16619	75.36	363.39	8.5	16.7
2600.0	47.0	10.0	40	10.1	0.64	2.70	16874	75.36	353.10	8.5	16.7
2605.0	57.0	10.0	40	10.1	0.59	2.79	17084	62.14	343.07	8.5	16.7
2610.0	57.0	10.0	40	10.1	0.59	2.88	17295	62.14	333.70	8.5	16.7
2615.0	71.0	11.0	117	10.1	0.81	2.95	17789	49.89	324.55	8.5	16.7
2620.0	71.0	11.0	117	10.1	0.81	3.02	18284	49.89	315.97	8.5	16.7
2625.0	70.0	11.0	117	10.1	0.81	3.09	18785	50.60	307.92	8.5	16.8
2630.0	70.0	11.0	117	10.1	0.81	3.16	19287	50.60	300.36	8.5	16.8
2635.0	64.0	11.0	117	10.1	0.83	3.24	19835	55.34	293.36	8.5	16.8
2640.0	64.0	11.0	117	10.1	0.83	3.32	20383	55.34	286.74	8.5	16.8
2650.0	57.0	11.0	117	10.1	0.86	3.49	21615	62.14	274.92	8.5	16.8
2660.0	48.0	11.0	117	10.1	0.90	3.70	23077	73.79	264.87	8.5	16.8
2670.0	48.0	11.0	117	10.1	0.90	3.91	24540	73.79	255.77	8.5	16.8
2680.0	52.0	11.0	117	10.1	0.88	4.10	25890	68.12	247.24	8.5	16.8
2690.0	48.0	11.0	117	10.1	0.90	4.31	27352	73.79	239.70	8.5	16.8
2700.0	57.0	11.0	117	10.1	0.86	4.49	28584	62.14	232.30	8.5	16.8
2710.0	44.0	12.0	117	10.1	0.94	4.71	30180	80.50	226.23	8.5	16.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2718.0	45.0	12.0	117	10.1	0.94	4.89	31428	78.71	221.65	8.5	16.8
2728.0	43.0	12.0	117	10.1	0.95	5.12	33060	82.37	216.46	8.5	16.9
2738.0	57.0	13.0	118	10.1	0.90	5.30	34302	62.14	210.90	8.5	16.9
2747.0	55.0	13.0	118	10.1	0.91	5.46	35461	64.40	206.31	8.5	16.9

COMPUTER DATA LISTING : LIST B

INTERVAL 10 m average

DEPTH. Well depth, in metres

ROP. Rate of penetration, in metres per hour

BIT RUN. Depth interval drilled by the bit, in metres

HOURS. Cumulative bit hours. The number of hours
that the bit has actually been "on bottom",
recorded in decimal hours

TURNS. Cumulative bit turns. The number of turns
made by the bit, while actually "on bottom"

TOTAL COST Cumulative bit cost, in A dollars

ICOST. Incremental cost per metre, calculated
from the drilling time, in A dollars

CCOST. Cumulative cost per metre, calculated
from the drilling time, in A dollars

IC ICOST minus CCOST, expressed as a positive
or negative sign. When the bit becomes worn,
this should change from negative to positive

BIT NUMBER	1	IADC CODE	111	INTERVAL	65.0- 204.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	20 20 20
COST	3000.00	TRIP TIME	1.7	BIT RUN	139.0
TOTAL HOURS	5.80	TOTAL TURNS	33634	CONDITION	T2 B2 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
70.0	100.0	5.0	0.05	225	9198.50	35	1840	-
80.0	73.5	15.0	0.19	837	9680.32	48.18	645.35	-
90.0	13.3	25.0	0.94	4212	12336.82	265.65	493.47	-
100.0	33.1	35.0	1.24	5898	13407.20	107.04	383.06	-
110.0	14.3	45.0	1.94	9828	15886.60	247.94	353.04	-
120.0	10.9	55.0	2.85	14766	19125.00	323.84	347.73	-
130.0	12.3	65.0	3.67	19209	22002.88	287.79	338.51	-
140.0	16.8	75.0	4.26	22499	24115.65	211.28	321.54	-
150.0	22.4	85.0	4.71	25021	25694.08	157.84	302.28	-
160.0	42.6	95.0	4.94	26593	26524.99	83.09	279.21	-
170.0	50.8	105.0	5.14	28177	27222.66	69.77	259.26	-
180.0	51.7	115.0	5.33	29732	27907.61	68.50	242.67	-
190.0	41.9	125.0	5.57	31726	28753.75	84.61	230.03	-
200.0	68.3	135.0	5.72	32952	29272.42	51.87	216.83	-
204.0	50.0	139.0	5.80	33634	29555.78	70.84	212.63	-

BIT NUMBER	2	IADC CODE	111	INTERVAL	204.0-	799.0
HTC 3AJ		SIZE	17.500	NOZZLES	20	20 20
COST	5000.00	TRIP TIME	3.9	BIT RUN		595.0
TOTAL HOURS	13.87	TOTAL TURNS	116516	CONDITION	T3 B3 G0.000	

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
210.0	88.9	6.0	0.07	405	19052.89	40	3175	-
220.0	203.0	16.0	0.12	701	19227.33	17	1202	-
230.0	81.5	26.0	0.24	1437	19662.03	43.47	756.23	-
240.0	58.1	36.0	0.41	2470	20271.87	60.98	563.11	-
250.0	45.7	46.0	0.63	3784	21047.74	77.59	457.56	-
260.0	57.0	56.0	0.81	4838	21669.61	62.19	386.96	-
270.0	74.3	66.0	0.94	5645	22146.35	47.67	335.55	-
280.0	77.9	76.0	1.07	6416	22601.13	45.48	297.38	-
290.0	76.9	86.0	1.20	7355	23061.44	46.03	268.16	-
300.0	50.0	96.0	1.40	9034	23769.28	70.78	247.60	-
310.0	58.5	106.0	1.57	10451	24375.15	60.59	229.95	-
320.0	50.5	116.0	1.77	12079	25076.61	70.15	216.18	-
330.0	60.0	126.0	1.93	13444	25667.11	59.05	203.71	-
340.0	56.5	136.0	2.11	14921	26294.45	62.73	193.34	-
350.0	54.0	146.0	2.30	16523	26950.60	65.62	184.59	-
360.0	40.4	156.0	2.54	18748	27826.37	87.58	178.37	-
370.0	62.7	166.0	2.70	20159	28391.40	56.50	171.03	-
380.0	50.8	176.0	2.90	21921	29088.91	69.75	165.28	-
390.0	48.9	186.0	3.11	23748	29812.97	72.41	160.28	-
400.0	51.4	196.0	3.30	25480	30501.70	68.87	155.62	-
410.0	44.0	206.0	3.53	27510	31305.87	80.42	151.97	-
420.0	33.5	216.0	3.83	30166	32362.26	105.64	149.83	-
430.0	30.7	226.0	4.15	33075	33515.64	115.34	148.30	-
440.0	36.7	236.0	4.42	35520	34480.49	96.48	146.10	-
450.0	69.3	246.0	4.57	36810	34991.35	51.09	142.24	-
460.0	64.3	256.0	4.72	38200	35542.33	55.10	138.84	-
470.0	87.0	266.0	4.84	39228	35949.67	40.73	135.15	-
480.0	76.0	276.0	4.97	40405	36416.02	46.63	131.94	-
490.0	117.6	286.0	5.05	41166	36717.25	30.12	128.38	-
500.0	96.3	296.0	5.16	42098	37085.15	36.79	125.29	-
510.0	110.4	306.0	5.25	42913	37405.86	32.07	122.24	-
520.0	78.0	316.0	5.38	44067	37860.03	45.42	119.81	-
530.0	60.3	326.0	5.54	45559	38447.45	58.74	117.94	-
540.0	47.8	336.0	5.75	47442	39188.27	74.08	116.63	-
550.0	65.0	346.0	5.91	48826	39733.19	54.49	114.84	-
560.0	71.5	356.0	6.05	50064	40228.60	49.54	113.00	-
570.0	102.2	366.0	6.14	50916	40575.29	34.67	110.86	-
580.0	159.7	376.0	6.21	51461	40797.15	22.19	108.50	-
590.0	236.6	386.0	6.25	51828	40946.83	14.97	106.08	-
600.0	90.0	396.0	6.36	52729	41340.43	39.36	104.40	-
610.0	69.5	406.0	6.50	53894	41850.17	50.97	103.08	-
620.0	76.9	416.0	6.63	54948	42311.01	46.08	101.71	-
630.0	45.4	426.0	6.85	56734	43091.82	78.08	101.15	-

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
640.0	35.3	436.0	7.14	59027	44094.54	100.27	101.13	-
650.0	39.8	446.0	7.39	61214	44985.05	89.05	100.86	-
660.0	39.0	456.0	7.65	63446	45893.86	90.88	100.64	-
670.0	29.5	466.0	7.98	66399	47095.89	120.20	101.06	+
680.0	22.6	476.0	8.43	70242	48660.50	156.46	102.23	+
690.0	26.0	486.0	8.81	73593	50024.82	136.43	102.93	+
700.0	23.4	496.0	9.24	77310	51538.22	151.34	103.91	+
710.0	26.0	506.0	9.62	80652	52898.56	136.03	104.54	+
720.0	31.3	516.0	9.94	83431	54030.13	113.16	104.71	+
730.0	32.0	526.0	10.26	86152	55138.09	110.80	104.83	+
740.0	30.5	536.0	10.58	89008	56300.59	116.25	105.04	+
750.0	32.3	546.0	10.89	91751	57396.92	109.63	105.12	+
760.0	23.3	556.0	11.32	95608	58914.92	151.80	105.96	+
770.0	23.8	566.0	11.74	99384	60401.08	148.62	106.72	+
780.0	16.4	576.0	12.35	104424	62565.63	216.46	108.62	+
790.0	14.9	586.0	13.02	109792	64937.51	237.19	110.81	+
799.0	15.4	595.0	13.61	114532	67003.67	229.57	112.61	+

BIT NUMBER	3	IADC CODE	114	INTERVAL	799.0- 1293.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	5.7	BIT RUN	494.0
TOTAL HOURS	21.11	TOTAL TURNS	162445	CONDITION	T3 B5 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
800.0	16.0	1.0	0.06	510	21710.78	221	21711	-
810.0	18.1	11.0	0.61	4773	23664.64	195	2151	-
820.0	16.9	21.0	1.21	9221	25765.05	210	1227	-
830.0	16.4	31.0	1.82	13892	27919.77	215.47	900.64	-
840.0	17.6	41.0	2.39	18556	29937.40	201.76	730.18	-
850.0	16.1	51.0	3.01	23231	32142.14	220.47	630.24	-
860.0	14.7	61.0	3.69	28207	34550.34	240.82	566.40	-
870.0	10.6	71.0	4.63	35031	37887.04	333.67	533.62	-
880.0	10.8	81.0	5.56	41268	41167.34	328.03	508.24	-
890.0	21.0	91.0	6.03	44663	42850.02	168.27	470.88	-
900.0	19.4	101.0	6.55	48349	44676.14	182.61	442.34	-
910.0	26.6	111.0	6.92	50961	46007.54	133.14	414.48	-
920.0	18.3	121.0	7.47	55274	47941.61	193.41	396.21	-
930.0	22.4	131.0	7.91	58860	49522.92	158.13	378.04	-
940.0	17.6	141.0	8.48	63667	51540.05	201.71	365.53	-
950.0	11.5	151.0	9.35	69296	54607.31	306.73	361.64	-
960.0	14.0	161.0	10.06	74618	57135.23	252.79	354.88	-
970.0	17.5	171.0	10.64	79199	59162.37	202.71	345.98	-
980.0	31.7	181.0	10.95	82218	60280.27	111.79	333.04	-
990.0	33.3	191.0	11.25	85226	61343.87	106.36	321.17	-
1000.0	27.6	201.0	11.61	88568	62625.14	128.13	311.57	-
1010.0	35.4	211.0	11.90	91098	63626.36	100.12	301.55	-
1020.0	52.2	221.0	12.09	92823	64305.53	67.92	290.98	-
1030.0	40.2	231.0	12.34	95099	65186.79	88.13	282.19	-
1040.0	47.0	241.0	12.55	97032	65941.20	75.44	273.61	-
1050.0	50.1	251.0	12.75	98834	66648.44	70.72	265.53	-
1060.0	49.6	261.0	12.95	100636	67362.07	71.36	258.09	-
1070.0	41.8	271.0	13.19	102730	68208.52	84.64	251.69	-
1080.0	44.2	281.0	13.42	104716	69010.73	80.22	245.59	-
1090.0	59.4	291.0	13.58	106214	69607.33	59.66	239.20	-
1100.0	58.5	301.0	13.76	107716	70212.89	60.56	233.27	-
1110.0	48.6	311.0	13.96	109498	70941.74	72.89	228.11	-
1120.0	49.4	321.0	14.16	111239	71658.68	71.69	223.24	-
1130.0	46.0	331.0	14.38	113058	72428.59	76.99	218.82	-
1140.0	51.2	341.0	14.58	114582	73120.84	69.22	214.43	-
1150.0	50.5	351.0	14.77	116126	73821.89	70.11	210.32	-
1160.0	39.2	361.0	15.03	118067	74724.54	90.27	206.99	-
1170.0	39.2	371.0	15.28	119990	75627.59	90.31	203.85	-
1180.0	38.1	381.0	15.55	121959	76557.38	92.98	200.94	-
1190.0	46.0	391.0	15.76	123611	77326.60	76.92	197.77	-
1200.0	42.0	401.0	16.00	125426	78170.29	84.37	194.94	-
1210.0	36.0	411.0	16.28	127524	79155.18	98.49	192.59	-
1220.0	40.1	421.0	16.53	129391	80039.35	88.42	190.12	-

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
1230.0	36.1	431.0	16.81	131457	81020.47	98.11	187.98	-
1240.0	42.9	441.0	17.04	133242	81845.77	82.53	185.59	-
1250.0	37.6	451.0	17.31	135229	82786.77	94.10	183.56	-
1260.0	39.4	461.0	17.56	137119	83685.89	89.91	181.53	-
1270.0	29.9	471.0	17.89	139551	84870.74	118.48	180.19	-
1280.0	17.1	481.0	18.48	143669	86938.52	206.78	180.75	+
1290.0	5.2	491.0	20.39	157169	93696.25	675.77	190.83	+
1293.0	4.2	494.0	21.11	162445	96248.81	850.85	194.84	+

BIT NUMBER	4	IADC CODE	114	INTERVAL	1293.0- 1391.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	6.1	BIT RUN	98.0
TOTAL HOURS	4.14	TOTAL TURNS	33204	CONDITION	T1 B3 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1300.0	12.7	7.0	0.55	4475	24863.22	280	3552	-
1310.0	21.0	17.0	1.03	8340	26546.53	168	1562	-
1320.0	36.3	27.0	1.30	10485	27521.09	97	1019	-
1330.0	31.6	37.0	1.62	12915	28643.59	112.25	774.15	-
1340.0	26.0	47.0	2.00	15946	30004.88	136.13	638.40	-
1350.0	25.3	57.0	2.40	19055	31407.21	140.23	551.00	-
1360.0	16.7	67.0	3.00	23737	33526.24	211.90	500.39	-
1370.0	30.5	77.0	3.33	26348	34687.56	116.13	450.49	-
1380.0	21.9	87.0	3.78	30017	36302.31	161.48	417.27	-
1390.0	29.4	97.0	4.12	33063	37508.28	120.60	386.68	-
1391.0	63.0	98.0	4.14	33204	37564.50	56.22	383.31	-

BIT NUMBER	5	IADC CODE	4	INTERVAL	1392.0- 1404.4
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.1	BIT RUN	12.4
TOTAL HOURS	2.02	TOTAL TURNS	11091	CONDITION	T0 B0 G0.300

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1400.0	6.1	8.0	1.32	6389	41279.46	584	5160	-
1404.4	6.3	12.4	2.02	11091	43758.59	563	3529	-

BIT NUMBER	5	IADC CODE	4	INTERVAL	1405.0- 1418.2
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.2	BIT RUN	13.2
TOTAL HOURS	5.21	TOTAL TURNS	28361	CONDITION	TO B0 G0.800

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
1410.0	3.1	18.0	3.66	19706	49909.46	1159	2773	-
1418.2	5.7	26.2	5.08	27641	54967.48	617	2098	-

BIT NUMBER	6	IADC CODE	114	INTERVAL	1418.0- 1495.0
HTC X3A		SIZE	12.250	NOZZLES	14 14 15
COST	1400.00	TRIP TIME	6.4	BIT RUN	77.0
TOTAL HOURS	4.60	TOTAL TURNS	36973	CONDITION	-T7 B6 G0.750

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1420.0	20.4	2.0	0.10	833	24416.68	174	12208	-
1430.0	20.6	12.0	0.58	5095	26139.72	172	2178	-
1440.0	33.5	22.0	0.88	7461	27195.78	106	1236	-
1450.0	43.2	32.0	1.11	9262	28015.72	81.99	875.49	-
1460.0	41.2	42.0	1.36	11228	28874.49	85.88	687.49	-
1470.0	35.5	52.0	1.64	13605	29873.34	99.89	574.49	-
1480.0	24.0	62.0	2.06	17173	31351.11	147.78	505.66	-
1490.0	7.4	72.0	3.42	27849	36169.81	481.87	502.36	-
1495.0	4.2	77.0	4.60	36973	40379.31	841.90	524.41	+

BIT NUMBER	7	IADC CODE	217	INTERVAL	1495.0- 1585.0
HTC JD4		SIZE	12.250	NOZZLES	15 15 14
COST	1800.00	TRIP TIME	6.8	BIT RUN	90.0
TOTAL HOURS	7.22	TOTAL TURNS	49693	CONDITION	T7 E5 G0.313

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1500.0	25.4	5.0	0.20	1534	26582.22	139	5316	-
1510.0	17.0	15.0	0.79	5980	28670.17	209	1911	-
1520.0	18.8	25.0	1.32	9657	30554.22	188	1222	-
1530.0	24.7	35.0	1.72	12328	31990.12	143.59	914.00	-
1540.0	13.1	45.0	2.49	16491	34700.34	271.02	771.12	-
1550.0	8.6	55.0	3.65	24303	38803.29	410.29	705.51	-
1560.0	47.8	65.0	3.86	25838	39543.89	74.06	608.37	-
1570.0	45.0	75.0	4.08	27615	40331.63	78.77	537.76	-
1580.0	7.9	85.0	5.35	36713	44825.92	449.43	527.36	-
1585.0	2.7	90.0	7.22	49693	51447.30	1324	572	+

BIT NUMBER	9	IADC CODE	517	INTERVAL	1585.0- 1986.0
HTC J22		SIZE	12.250	NOZZLES	15 15 14
COST	4200.00	TRIP TIME	8.2	BIT RUN	401.0
TOTAL HOURS	40.51	TOTAL TURNS	244481	CONDITION	T5 B4 G0.188

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1590.0	4.2	5.0	1.20	5532	37485.60	848	7497	-
1600.0	11.7	15.0	2.05	9604	40522.06	304	2701	-
1610.0	21.1	25.0	2.53	11829	42198.01	168	1688	-
1620.0	12.3	35.0	3.34	16085	45078.50	288	1288	-
1630.0	25.3	45.0	3.74	18531	46480.31	140	1033	-
1640.0	20.5	55.0	4.22	21518	48209.05	172.87	876.53	-
1650.0	9.6	65.0	5.26	28066	51879.57	367.05	798.15	-
1660.0	17.3	75.0	5.84	31691	53927.00	204.74	719.03	-
1670.0	27.1	85.0	6.21	33984	55233.93	130.69	649.81	-
1680.0	11.0	95.0	7.12	39609	58453.68	321.98	615.30	-
1690.0	7.3	105.0	8.49	48174	63315.88	486.22	603.01	-
1700.0	7.0	115.0	9.92	57154	68378.91	506.30	594.60	-
1710.0	11.1	125.0	10.82	63470	71584.07	320.52	572.67	-
1720.0	7.8	135.0	12.10	72565	76104.31	452.02	563.74	-
1730.0	11.6	145.0	12.96	78717	79159.11	305.48	545.92	-
1740.0	13.9	155.0	13.68	83455	81712.78	255.37	527.18	-
1750.0	10.3	165.0	14.65	90080	85143.02	343.02	516.02	-
1760.0	5.6	175.0	16.42	102103	91421.51	627.85	522.41	+
1770.0	8.4	185.0	17.61	109766	95635.63	421.41	516.95	-
1780.0	10.7	195.0	18.55	115069	98948.67	331.30	507.43	-
1790.0	16.9	205.0	19.14	118451	101041.44	209.28	492.89	-
1800.0	13.7	215.0	19.87	122756	103619.84	257.84	481.95	-
1810.0	6.4	225.0	21.43	132260	109162.26	554.24	485.17	+
1820.0	8.4	235.0	22.63	139428	113392.45	423.02	482.52	-
1830.0	15.2	245.0	23.29	143518	115730.16	233.77	472.37	-
1840.0	8.5	255.0	24.47	150971	119901.88	417.17	470.20	-
1850.0	9.6	265.0	25.51	157402	123592.36	369.05	466.39	-
1860.0	9.3	275.0	26.58	163979	127382.75	379.04	463.21	-
1870.0	6.6	285.0	28.08	173019	132719.60	533.69	465.68	+
1880.0	9.6	295.0	29.13	178957	136425.78	370.62	462.46	-
1890.0	12.4	305.0	29.94	183458	139274.98	284.92	456.64	-
1900.0	8.8	315.0	31.07	189565	143280.55	400.56	454.86	-
1910.0	10.2	325.0	32.05	194932	146760.81	348.03	451.57	-
1920.0	10.1	335.0	33.04	200524	150272.10	351.13	448.57	-
1930.0	7.6	345.0	34.35	208337	154916.03	464.39	449.03	+
1940.0	10.8	355.0	35.28	213312	158209.77	329.37	445.66	-
1950.0	11.0	365.0	36.19	218211	161423.25	321.35	442.26	-
1960.0	7.6	375.0	37.50	225748	166075.82	465.26	442.87	+
1970.0	8.3	385.0	38.70	233021	170331.31	425.55	442.42	-
1980.0	8.6	395.0	39.86	240335	174443.60	411.23	441.63	-
1986.0	9.4	401.0	40.50	244481	176705.08	376.91	440.66	-

BIT NUMBER	10	IADC CODE	517	INTERVAL	1986.0- 2161.0
HTC J22		SIZE	12.250	NOZZLES	14 14 15
COST	4200.00	TRIP TIME	8.9	BIT RUN	175.0
TOTAL HOURS	29.75	TOTAL TURNS	175777	CONDITION	T8 B5 G0.125

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1990.0	15.7	4.0	0.25	1223	36626.20	226	9157	-
2000.0	10.3	14.0	1.22	6379	40055.26	343	2861	-
2010.0	13.8	24.0	1.95	10681	42615.40	256	1776	-
2020.0	11.6	34.0	2.81	15771	45681.86	307	1344	-
2030.0	9.9	44.0	3.83	21837	49274.49	359	1120	-
2040.0	9.2	54.0	4.91	28297	53124.48	385.00	983.79	-
2050.0	14.0	64.0	5.63	32500	55656.40	253.19	869.63	-
2060.0	4.0	74.0	8.12	47193	64502.06	884.57	871.65	+
2070.0	7.6	84.0	9.45	55136	69191.20	468.91	823.70	-
2080.0	6.1	94.0	11.08	65605	74956.29	576.51	797.41	-
2090.0	5.3	104.0	12.96	78736	81617.15	666.09	784.78	-
2100.0	7.2	114.0	14.34	87019	86507.12	489.00	758.83	-
2110.0	5.7	124.0	16.09	97541	92718.40	621.13	747.73	-
2120.0	4.6	134.0	18.25	110266	100374.51	765.61	749.06	+
2130.0	4.8	144.0	20.33	122125	107743.52	736.90	748.22	-
2140.0	2.8	154.0	23.85	142154	120189.75	1245	780	+
2150.0	4.6	164.0	26.02	154558	127897.56	770.78	779.86	-
2160.0	3.1	174.0	29.22	172793	139228.71	1133	800	+
2161.0	1.9	175.0	29.75	175777	141083.16	1854	806	+

BIT NUMBER	11	IADC CODE	527	INTERVAL	2161.0- 2324.5
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	9.5	BIT RUN	163.5
TOTAL HOURS	35.81	TOTAL TURNS	204879	CONDITION	T4 B6 G0.188

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2162.0	1.5	1.0	0.66	3738	42062.00	2300	41646	-
2163.0	1.6	2.0	1.28	7301	44275.75	2214	22028	-
2164.0	2.9	3.0	1.63	9287	45509.90	1234	15120	-
2165.0	3.5	4.0	1.92	10939	46536.56	1027	11605	-
2166.0	7.7	5.0	2.05	11684	46999.57	463	9381	-
2167.0	9.1	6.0	2.16	12310	47388.37	389	7885	-
2168.0	9.1	7.0	2.27	12936	47777.18	389	6816	-
2169.0	8.2	8.0	2.39	13633	48210.71	434	6019	-
2170.0	8.5	9.0	2.51	14307	48629.39	419	5397	-
2171.0	8.2	10.0	2.63	15002	49061.34	432	4901	-
2172.0	8.5	11.0	2.75	15673	49478.05	417	4494	-
2173.0	4.5	12.0	2.97	16939	50265.16	787	4185	-
2174.0	10.4	13.0	3.07	17487	50605.74	341	3890	-
2175.0	8.5	14.0	3.19	18161	51024.41	419	3642	-
2176.0	8.9	15.0	3.30	18802	51422.39	398	3426	-
2177.0	8.5	16.0	3.42	19472	51839.09	417	3238	-
2178.0	6.9	17.0	3.56	20301	52353.92	515	3078	-
2179.0	6.9	18.0	3.71	21127	52867.25	513	2935	-
2180.0	6.3	19.0	3.87	22032	53429.48	562	2811	-
2181.0	6.4	20.0	4.02	22922	53982.91	553	2698	-
2182.0	6.2	21.0	4.18	23842	54554.20	571	2597	-
2183.0	4.5	22.0	4.40	25108	55341.31	787	2514	-
2184.0	5.9	23.0	4.57	26074	55941.65	600	2431	-
2185.0	5.9	24.0	4.74	27040	56541.99	600	2355	-
2186.0	6.4	25.0	4.90	27931	57095.43	553	2283	-
2187.0	6.4	26.0	5.06	28822	57648.87	553	2216	-
2188.0	7.2	27.0	5.20	29622	58140.81	492	2153	-
2189.0	6.4	28.0	5.35	30522	58694.25	553	2095	-
2190.0	8.2	29.0	5.47	31224	59126.20	432	2038	-
2191.0	7.3	30.0	5.61	32013	59611.41	485	1986	-
2192.0	8.2	31.0	5.73	32716	60043.36	432	1936	-
2193.0	4.7	32.0	5.95	33928	60796.97	754	1899	-
2194.0	3.0	33.0	6.28	35828	61977.64	1181	1878	-
2195.0	4.6	34.0	6.50	37067	62747.64	770	1845	-
2196.0	9.6	35.0	6.60	37661	63116.60	369	1803	-
2197.0	8.9	36.0	6.71	38304	63515.92	399	1764	-
2198.0	6.9	37.0	6.86	39132	64030.75	515	1730	-
2199.0	7.7	38.0	6.99	39873	64490.75	460	1697	-
2200.0	6.2	39.0	7.15	40792	65062.04	571	1668	-
2201.0	6.3	40.0	7.31	41692	65621.60	560	1640	-
2202.0	4.5	41.0	7.53	42959	66408.71	787	1619	-
2203.0	3.0	42.0	7.86	44859	67589.37	1181	1609	-
2204.0	3.2	43.0	8.17	46635	68692.80	1103	1597	-

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
2205.0	10.5	44.0	8.27	47178	69030.13	337	1569	-
2206.0	9.6	45.0	8.37	47773	69400.25	370	1542	-
2207.0	10.6	46.0	8.47	48283	69734.40	334	1516	-
2208.0	7.3	47.0	8.61	49022	70219.61	485	1494	-
2209.0	9.6	48.0	8.71	49585	70588.56	369	1470	-
2210.0	9.6	49.0	8.81	50147	70957.52	369	1448	-
2211.0	8.2	50.0	8.94	50808	71391.06	434	1428	-
2212.0	10.0	51.0	9.04	51348	71745.26	354	1406	-
2213.0	9.6	52.0	9.14	51911	72114.22	369	1387	-
2214.0	8.2	53.0	9.26	52569	72546.17	432	1369	-
2215.0	8.2	54.0	9.38	53228	72978.12	432	1351	-
2216.0	7.3	55.0	9.52	53968	73463.33	485	1335	-
2217.0	5.9	56.0	9.69	54881	74062.65	599	1322	-
2218.0	7.3	57.0	9.83	55621	74547.85	485	1308	-
2219.0	8.5	58.0	9.95	56256	74964.56	417	1292	-
2220.0	7.8	59.0	10.07	56949	75418.66	454	1278	-
2221.0	4.1	60.0	10.32	58282	76293.23	875	1271	-
2222.0	7.8	61.0	10.45	58974	76747.33	454	1258	-
2223.0	10.1	62.0	10.55	59497	77098.03	351	1243	-
2224.0	4.5	63.0	10.77	60830	77885.14	787	1236	-
2225.0	5.2	64.0	10.96	61975	78561.09	676	1227	-
2226.0	5.2	65.0	11.15	63006	79237.05	676	1219	-
2227.0	5.1	66.0	11.35	64061	79928.84	692	1211	-
2228.0	4.1	67.0	11.59	65394	80803.41	875	1206	-
2229.0	3.5	68.0	11.88	66932	81812.53	1009	1203	-
2230.0	6.7	69.0	12.03	67738	82341.18	529	1193	-
2231.0	5.0	70.0	12.23	68818	83049.58	708	1186	-
2232.0	11.0	71.0	12.32	69309	83371.58	322	1174	-
2233.0	5.1	72.0	12.51	70368	84066.09	695	1167	-
2234.0	6.3	73.0	12.67	71225	84628.32	562	1159	-
2235.0	8.5	74.0	12.79	71861	85045.02	417	1149	-
2236.0	6.7	75.0	12.94	72667	85573.68	529	1141	-
2237.0	6.3	76.0	13.10	73520	86133.24	560	1133	-
2238.0	7.3	77.0	13.24	74259	86618.44	485	1125	-
2239.0	8.9	78.0	13.35	74866	87016.42	398	1115	-
2240.0	4.2	79.0	13.59	76152	87859.75	843	1112	-
2241.0	6.3	80.0	13.74	77043	88419.31	560	1105	-
2242.0	6.3	81.0	13.90	77934	88978.87	560	1098	-
2243.0	7.7	82.0	14.03	78671	89441.88	463	1091	-
2244.0	9.5	83.0	14.14	79267	89815.90	374	1082	-
2245.0	10.6	84.0	14.23	79810	90150.05	334	1073	-
2246.0	7.7	85.0	14.36	80563	90613.06	463	1066	-
2247.0	6.9	86.0	14.51	81400	91127.88	515	1060	-
2248.0	4.9	87.0	14.71	82576	91850.74	723	1056	-
2249.0	2.6	88.0	15.10	84837	93213.05	1362	1059	+
2250.0	4.0	89.0	15.35	86307	94098.55	886	1057	-
2251.0	3.8	90.0	15.61	87855	95030.65	932	1056	-
2252.0	3.3	91.0	15.91	89636	96103.98	1073	1056	+
2253.0	2.5	92.0	16.32	92007	97532.21	1428	1060	+
2254.0	2.6	93.0	16.70	94269	98894.52	1362	1063	+

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2255.0	5.6	94.0	16.88	95315	99524.77	630	1059	-
2256.0	6.7	95.0	17.03	96194	100054.21	529	1053	-
2257.0	5.6	96.0	17.21	97240	100684.46	630	1049	-
2258.0	3.6	97.0	17.48	98874	101668.35	984	1048	-
2259.0	6.7	98.0	17.63	99751	102197.01	529	1043	-
2260.0	7.2	99.0	17.77	100568	102688.95	492	1037	-
2261.0	4.4	100.0	18.00	101920	103503.21	814	1035	-
2262.0	7.2	101.0	18.14	102736	103995.15	492	1030	-
2263.0	5.4	102.0	18.33	103825	104651.08	656	1026	-
2264.0	5.6	103.0	18.50	104875	105283.58	633	1022	-
2265.0	4.7	104.0	18.72	106126	106037.19	754	1019	-
2266.0	5.0	105.0	18.92	107302	106745.59	708	1017	-
2267.0	5.9	106.0	19.09	108299	107345.93	600	1013	-
2268.0	3.9	107.0	19.35	109826	108265.93	920	1012	-
2269.0	2.8	108.0	19.70	111926	109530.93	1265	1014	+
2270.0	4.0	109.0	19.95	113396	110416.43	886	1013	-
2271.0	5.0	110.0	20.15	114572	111124.83	708	1010	-
2272.0	4.6	111.0	20.37	115851	111894.83	770	1008	-
2273.0	6.7	112.0	20.52	116728	112423.49	529	1004	-
2274.0	6.2	113.0	20.68	117677	112994.78	571.29	999.87	-
2275.0	4.3	114.0	20.91	119044	113818.50	823.72	998.32	-
2276.0	3.8	115.0	21.18	120591	114750.61	932.11	997.74	-
2277.0	4.8	116.0	21.39	121816	115488.52	737.92	995.50	-
2278.0	4.0	117.0	21.64	123286	116374.02	885.50	994.56	-
2279.0	3.5	118.0	21.92	124966	117386.02	1012	995	+
2280.0	5.0	119.0	22.12	126142	118094.42	708.40	992.31	-
2281.0	2.7	120.0	22.49	128320	119406.27	1312	995	+
2282.0	4.6	121.0	22.71	129593	120172.94	766.67	993.08	-
2283.0	3.0	122.0	23.04	131553	121353.61	1181	995	+
2284.0	4.5	123.0	23.26	132854	122137.24	783.63	992.90	-
2285.0	4.3	124.0	23.50	134231	122966.74	829.51	991.59	-
2286.0	5.6	125.0	23.68	135277	123596.99	630.25	988.70	-
2287.0	5.4	126.0	23.86	136374	124257.81	660.82	986.09	-
2288.0	3.5	127.0	24.15	138078	125284.48	1027	986	+
2289.0	5.9	128.0	24.32	139082	125888.92	604.44	983.43	-
2290.0	6.4	129.0	24.48	140001	126442.36	553.44	980.10	-
2291.0	4.6	130.0	24.70	141279	127212.36	770.00	978.48	-
2292.0	6.2	131.0	24.86	142227	127783.65	571.29	975.37	-
2293.0	4.4	132.0	25.09	143576	128596.03	812.39	974.14	-
2294.0	7.2	133.0	25.23	144394	129088.66	492.63	970.52	-
2295.0	4.3	134.0	25.46	145649	129912.38	823.72	969.42	-
2296.0	4.1	135.0	25.71	146983	130786.95	874.57	968.72	-
2297.0	3.9	136.0	25.96	148367	131695.15	908.21	968.28	-
2298.0	3.9	137.0	26.22	149770	132615.15	920.00	967.92	-
2299.0	3.7	138.0	26.49	151241	133580.28	965.12	967.90	-
2300.0	4.9	139.0	26.70	152343	134303.13	722.86	966.14	-
2301.0	4.0	140.0	26.95	153687	135184.23	881.09	965.53	-
2302.0	4.4	141.0	27.17	154906	135983.78	799.55	964.36	-
2303.0	3.4	142.0	27.47	156494	137025.54	1042	965	+
2304.0	4.4	143.0	27.69	157721	137830.54	805.00	963.78	-

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
2305.0	6.0	144.0	27.86	158621	138420.87	590.33	961.19	-
2306.0	5.6	145.0	28.04	159585	139053.37	632.50	958.92	-
2307.0	6.3	146.0	28.20	160439	139612.93	559.56	956.19	-
2308.0	5.6	147.0	28.38	161403	140245.43	632.50	953.99	-
2309.0	3.1	148.0	28.70	163145	141388.01	1143	955	+
2310.0	1.9	149.0	29.24	166048	143292.31	1904	962	+
2311.0	2.4	150.0	29.65	168270	144749.93	1458	965	+
2312.0	1.5	151.0	30.30	171777	147049.93	2300	974	+
2313.0	1.6	152.0	30.92	175527	149263.68	2214	982	+
2314.0	1.5	153.0	31.59	179554	151640.86	2377	991	+
2315.0	1.3	154.0	32.36	184169	154365.47	2725	1002	+
2316.0	1.8	155.0	32.92	187502	156333.25	1968	1009	+
2317.0	2.3	156.0	33.35	190111	157873.25	1540	1012	+
2318.0	5.4	157.0	33.54	191222	158529.18	656	1010	-
2319.0	5.9	158.0	33.71	192239	159129.52	600	1007	-
2320.0	5.6	159.0	33.89	193310	159762.02	633	1005	-
2321.0	5.9	160.0	34.05	194326	160361.34	599	1002	-
2322.0	2.4	161.0	34.48	196879	161868.57	1507	1005	+
2323.0	2.0	162.0	34.98	199879	163639.57	1771	1010	+
2324.0	1.2	163.0	35.81	204879	166591.24	2952	1022	+
2324.5	1.3	163.5	36.22	207325	168035.29	2725	1027	+

BIT NUMBER	12	IADC CODE	527	INTERVAL	2324.5- 2521.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.2	BIT RUN	196.5
TOTAL HOURS	45.29	TOTAL TURNS	252275	CONDITION	T6 B6 G0.250

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2330.0	5.9	5.5	0.92	4764	45480.79	598	8330	-
2340.0	5.5	15.5	2.74	14559	51905.87	643	3357	-
2350.0	3.7	25.5	5.45	30498	61507.86	960	2416	-
2360.0	4.3	35.5	7.76	45409	69697.81	819	1966	-
2370.0	5.3	45.5	9.66	57455	76437.31	674	1681	-
2380.0	3.7	55.5	12.35	71985	85968.31	953	1550	-
2390.0	4.2	65.5	14.71	84745	94337.46	837	1441	-
2400.0	3.9	75.5	17.25	98459	103332.97	900	1369	-
2410.0	5.3	85.5	19.13	108586	109975.47	664	1287	-
2420.0	4.4	95.5	21.41	120912	118060.80	809	1237	-
2430.0	3.9	105.5	23.98	134795	127166.57	911	1206	-
2440.0	5.1	115.5	25.96	145444	134151.97	699	1162	-
2450.0	4.4	125.5	28.25	157825	142272.91	812	1134	-
2460.0	4.3	135.5	30.58	170406	150525.14	825	1111	-
2470.0	4.5	145.5	32.81	182466	158435.38	791	1089	-
2480.0	4.3	155.5	35.15	195120	166735.66	830	1073	-
2490.0	4.3	165.5	37.49	207706	174991.29	826	1058	-
2500.0	3.8	175.5	40.15	222071	184413.31	942	1051	-
2510.0	7.1	185.5	41.55	230268	189394.24	498	1021	-
2520.0	2.8	195.5	45.09	251051	201916.30	1252	1033	+
2521.0	4.9	196.5	45.29	252275	202639.16	723	1031	-

BIT NUMBER	13	IADC CODE	316	INTERVAL	2521.0- 2535.0
HTC J7		SIZE	12.250	NOZZLES	14 14 14
COST	1800.00	TRIP TIME	10.2	BIT RUN	14.0
TOTAL HOURS	6.20	TOTAL TURNS	20696	CONDITION	T3 B2 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2530.0	2.9	9.0	3.16	14193	49111.42	1243	5457	-
2535.0	1.6	14.0	6.20	20696	59873.06	2152	4277	-

BIT NUMBER	14	IADC CODE	527	INTERVAL	2535.0- 2600.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.4	BIT RUN	65.0
TOTAL HOURS	8.77	TOTAL TURNS	53719	CONDITION	T5 B3 G0.125

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2540.0	12.5	5.0	0.40	2863	44338.15	282	8868	-
2550.0	7.7	15.0	1.70	11066	48944.21	461	3263	-
2560.0	8.1	25.0	2.93	20369	53306.20	436	2132	-
2570.0	9.6	35.0	3.97	26406	57002.31	370	1629	-
2580.0	5.6	45.0	5.75	37243	63302.94	630	1407	-
2590.0	7.2	55.0	7.14	45319	68224.68	492	1240	-
2600.0	6.2	65.0	8.77	53719	73977.81	575	1138	-

BIT NUMBER	15	IADC CODE	527	INTERVAL	2600.0- 2663.3
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	10.7	BIT RUN	63.3
TOTAL HOURS	13.94	TOTAL TURNS	76380	CONDITION	T3 B3 G0.125

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2610.0	3.7	10.0	2.72	13893	53607.49	962	5361	-
2620.0	7.0	20.0	4.15	21555	58700.10	509	2935	-
2630.0	3.5	30.0	7.00	37021	68786.60	1009	2293	-
2640.0	4.4	40.0	9.27	49116	76812.98	803	1920	-
2650.0	4.1	50.0	11.68	62940	85359.12	855	1707	-
2660.0	5.8	60.0	13.41	73510	91504.77	615	1525	-
2663.3	11.0	63.3	13.71	75202	92565.14	321	1462	-

BIT NUMBER	16	IADC CODE	4	INTERVAL	2663.3- 2669.0
CHRISTENSEN C20		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	10.7	BIT RUN	5.7
TOTAL HOURS	4.08	TOTAL TURNS	18692	CONDITION	TO BO GO.200

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2663.4	6.2	0.1	0.02	62	52956.53	571	529565	-
2663.6	6.9	0.3	0.05	173	53059.20	513	176864	-
2663.8	3.6	0.5	0.10	387	53255.97	984	106512	-
2664.0	1.5	0.7	0.23	899	53728.24	2361	76755	-
2664.2	1.3	0.9	0.39	1508	54290.46	2811	60323	-
2664.4	1.8	1.1	0.50	1930	54679.69	1946	49709	-
2664.6	3.6	1.3	0.56	2142	54875.38	978	42212	-
2664.8	4.3	1.5	0.60	2321	55040.13	824	36693	-
2665.0	4.1	1.7	0.65	2517	55212.91	864	32478	-
2665.2	3.0	1.9	0.72	2829	55449.04	1181	29184	-
2665.4	3.0	2.1	0.79	3141	55685.18	1181	26517	-
2665.6	2.7	2.3	0.86	3488	55947.55	1312	24325	-
2665.8	4.0	2.5	0.91	3722	56124.65	886	22450	-
2666.0	3.2	2.7	0.97	4014	56346.02	1107	20869	-
2666.2	0.9	2.9	1.19	5049	57129.65	3918	19700	-
2666.4	0.7	3.1	1.48	6387	58141.65	5060	18755	-
2666.6	0.8	3.3	1.74	7618	59073.75	4661	17901	-
2666.8	0.6	3.5	2.08	9218	60254.42	5903	17216	-
2667.0	0.7	3.7	2.35	10533	61224.83	4852	16547	-
2667.2	0.8	3.9	2.60	11733	62110.33	4428	15926	-
2667.4	0.8	4.1	2.86	12980	63030.33	4600	15373	-
2667.6	1.3	4.3	3.01	13696	63558.99	2643	14781	-
2667.8	1.3	4.5	3.16	14413	64087.65	2643	14242	-
2668.0	1.8	4.7	3.27	14955	64487.87	2001	13721	-
2668.2	0.5	4.9	3.64	16733	65799.72	6559	13429	-
2668.4	1.7	5.1	3.76	17298	66216.43	2084	12984	-
2668.6	2.1	5.3	3.85	17755	66553.76	1687	12557	-
2668.8	2.1	5.5	3.95	18212	66891.10	1687	12162	-
2669.0	1.5	5.7	4.08	18692	67363.36	2361	11818	-

BIT NUMBER	17	IADC CODE	527	INTERVAL	2669.0- 2815.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.2	BIT RUN	146.0
TOTAL HOURS	33.41	TOTAL TURNS	234387	CONDITION	T6 B5 G0.187

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2670.0	3.0	1.0	0.33	1600	46941.07	1181	46941	-
2680.0	1.7	11.0	6.35	39953	68250.84	2131	6205	-
2690.0	6.0	21.0	8.02	52081	74161.50	591	3531	-
2700.0	5.3	31.0	9.92	65337	80881.12	672	2609	-
2710.0	4.3	41.0	12.25	82230	89144.82	826	2174	-
2720.0	8.6	51.0	13.41	90746	93274.07	413	1829	-
2730.0	5.2	61.0	15.35	104809	100123.64	685	1641	-
2740.0	5.8	71.0	17.06	117115	106193.81	607	1496	-
2750.0	6.2	81.0	18.69	128809	111946.53	575	1382	-
2760.0	4.6	91.0	20.86	144720	119629.75	768	1315	-
2770.0	4.5	101.0	23.06	160621	127429.38	780	1262	-
2780.0	4.2	111.0	25.46	177685	135945.87	852	1225	-
2790.0	3.7	121.0	28.13	197154	145398.79	945	1202	-
2800.0	5.3	131.0	30.02	210864	152105.16	671	1161	-
2810.0	5.3	141.0	31.90	223947	158764.87	666	1126	-
2815.0	2.9	146.0	33.64	236008	164907.98	1229	1130	+

BIT NUMBER	18	IADC CODE	527	INTERVAL	2815.0- 2955.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.7	BIT RUN	140.0
TOTAL HOURS	36.54	TOTAL TURNS	218379	CONDITION	T6 B6 G0.250

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2820.0	3.7	5.0	1.37	8706	52377.63	969	10476	-
2830.0	8.7	15.0	2.52	15999	56456.13	408	3764	-
2840.0	5.6	25.0	4.30	26943	62769.45	631	2511	-
2850.0	3.9	35.0	6.88	42402	71895.58	913	2054	-
2860.0	5.4	45.0	8.73	53532	78466.26	657	1744	-
2870.0	5.3	55.0	10.62	65231	85164.74	670	1548	-
2880.0	4.2	65.0	13.02	80072	93665.40	850	1441	-
2890.0	2.8	75.0	16.56	101368	106180.62	1252	1416	-
2900.0	3.1	85.0	19.79	119998	117619.70	1144	1384	-
2910.0	3.2	95.0	22.93	135604	128758.04	1114	1355	-
2920.0	5.0	105.0	24.95	148039	135909.77	715	1294	-
2930.0	3.4	115.0	27.91	166519	146398.06	1049	1273	-
2940.0	3.0	125.0	31.30	187206	158402.12	1200	1267	-
2950.0	3.5	135.0	34.19	204829	168647.08	1024	1249	-
2955.0	2.1	140.0	36.54	218379	176953.14	1661	1264	+

BIT NUMBER	19	IADC CODE	131	INTERVAL	1998.0-	2460.0
HTC OSC IG		SIZE	8.500	NOZZLES	28	28
COST	900.00	TRIP TIME	9.9	BIT RUN		462.0
TOTAL HOURS	14.37	TOTAL TURNS	104481	CONDITION	T3	B5 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2000.0	50.0	2.0	0.04	240	36107.48	71	18054	-
2010.0	30.0	12.0	0.37	2242	37289.34	118	3107	-
2020.0	20.0	22.0	0.87	5842	39060.34	177	1775	-
2030.0	26.0	32.0	1.26	8607	40420.67	136	1263	-
2040.0	22.2	42.0	1.71	11577	42014.57	159	1000	-
2050.0	21.4	52.0	2.18	14812	43670.07	165.55	839.81	-
2060.0	21.0	62.0	2.65	18248	45360.57	169.05	731.62	-
2070.0	25.5	72.0	3.04	21167	46750.13	138.96	649.31	-
2080.0	26.0	82.0	3.43	23987	48114.45	136.43	586.76	-
2090.0	17.8	92.0	3.99	28104	50106.83	199.24	544.64	-
2100.0	27.1	102.0	4.36	30805	51413.50	130.67	504.05	-
2110.0	30.5	112.0	4.69	33205	52575.12	116.16	469.42	-
2120.0	29.0	122.0	5.03	35732	53797.95	122.28	440.97	-
2130.0	30.9	132.0	5.36	38113	54945.31	114.74	416.25	-
2140.0	33.9	142.0	5.65	40291	55990.69	104.54	394.30	-
2150.0	31.0	152.0	5.98	42674	57134.46	114.38	375.88	-
2160.0	34.5	162.0	6.27	44822	58161.34	102.69	359.02	-
2170.0	34.0	172.0	6.56	47012	59204.01	104.27	344.21	-
2180.0	33.0	182.0	6.86	49267	60277.34	107.33	331.19	-
2190.0	33.0	192.0	7.17	51522	61350.68	107.33	319.53	-
2200.0	34.5	202.0	7.46	53678	62377.56	102.69	308.80	-
2210.0	38.5	212.0	7.72	55611	63297.71	92.02	298.57	-
2220.0	34.3	222.0	8.01	57799	64330.80	103.31	289.78	-
2230.0	32.3	232.0	8.32	60120	65427.13	109.63	282.01	-
2240.0	33.4	242.0	8.62	62364	66486.57	105.94	274.74	-
2250.0	33.0	252.0	8.92	64612	67560.89	107.43	268.10	-
2260.0	35.5	262.0	9.20	66674	68558.83	99.79	261.67	-
2270.0	35.0	272.0	9.49	68766	69570.83	101.20	255.78	-
2280.0	36.0	282.0	9.77	70801	70555.48	98.46	250.20	-
2290.0	36.0	292.0	10.04	72834	71539.37	98.39	245.00	-
2300.0	36.0	302.0	10.32	74867	72523.26	98.39	240.14	-
2310.0	36.0	312.0	10.60	76902	73507.91	98.46	235.60	-
2320.0	30.0	322.0	10.93	79342	74688.57	118.07	231.95	-
2330.0	35.0	332.0	11.22	81434	75700.57	101.20	228.01	-
2340.0	36.4	342.0	11.49	83442	76672.63	97.21	224.19	-
2350.0	36.2	352.0	11.77	85467	77652.04	97.94	220.60	-
2360.0	35.5	362.0	12.05	87529	78649.99	99.79	217.27	-
2370.0	38.4	372.0	12.31	89433	79571.39	92.14	213.90	-
2380.0	40.0	382.0	12.56	91263	80456.89	88.55	210.62	-
2390.0	40.0	392.0	12.81	93093	81342.39	88.55	207.51	-
2400.0	42.0	402.0	13.05	94836	82185.72	84.33	204.44	-
2410.0	42.0	412.0	13.29	96579	83029.05	84.33	201.53	-
2420.0	44.0	422.0	13.51	98243	83834.47	80.54	198.66	-

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
2430.0	46.5	432.0	13.73	99819	84596.98	76.25	195.83	-
2440.0	48.0	442.0	13.94	101344	85334.90	73.79	193.07	-
2450.0	47.4	452.0	14.15	102889	86082.66	74.78	190.45	-
2460.0	46.0	462.0	14.37	104481	86852.66	77.00	187.99	-

BIT NUMBER	20	IADC CODE	116	INTERVAL	2460.0- 2747.0
HTC J2		SIZE	8.500	NOZZLES	16 16 16
COST	900.00	TRIP TIME	11.0	BIT RUN	287.0
TOTAL HOURS	5.46	TOTAL TURNS	35461	CONDITION	T2 B2 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2470.0	47.7	10.0	0.21	1460	40604.92	74	4060	-
2480.0	40.4	20.0	0.46	3220	41482.16	88	2074	-
2490.0	49.7	30.0	0.66	4669	42195.13	71	1407	-
2500.0	46.0	40.0	0.88	6235	42965.49	77	1074	-
2510.0	49.5	50.0	1.08	7690	43681.12	71.56	873.62	-
2520.0	51.5	60.0	1.27	9067	44369.47	68.84	739.49	-
2530.0	55.5	70.0	1.45	10321	45007.72	63.83	642.97	-
2540.0	57.5	80.0	1.63	11531	45623.77	61.60	570.30	-
2550.0	59.0	90.0	1.80	12711	46224.28	60.05	513.60	-
2560.0	56.6	100.0	1.97	13942	46850.50	62.62	468.50	-
2570.0	53.0	110.0	2.16	15255	47518.80	66.83	431.99	-
2580.0	65.0	120.0	2.32	15945	48063.40	54.46	400.53	-
2590.0	57.4	130.0	2.49	16363	48680.57	61.72	374.47	-
2600.0	47.0	140.0	2.70	16874	49434.19	75.36	353.10	-
2610.0	57.0	150.0	2.88	17295	50055.59	62.14	333.70	-
2620.0	71.0	160.0	3.02	18284	50554.47	49.89	315.97	-
2630.0	70.0	170.0	3.16	19287	51060.47	50.60	300.36	-
2640.0	64.0	180.0	3.32	20383	51613.90	55.34	286.74	-
2650.0	57.0	190.0	3.49	21615	52235.31	62.14	274.92	-
2660.0	48.0	200.0	3.70	23077	52973.22	73.79	264.87	-
2670.0	48.0	210.0	3.91	24540	53711.14	73.79	255.77	-
2680.0	52.0	220.0	4.10	25890	54392.29	68.12	247.24	-
2690.0	48.0	230.0	4.31	27352	55130.21	73.79	239.70	-
2700.0	57.0	240.0	4.49	28584	55751.61	62.14	232.30	-
2710.0	44.0	250.0	4.71	30180	56556.61	80.50	226.23	-
2747.0	49.4	287.0	5.46	35461	59211.03	71.74	206.31	-

COMPUTER DATA LISTING : LIST C

INTERVAL 10 m average

DEPTH. Well depth, in metres

FLOW RATE. Mud flow into the well,
in gallons per minute

PSP Pump pressure, in pounds
per square inch

PBIT Bit pressure drop,
in pounds per square inch

% PSP Percentage of surface pressure
dropped at the bit

HHP Bit hydraulic horsepower

HHP/SQ IN Bit hydraulic horsepower per
square inch of bit diameter

IMPACT FORCE Bit impact force, in foot
pound per second squared

JET VELOCITY Mud velocity through the bit
nozzles, in metres per second

BIT NUMBER	1	IADC CODE	111	INTERVAL	65.0- 204.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	20 20 20
COST	3000.00	TRIP TIME	1.7	BIT RUN	139.0
TOTAL HOURS	5.80	TOTAL TURNS	33634	CONDITION	T2 E2 G0.000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
70.0	665	350.0	413.1	118.0	160	0.30	686	70
80.0	665	350.0	413.1	118.0	160	0.30	686	70
90.0	665	350.0	413.1	118.0	160	0.30	686	70
100.0	1085	1015.0	1099.8	108.4	696	1.31	1826	115
110.0	1110	1120.0	1151.1	102.8	745	1.40	1911	118
120.0	1090	1070.0	1110.0	103.7	706	1.33	1843	115
130.0	1080	1060.0	1089.7	102.8	686	1.29	1809	114
140.0	1105	1120.0	1140.7	101.9	735	1.38	1894	117
150.0	1090	1080.0	1110.0	102.8	706	1.33	1843	115
160.0	1095	1120.0	1120.2	100.0	715	1.35	1860	116
170.0	1100	1120.0	1130.4	100.9	725	1.37	1877	117
180.0	1100	1120.0	1130.4	100.9	725	1.37	1877	117
190.0	1090	1130.0	1110.0	98.2	706	1.33	1843	115
200.0	1090	1150.0	1110.0	96.5	706	1.33	1843	115
204.0	1090	1140.0	1110.0	97.4	706	1.33	1843	115

BIT NUMBER	2	IADC CODE	111	INTERVAL	204.0- 799.0
HTC 3AJ		SIZE	17.500	NOZZLES	20 20 20
COST	5000.00	TRIP TIME	3.9	BIT RUN	595.0
TOTAL HOURS	13.87	TOTAL TURNS	116516	CONDITION	T3 B3 G0.000

DEPTH	FLOW RATE	PSP	PRIT	%PSP	HHP	HHP/sqin	IMPACT FORCE	JET VELOCITY
210.0	1080	2500.0	1102.4	44.1	694	2.89	1830	114
220.0	1080	2500.0	1102.4	44.1	694	2.89	1830	114
230.0	1080	2500.0	1102.4	44.1	694	2.89	1830	114
240.0	1080	2500.0	1102.4	44.1	694	2.89	1830	114
250.0	1110	2170.0	1164.5	53.7	754	3.13	1933	118
260.0	1180	2470.0	1316.0	53.3	906	3.77	2185	125
270.0	1175	2470.0	1304.8	52.8	894	3.72	2166	124
280.0	1140	2280.0	1228.3	53.9	817	3.40	2039	121
290.0	1140	2280.0	1228.3	53.9	817	3.40	2039	121
300.0	1175	2480.0	1304.8	52.6	894	3.72	2166	124
310.0	1165	2480.0	1282.7	51.7	872	3.62	2129	123
320.0	1165	2480.0	1282.7	51.7	872	3.62	2129	123
330.0	1155	2220.0	1260.8	56.8	849	3.53	2093	122
340.0	1075	2220.0	1092.2	49.2	685	2.85	1813	114
350.0	1145	2350.0	1239.1	52.7	827	3.44	2057	121
360.0	1145	2350.0	1239.1	52.7	827	3.44	2057	121
370.0	1155	2490.0	1260.8	50.6	849	3.53	2093	122
380.0	1155	2490.0	1260.8	50.6	849	3.53	2093	122
390.0	1140	2470.0	1228.3	49.7	817	3.40	2039	121
400.0	1140	2470.0	1228.3	49.7	817	3.40	2039	121
410.0	1140	2470.0	1228.3	49.7	817	3.40	2039	121
420.0	1140	2470.0	1228.3	49.7	817	3.40	2039	121
430.0	1140	2470.0	1228.3	49.7	817	3.40	2039	121
440.0	1150	2500.0	1249.9	50.0	838	3.49	2075	122
450.0	1150	2500.0	1249.9	50.0	838	3.49	2075	122
460.0	1150	2500.0	1249.9	50.0	838	3.49	2075	122
470.0	1170	2620.0	1293.8	49.4	883	3.67	2148	124
480.0	1170	2620.0	1293.8	49.4	883	3.67	2148	124
490.0	1170	2620.0	1293.8	49.4	883	3.67	2148	124
500.0	1200	2950.0	1361.0	46.1	952	3.96	2259	127
510.0	1200	2950.0	1361.0	46.1	952	3.96	2259	127
520.0	1200	2950.0	1361.0	46.1	952	3.96	2259	127
530.0	1200	2950.0	1361.0	46.1	952	3.96	2259	127
540.0	1200	2950.0	1361.0	46.1	952	3.96	2259	127
550.0	1200	2950.0	1361.0	46.1	952	3.96	2259	127
560.0	1050	2330.0	1042.0	44.7	638	2.65	1730	111
570.0	1050	2330.0	1042.0	44.7	638	2.65	1730	111
580.0	1050	2330.0	1042.0	44.7	638	2.65	1730	111
590.0	1050	2330.0	1042.0	44.7	638	2.65	1730	111
600.0	1050	2330.0	1042.0	44.7	638	2.65	1730	111
610.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
620.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
630.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119

DEPTH	FLOW RATE	PSP	PBIT	XPSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
640.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
650.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
660.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
670.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
680.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
690.0	1120	2450.0	1185.5	48.4	774	3.22	1968	119
700.0	1110	2850.0	1164.5	40.9	754	3.13	1933	118
710.0	1110	2850.0	1164.5	40.9	754	3.13	1933	118
720.0	1110	2850.0	1164.5	40.9	754	3.13	1933	118
730.0	1160	2730.0	1271.7	46.6	860	3.58	2111	123
740.0	1160	2730.0	1271.7	46.6	860	3.58	2111	123
750.0	1160	2730.0	1271.7	46.6	860	3.58	2111	123
760.0	1160	2730.0	1271.7	46.6	860	3.58	2111	123
770.0	1160	2730.0	1271.7	46.6	860	3.58	2111	123
780.0	1160	2730.0	1271.7	46.6	860	3.58	2111	123
790.0	1160	2290.0	1271.7	55.5	860	3.58	2111	123
799.0	1075	2360.0	1092.2	46.3	685	2.85	1813	114

BIT NUMBER	3	IADC CODE	114	INTERVAL	799.0- 1293.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	5.7	BIT RUN	494.0
TOTAL HOURS	21.11	TOTAL TURNS	162445	-CONDITION	T3 B5 G0:000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
800.0	500	800.0	596.7	74.6	174	1.48	634	83
810.0	460	2740.0	505.1	18.4	135	1.15	537	76
820.0	1005	2700.0	2410.9	89.3	1413	11.99	2562	166
830.0	1020	2790.0	2483.4	89.0	1477	12.53	2639	169
840.0	880	2640.0	1827.9	69.2	938	7.96	1942	146
850.0	980	2690.0	2267.0	84.3	1296	10.99	2409	162
860.0	895	2710.0	1890.8	69.8	987	8.37	2009	148
870.0	780	1380.0	1436.1	104.1	653	5.54	1526	129
880.0	875	2700.0	1807.2	66.9	922	7.82	1920	145
890.0	885	2730.0	1848.7	67.7	954	8.10	1964	146
900.0	880	2730.0	1827.9	67.0	938	7.96	1942	146
910.0	840	2730.0	1665.5	61.0	816	6.92	1770	139
920.0	870	2740.0	1786.6	65.2	906	7.69	1898	144
930.0	870	2750.0	1786.6	65.0	906	7.69	1898	144
940.0	850	2730.0	1705.4	62.5	845	7.17	1812	141
950.0	580	1200.0	794.0	66.2	269	2.28	844	96
960.0	880	2750.0	1827.9	66.5	938	7.96	1942	146
970.0	850	2720.0	1705.4	62.7	845	7.17	1812	141
980.0	890	2930.0	1869.7	63.8	970	8.23	1987	147
990.0	880	2830.0	1827.9	64.6	938	7.96	1942	146
1000.0	880	2840.0	1827.9	64.4	938	7.96	1942	146
1010.0	900	2950.0	1911.9	64.8	1004	8.51	2031	149
1020.0	900	2950.0	1911.9	64.8	1004	8.51	2031	149
1030.0	900	2920.0	1911.9	65.5	1004	8.51	2031	149
1040.0	900	2920.0	1911.9	65.5	1004	8.51	2031	149
1050.0	900	2920.0	1911.9	65.5	1004	8.51	2031	149
1060.0	900	2950.0	1911.9	64.8	1004	8.51	2031	149
1070.0	900	2920.0	1911.9	65.5	1004	8.51	2031	149
1080.0	900	2900.0	1911.9	65.9	1004	8.51	2031	149
1090.0	880	2770.0	1827.9	66.0	938	7.96	1942	146
1100.0	880	2920.0	1827.9	62.6	938	7.96	1942	146
1110.0	880	2930.0	1827.9	62.4	938	7.96	1942	146
1120.0	880	2900.0	1827.9	63.0	938	7.96	1942	146
1130.0	880	2880.0	1827.9	63.5	938	7.96	1942	146
1140.0	880	2880.0	1827.9	63.5	938	7.96	1942	146
1150.0	905	2880.0	1933.3	67.1	1020	8.66	2054	150
1160.0	905	2880.0	1933.3	67.1	1020	8.66	2054	150
1170.0	910	2810.0	1954.7	69.6	1037	8.80	2077	151
1180.0	910	2810.0	1954.7	69.6	1037	8.80	2077	151
1190.0	870	2820.0	1786.6	63.4	906	7.69	1898	144
1200.0	870	2820.0	1786.6	63.4	906	7.69	1898	144
1210.0	870	2850.0	1786.6	62.7	906	7.69	1898	144
1220.0	600	1450.0	849.8	58.6	297	2.52	903	99

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1230.0	600	1440.0	849.8	59.0	297	2.52	903	99
1240.0	1140	2840.0	3067.6	108.0	2039	17.30	3259	189
1250.0	600	1470.0	849.8	57.8	297	2.52	903	99
1260.0	600	1480.0	849.8	57.4	297	2.52	903	99
1270.0	600	1460.0	849.8	58.2	297	2.52	903	99
1280.0	600	1480.0	859.3	58.1	301	2.55	913	99
1290.0	600	1490.0	964.3	64.7	337	2.86	1025	99
1293.0	600	1410.0	964.3	68.4	337	2.86	1025	99

BIT NUMBER	4	IADC CODE	114	INTERVAL	1293.0- 1391.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	6.1	BIT RUN	98.0
TOTAL HOURS	4.14	TOTAL TURNS	33204	CONDITION	T1 E3 G0.000

DEPTH	FLOW RATE	PSP	PRIT	ZPSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1300.0	875	2040.0	2050.9	100.5	1047	8.88	2179	145
1310.0	815	2770.0	1779.3	64.2	846	7.18	1890	135
1320.0	850	2480.0	1935.4	78.0	959	8.14	2056	141
1330.0	860	2500.0	1981.2	79.2	994	8.43	2105	142
1340.0	860	2850.0	1981.2	69.5	994	8.43	2105	142
1350.0	850	2970.0	1935.4	65.2	959	8.14	2056	141
1360.0	845	2840.0	1912.7	67.3	943	8.00	2032	140
1370.0	865	2530.0	2004.3	79.2	1011	8.58	2129	143
1380.0	825	2820.0	1823.2	64.7	877	7.44	1937	137
1390.0	800	2800.0	1680.4	60.0	784	6.65	1785	132
1391.0	800	2800.0	1680.4	60.0	784	6.65	1785	132

BIT NUMBER	5	IADC CODE	4	INTERVAL	1392.0- 1404.4
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.1	BIT RUN	12.4
TOTAL HOURS	2.02	TOTAL TURNS	11091	CONDITION	T0 B0 G0.300

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1400.0	225	690.0	320.4	46.4	42	0.75	225	56
1404.4	225	550.0	320.4	58.3	42	0.75	225	56

BIT NUMBER	5	IADC CODE	4	INTERVAL	1405.0- 1418.2
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.2	BIT RUN	13.2
TOTAL HOURS	5.21	TOTAL TURNS	28361	CONDITION	T0 B0 G0.800

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1410.0	230	520.0	325.2	62.5	44	0.77	228	58
1418.2	240	380.0	354.0	93.2	50	0.88	248	60

BIT NUMBER	6	IADC CODE	114	INTERVAL	1418.0- 1495.0
HTC X3A		SIZE	12.250	NOZZLES	14 14 15
COST	1400.00	TRIP TIME	6.4	BIT RUN	77.0
TOTAL HOURS	4.60	TOTAL TURNS	36973	CONDITION	T7 B6 G0.750

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1420.0	740	2840.0	2272.7	80.0	981	8.32	1940	152
1430.0	740	2890.0	2272.7	78.6	981	8.32	1940	152
1440.0	740	2880.0	2272.7	78.9	981	8.32	1940	152
1450.0	740	2840.0	2272.7	80.0	981	8.32	1940	152
1460.0	740	2500.0	2272.7	90.9	981	8.32	1940	152
1470.0	740	2450.0	2272.7	92.8	981	8.32	1940	152
1480.0	740	2390.0	2272.7	95.1	981	8.32	1940	152
1490.0	740	2790.0	2272.7	81.5	981	8.32	1940	152
1495.0	740	2790.0	2272.7	81.5	981	8.32	1940	152

BIT NUMBER	7	IADC CODE	217	INTERVAL	1495.0- 1585.0
HTC JD4		SIZE	12.250	NOZZLES	15 15 14
COST	1800.00	TRIP TIME	6.8	BIT RUN	90.0
TOTAL HOURS	7.22	TOTAL TURNS	49693	CONDITION	T7 B5 G0.313

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1500.0	770	2870.0	2244.7	78.2	1008	8.55	2006	152
1510.0	770	2830.0	2244.7	79.3	1008	8.55	2006	152
1520.0	770	2830.0	2244.7	79.3	1008	8.55	2006	152
1530.0	770	2830.0	2244.7	79.3	1008	8.55	2006	152
1540.0	615	1920.0	1432.0	74.6	514	4.36	1280	121
1550.0	785	2860.0	2333.0	81.6	1068	9.06	2085	154
1560.0	785	2780.0	2333.0	83.9	1068	9.06	2085	154
1570.0	755	2660.0	2158.1	81.1	950	8.06	1929	149
1580.0	755	2630.0	2158.1	82.1	950	8.06	1929	149
1585.0	800	2820.0	2423.0	85.9	1130	9.59	2165	157

BIT NUMBER	9	IADC CODE	517	INTERVAL	1585.0- 1986.0
HTC J22		SIZE	12.250	NOZZLES	15 15 14
COST	4200.00	TRIP TIME	8.2	BIT RUN	401.0
TOTAL HOURS	40.51	TOTAL TURNS	244481	CONDITION	T5 B4 G0.188

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1590.0	710	2810.0	1908.5	67.9	790	6.71	1706	140
1600.0	780	2940.0	2303.4	78.3	1048	8.89	2059	153
1610.0	730	2960.0	2017.6	68.2	859	7.29	1803	144
1620.0	720	2860.0	1962.7	68.6	824	6.99	1754	142
1630.0	750	2950.0	2108.5	71.5	922	7.83	1884	148
1640.0	750	2950.0	2108.5	71.5	922	7.83	1884	148
1650.0	740	2880.0	2052.7	71.3	886	7.52	1834	146
1660.0	740	2880.0	2052.7	71.3	886	7.52	1834	146
1670.0	740	2970.0	2052.7	69.1	886	7.52	1834	146
1680.0	720	2810.0	1943.2	69.2	816	6.92	1737	142
1690.0	720	2760.0	1943.2	70.4	816	6.92	1737	142
1700.0	740	2770.0	2052.7	74.1	886	7.52	1834	146
1710.0	705	2800.0	1863.1	66.5	766	6.50	1665	139
1720.0	810	2880.0	2459.4	85.4	1162	9.86	2198	159
1730.0	760	2860.0	2165.1	75.7	960	8.14	1935	150
1740.0	765	2890.0	2193.7	75.9	979	8.30	1961	151
1750.0	760	2800.0	2165.1	77.3	960	8.14	1935	150
1760.0	745	2750.0	2080.5	75.7	904	7.67	1859	147
1770.0	720	2810.0	1943.2	69.2	816	6.92	1737	142
1780.0	740	2830.0	2052.7	72.5	886	7.52	1834	146
1790.0	785	2820.0	2309.9	81.9	1058	8.97	2064	154
1800.0	750	2820.0	2108.5	74.8	922	7.83	1884	148
1810.0	610	2000.0	1394.8	69.7	496	4.21	1247	120
1820.0	730	2970.0	1997.6	67.3	850	7.22	1785	144
1830.0	710	2980.0	1889.6	63.4	782	6.64	1689	140
1840.0	710	2860.0	1889.6	66.1	782	6.64	1689	140
1850.0	710	2880.0	1889.6	65.6	782	6.64	1689	140
1860.0	720	2830.0	1943.2	68.7	816	6.92	1737	142
1870.0	750	2830.0	2108.5	74.5	922	7.83	1884	148
1880.0	720	2950.0	1943.2	65.9	816	6.92	1737	142
1890.0	720	2930.0	1943.2	66.3	816	6.92	1737	142
1900.0	720	2920.0	1943.2	66.5	816	6.92	1737	142
1910.0	720	2920.0	1943.2	66.5	816	6.92	1737	142
1920.0	720	2920.0	1943.2	66.5	816	6.92	1737	142
1930.0	695	2785.0	1810.6	65.0	734	6.23	1618	137
1940.0	690	2790.0	1802.5	64.6	725	6.15	1611	136
1950.0	690	2790.0	1802.5	64.6	725	6.15	1611	136
1960.0	705	2820.0	1881.7	66.7	774	6.56	1682	139
1970.0	730	2880.0	2017.6	70.1	859	7.29	1803	144
1980.0	720	2790.0	1962.7	70.3	824	6.99	1754	142
1986.0	750	2730.0	2129.6	78.0	931	7.90	1903	148

BIT NUMBER	10	IADC CODE	517	INTERVAL	1986.0- 2161.0
HTC J22		SIZE	12.250	NOZZLES	14 14 15
COST	4200.00	TRIP TIME	8.9	BIT RUN	175.0
TOTAL HOURS	29.75	TOTAL TURNS	175777	CONDITION	T8 B5 G0.125

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1990.0	630	2800.0	1647.2	58.8	605	5.14	1406	130
2000.0	635	2800.0	1673.5	59.8	620	5.26	1428	131
2010.0	660	2930.0	1807.9	61.7	696	5.90	1543	136
2020.0	650	2930.0	1753.5	59.8	665	5.64	1497	134
2030.0	650	2980.0	1753.5	58.8	665	5.64	1497	134
2040.0	650	2920.0	1753.5	60.1	665	5.64	1497	134
2050.0	650	2920.0	1753.5	60.1	665	5.64	1497	134
2060.0	635	2800.0	1656.9	59.2	614	5.21	1414	131
2070.0	550	2130.0	1255.5	58.9	403	3.42	1072	113
2080.0	650	2980.0	1753.5	58.8	665	5.64	1497	134
2090.0	650	2980.0	1753.5	58.8	665	5.64	1497	134
2100.0	650	2980.0	1753.5	58.8	665	5.64	1497	134
2110.0	650	2980.0	1753.5	58.8	665	5.64	1497	134
2120.0	650	2700.0	1753.5	64.9	665	5.64	1497	134
2130.0	650	2750.0	1753.5	63.8	665	5.64	1497	134
2140.0	650	2750.0	1753.5	63.8	665	5.64	1497	134
2150.0	650	2750.0	1736.1	63.1	658	5.58	1482	134
2160.0	500	1780.0	1027.3	57.7	300	2.54	877	103
2161.0	500	1780.0	1027.3	57.7	300	2.54	877	103

BIT NUMBER	11	IADC CODE	527	INTERVAL	2161.0- 2324.5
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	9.5	BIT RUN	163.5
TOTAL HOURS	35.81	TOTAL TURNS	204879	CONDITION	T4 B6-G0.188

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2162.0	635	2750.0	1842.6	67.0	682	5.79	1499	137
2163.0	635	2750.0	1842.6	67.0	682	5.79	1499	137
2164.0	635	2750.0	1842.6	67.0	682	5.79	1499	137
2165.0	635	2750.0	1842.6	67.0	682	5.79	1499	137
2166.0	635	2750.0	1842.6	67.0	682	5.79	1499	137
2167.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2168.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2169.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2170.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2171.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2172.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2173.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2174.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2175.0	640	2780.0	1871.8	67.3	699	5.93	1523	138
2176.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2177.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2178.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2179.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2180.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2181.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2182.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2183.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2184.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2185.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2186.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2187.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2188.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2189.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2190.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2191.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2192.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2193.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2194.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2195.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2196.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2197.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2198.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2199.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2200.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2201.0	650	2800.0	1930.7	69.0	732	6.21	1571	141
2202.0	650	2800.0	1911.6	68.3	725	6.15	1555	141
2203.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2204.0	650	2620.0	1911.6	73.0	725	6.15	1555	141

DEPTH	FLOW RATE	PSP	PBIT	XPSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2205.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2206.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2207.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2208.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2209.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2210.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2211.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2212.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2213.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2214.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2215.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2216.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2217.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2218.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2219.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2220.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2221.0	650	2620.0	1911.6	73.0	725	6.15	1555	141
2222.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2223.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2224.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2225.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2226.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2227.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2228.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2229.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2230.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2231.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2232.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2233.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2234.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2235.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2236.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2237.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2238.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2239.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2240.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2241.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2242.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2243.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2244.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2245.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2246.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2247.0	650	2870.0	1911.6	66.6	725	6.15	1555	141
2248.0	650	2870.0	1930.7	67.3	732	6.21	1571	141
2249.0	650	2870.0	1930.7	67.3	732	6.21	1571	141
2250.0	650	2870.0	1930.7	67.3	732	6.21	1571	141
2251.0	650	2870.0	1930.7	67.3	732	6.21	1571	141
2252.0	650	2870.0	1949.8	67.9	739	6.27	1586	141
2253.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2254.0	650	2850.0	1949.8	68.4	739	6.27	1586	141

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/sqin	IMPACT FORCE	JET VELOCITY
2255.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2256.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2257.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2258.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2259.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2260.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2261.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2262.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2263.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2264.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2265.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2266.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2267.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2268.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2269.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2270.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2271.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2272.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2273.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2274.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2275.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2276.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2277.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2278.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2279.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2280.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2281.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2282.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2283.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2284.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2285.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2286.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2287.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2288.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2289.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2290.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2291.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2292.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2293.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2294.0	650	2850.0	1949.8	68.4	739	6.27	1586	141
2295.0	560	2180.0	1433.1	65.7	468	3.97	1166	121
2296.0	560	2180.0	1433.1	65.7	468	3.97	1166	121
2297.0	560	2180.0	1433.1	65.7	468	3.97	1166	121
2298.0	560	2180.0	1433.1	65.7	468	3.97	1166	121
2299.0	460	1620.0	967.0	59.7	259	2.20	787	99
2300.0	640	2950.0	1871.8	63.4	699	5.93	1523	138
2301.0	500	1770.0	1142.4	64.5	333	2.83	929	108
2302.0	500	1770.0	1142.4	64.5	333	2.83	929	108
2303.0	500	1770.0	1142.4	64.5	333	2.83	929	108
2304.0	500	1770.0	1142.4	64.5	333	2.83	929	108

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2305.0	500	1770.0	1119.8	63.3	327	2.77	911	108
2306.0	645	2980.0	1882.3	63.2	708	6.01	1531	139
2307.0	645	2980.0	1882.3	63.2	708	6.01	1531	139
2308.0	645	2980.0	1901.1	63.8	715	6.07	1546	139
2309.0	645	2980.0	1901.1	63.8	715	6.07	1546	139
2310.0	645	2980.0	1901.1	63.8	715	6.07	1546	139
2311.0	645	2980.0	1901.1	63.8	715	6.07	1546	139
2312.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2313.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2314.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2315.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2316.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2317.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2318.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2319.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2320.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2321.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2322.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2323.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2324.0	645	2950.0	1901.1	64.4	715	6.07	1546	139
2324.5	645	2950.0	1901.1	64.4	715	6.07	1546	139

BIT NUMBER	12	IADC CODE	527	INTERVAL	2324.5- 2521.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.2	BIT RUN	196.5
TOTAL HOURS	45.29	TOTAL TURNS	252275	CONDITION	T6 B6 G0.250

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2330.0	650	2860.0	1930.7	67.5	732	6.21	1571	141
2340.0	650	2860.0	1930.7	67.5	732	6.21	1571	141
2350.0	650	2890.0	1930.7	66.8	732	6.21	1571	141
2360.0	480	2010.0	1052.9	52.4	295	2.50	856	104
2370.0	660	2830.0	1990.6	70.3	766	6.50	1619	143
2380.0	660	2830.0	1990.6	70.3	766	6.50	1619	143
2390.0	650	2790.0	1930.7	69.2	732	6.21	1571	141
2400.0	515	1850.0	1212.0	65.5	364	3.09	986	111
2410.0	640	2750.0	1871.8	68.1	699	5.93	1523	138
2420.0	650	2850.0	1930.7	67.7	732	6.21	1571	141
2430.0	655	2920.0	1960.5	67.1	749	6.35	1595	142
2440.0	660	2880.0	1990.6	69.1	766	6.50	1619	143
2450.0	645	2830.0	1874.8	66.2	705	5.98	1525	139
2460.0	660	3030.0	1951.2	64.4	751	6.37	1587	143
2470.0	660	3030.0	1970.9	65.0	759	6.44	1603	143
2480.0	615	3030.0	1711.3	56.5	614	5.21	1392	133
2490.0	640	3030.0	1853.2	61.2	692	5.87	1508	138
2500.0	635	3050.0	1824.4	59.8	676	5.73	1484	137
2510.0	655	2920.0	1941.1	66.5	741	6.29	1579	142
2520.0	655	2950.0	1941.1	65.8	741	6.29	1579	142
2521.0	655	2950.0	1921.7	65.1	734	6.23	1563	142

BIT NUMBER	13	IADC CODE	316	INTERVAL	2521.0- 2535.0
HTC J7		SIZE	12.250	NOZZLES	14 14 14
COST	1800.00	TRIP TIME	10.2	BIT RUN	14.0
TOTAL HOURS	6.20	TOTAL TURNS	20696	CONDITION	T3 B2 G0.000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2530.0	615	2950.0	1721.5	58.4	617	5.24	1400	133
2535.0	600	2870.0	1645.1	57.3	576	4.88	1338	130

BIT NUMBER	14	IADC CODE	527	INTERVAL	2535.0- 2600.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.4	BIT RUN	65.0
TOTAL HOURS	8.77	TOTAL TURNS	53719	CONDITION	T5 B3 G0.125

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2540.0	520	2000.0	1223.4	61.2	371	3.15	995	112
2550.0	615	2860.0	1711.3	59.8	614	5.21	1392	133
2560.0	640	2800.0	1853.2	66.2	692	5.87	1508	138
2570.0	640	2910.0	1834.7	63.0	685	5.81	1492	138
2580.0	640	2820.0	1834.7	65.1	685	5.81	1492	138
2590.0	640	2820.0	1871.8	66.4	699	5.93	1523	138
2600.0	640	2420.0	1871.8	77.3	699	5.93	1523	138

BIT NUMBER	15	IADC CODE	527	INTERVAL	2600.0- 2663.3
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	10.7	BIT RUN	63.3
TOTAL HOURS	13.94	TOTAL TURNS	76380	CONDITION	T3 B3 G0.125

DEPTH	FLOW RATE	PSP	PRIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2610.0	630	2750.0	1647.2	59.9	605	5.14	1406	130
2620.0	635	2760.0	1656.9	60.0	614	5.21	1414	131
2630.0	520	2020.0	1111.1	55.0	337	2.86	948	107
2640.0	635	2780.0	1656.9	59.6	614	5.21	1414	131
2650.0	635	2780.0	1656.9	59.6	614	5.21	1414	131
2660.0	635	2780.0	1656.9	59.6	614	5.21	1414	131
2663.3	640	2780.0	1683.1	60.5	628	5.33	1437	132

BIT NUMBER	16	IADC CODE	4	INTERVAL	2663.3- 2669.0
CHRISTENSEN C20		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	10.7	BIT RUN	5.7
TOTAL HOURS	4.08	TOTAL TURNS	18692	CONDITION	T0 B0 G0.200

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2669.0	280	1460.0	477.1	32.7	78	1.38	335	70

BIT NUMBER	17	IADC CODE	527	INTERVAL	2669.0- 2815.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.2	BIT RUN	146.0
TOTAL HOURS	33.41	TOTAL TURNS	234387	CONDITION	T6 B5 G0.187

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2670.0	640	2880.0	1716.8	59.6	641	5.44	1465	132
2680.0	640	2950.0	1699.9	57.6	634	5.38	1451	132
2690.0	640	2950.0	1699.9	57.6	634	5.38	1451	132
2700.0	640	2950.0	1699.9	57.6	634	5.38	1451	132
2710.0	640	2910.0	1699.9	58.4	634	5.38	1451	132
2720.0	640	2940.0	1699.9	57.8	634	5.38	1451	132
2730.0	640	2960.0	1699.9	57.4	634	5.38	1451	132
2740.0	640	2930.0	1699.9	58.0	634	5.38	1451	132
2750.0	640	2930.0	1699.9	58.0	634	5.38	1451	132
2760.0	640	2920.0	1699.9	58.2	634	5.38	1451	132
2770.0	630	2880.0	1647.2	57.2	605	5.14	1406	130
2780.0	630	2870.0	1647.2	57.4	605	5.14	1406	130
2790.0	630	2980.0	1647.2	55.3	605	5.14	1406	130
2800.0	640	2890.0	1699.9	58.8	634	5.38	1451	132
2810.0	640	2940.0	1699.9	57.8	634	5.38	1451	132
2815.0	630	2860.0	1647.2	57.6	605	5.14	1406	130

BIT NUMBER	18	IADC CODE	527	INTERVAL	2815.0- 2955.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.7	BIT RUN	140.0
TOTAL HOURS	36.54	TOTAL TURNS	218379	CONDITION	T6 B6 G0.250

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2820.0	620	2850.0	1595.4	56.0	577	4.89	1362	128
2830.0	615	2750.0	1569.7	57.1	563	4.78	1340	127
2840.0	600	2800.0	1494.1	53.4	523	4.44	1275	124
2850.0	610	2880.0	1544.3	53.6	549	4.66	1318	126
2860.0	610	2960.0	1529.0	51.7	544	4.62	1305	126
2870.0	610	2720.0	1529.0	56.2	544	4.62	1305	126
2880.0	600	2570.0	1479.3	57.6	518	4.39	1263	124
2890.0	575	2550.0	1358.6	53.3	456	3.87	1160	118
2900.0	580	2460.0	1382.3	56.2	468	3.97	1180	119
2910.0	610	2430.0	1529.0	62.9	544	4.62	1305	126
2920.0	570	2560.0	1335.1	52.2	444	3.77	1140	117
2930.0	570	2640.0	1335.1	50.6	444	3.77	1140	117
2940.0	570	2640.0	1335.1	50.6	444	3.77	1140	117
2950.0	570	2590.0	1335.1	51.5	444	3.77	1140	117
2955.0	570	2590.0	1335.1	51.5	444	3.77	1140	117

BIT NUMBER	19	IADC CODE	131	INTERVAL	1998.0- 2460.0
HTC OSC 1G		SIZE	8.500	NOZZLES	28 28 28
COST	900.00	TRIP TIME	9.9	BIT RUN	462.0
TOTAL HOURS	14.37	TOTAL TURNS	104481	CONDITION	T3 B5 G0.000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/sqin	IMPACT FORCE	JET VELOCITY
2000.0	515	830.0	76.5	9.2	23	0.40	249	28
2010.0	515	830.0	76.5	9.2	23	0.40	249	28
2020.0	490	700.0	69.3	9.9	20	0.35	225	26
2030.0	490	700.0	69.3	9.9	20	0.35	225	26
2040.0	490	700.0	69.3	9.9	20	0.35	225	26
2050.0	525	850.0	79.5	9.4	24	0.43	259	28
2060.0	525	850.0	79.5	9.4	24	0.43	259	28
2070.0	525	850.0	79.5	9.4	24	0.43	259	28
2080.0	525	850.0	79.5	9.4	24	0.43	259	28
2090.0	525	850.0	79.5	9.4	24	0.43	259	28
2100.0	525	850.0	79.5	9.4	24	0.43	259	28
2110.0	525	850.0	79.5	9.4	24	0.43	259	28
2120.0	665	1400.0	125.8	9.0	49	0.86	409	36
2130.0	665	1400.0	125.8	9.0	49	0.86	409	36
2140.0	665	1400.0	125.8	9.0	49	0.86	409	36
2150.0	665	1400.0	125.8	9.0	49	0.86	409	36
2160.0	665	1400.0	125.8	9.0	49	0.86	409	36
2170.0	665	1400.0	125.8	9.0	49	0.86	409	36
2180.0	665	1400.0	125.8	9.0	49	0.86	409	36
2190.0	665	1400.0	125.8	9.0	49	0.86	409	36
2200.0	665	1400.0	125.8	9.0	49	0.86	409	36
2210.0	665	1400.0	125.8	9.0	49	0.86	409	36
2220.0	560	1190.0	89.2	7.5	29	0.51	290	30
2230.0	560	1190.0	89.2	7.5	29	0.51	290	30
2240.0	560	1190.0	89.2	7.5	29	0.51	290	30
2250.0	560	1190.0	89.2	7.5	29	0.51	290	30
2260.0	615	1330.0	107.6	8.1	39	0.68	350	33
2270.0	615	1330.0	107.6	8.1	39	0.68	350	33
2280.0	615	1330.0	107.6	8.1	39	0.68	350	33
2290.0	615	1330.0	107.6	8.1	39	0.68	350	33
2300.0	615	1330.0	107.6	8.1	39	0.68	350	33
2310.0	640	1470.0	116.5	7.9	43	0.77	379	35
2320.0	640	1470.0	116.5	7.9	43	0.77	379	35
2330.0	640	1470.0	116.5	7.9	43	0.77	379	35
2340.0	640	1470.0	116.5	7.9	43	0.77	379	35
2350.0	640	1470.0	116.5	7.9	43	0.77	379	35
2360.0	640	1470.0	116.5	7.9	43	0.77	379	35
2370.0	640	1470.0	116.5	7.9	43	0.77	379	35
2380.0	640	1470.0	116.5	7.9	43	0.77	379	35
2390.0	640	1470.0	116.5	7.9	43	0.77	379	35
2400.0	640	1470.0	116.5	7.9	43	0.77	379	35
2410.0	640	1470.0	116.5	7.9	43	0.77	379	35
2420.0	600	1440.0	102.4	7.1	36	0.63	333	32

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2430.0	600	1440.0	102.4	7.1	36	0.63	333	32
2440.0	630	1440.0	112.9	7.8	41	0.73	367	34
2450.0	630	1440.0	112.9	7.8	41	0.73	367	34
2460.0	630	1290.0	112.9	8.8	41	0.73	367	34

BIT NUMBER	20	IADC CODE	116	INTERVAL	2460.0- 2747.0
HTC J2		SIZE	8.500	NOZZLES	16 16 16
COST	900.00	TRIP TIME	11.0	BIT RUN	287.0
TOTAL HOURS	5.46	TOTAL TURNS	35461	CONDITION	T2 B2 G0.000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2470.0	490	1500.0	643.2	42.9	184	3.24	683	81
2480.0	490	1500.0	643.2	42.9	184	3.24	683	81
2490.0	490	1500.0	643.2	42.9	184	3.24	683	81
2500.0	490	1500.0	643.2	42.9	184	3.24	683	81
2510.0	490	1500.0	643.2	42.9	184	3.24	683	81
2520.0	490	1500.0	643.2	42.9	184	3.24	683	81
2530.0	490	1500.0	643.2	42.9	184	3.24	683	81
2540.0	500	1510.0	669.7	44.3	195	3.44	712	83
2550.0	500	1510.0	669.7	44.3	195	3.44	712	83
2560.0	500	1510.0	669.7	44.3	195	3.44	712	83
2570.0	500	1510.0	669.7	44.3	195	3.44	712	83
2580.0	500	1510.0	669.7	44.3	195	3.44	712	83
2590.0	500	1510.0	669.7	44.3	195	3.44	712	83
2600.0	500	1510.0	669.7	44.3	195	3.44	712	83
2610.0	500	1510.0	669.7	44.3	195	3.44	712	83
2620.0	500	1510.0	669.7	44.3	195	3.44	712	83
2630.0	500	1510.0	669.7	44.3	195	3.44	712	83
2640.0	500	1510.0	669.7	44.3	195	3.44	712	83
2650.0	500	1510.0	669.7	44.3	195	3.44	712	83
2660.0	500	1510.0	669.7	44.3	195	3.44	712	83
2670.0	500	1510.0	669.7	44.3	195	3.44	712	83
2680.0	500	1510.0	669.7	44.3	195	3.44	712	83
2690.0	500	1510.0	669.7	44.3	195	3.44	712	83
2700.0	500	1510.0	669.7	44.3	195	3.44	712	83
2710.0	500	1510.0	669.7	44.3	195	3.44	712	83
2747.0	500	1690.0	669.7	39.6	195	3.44	712	83

COMPUTER DATA LISTING : LIST D

INTERVAL 10 m average

DEPTH Well depth, in metres

SPM1 Stroke rate per minute,
for pump No 1

SPM2 Stroke rate per minute,
for pump No 2

FLOW RATE Mud flow rate into the well,
in gallons per minute

ANNULAR VELOCITIES : (in metres per minute)

DC/OH - Between drill collars and the open hole

DC/CSG - Between drill collars and casing

HW/OH - Between heavyweight drill pipe and the open hole

HW/CSG - Between heavyweight drill pipe and casing

DP/OH - Between drill pipe and open hole

DP/CSG - Between drill pipe and casing

DP/RIS - Between drill pipe and riser

BIT NUMBER	1	IADC CODE	111	INTERVAL	65.0- 204.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	20 20 20
COST	3000.00	TRIP TIME	1.7	BIT RUN	139.0
TOTAL HOURS	5.80	TOTAL TURNS	33634	CONDITION	T2 B2 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
70.0	68	65	665	8		8				
80.0	68	65	665	8		8				
90.0	68	65	665	8		8		8		
100.0	105	112	1065	13		12		12		
110.0	108	114	1110	14		13		13		
120.0	106	112	1090	13		13		13		
130.0	106	110	1080	13		12		12		
140.0	106	115	1105	13		13		13		
150.0	106	112	1090	13		13		13		
160.0	107	112	1095	13		13		13		
170.0	106	114	1100	13		13		13		
180.0	106	114	1100	13		13		13		
190.0	106	112	1090	13		13		13		
200.0	106	112	1090	13		13		13		
204.0	106	112	1090	13		13		13		

BIT NUMBER	2	IADC CODE	111	INTERVAL	204.0- 799.0
HTC 3AJ		SIZE	17.500	NOZZLES	20 20 20
COST	5000.00	TRIP TIME	3.9	BIT RUN	595.0
TOTAL HOURS	13.87	TOTAL TURNS	116516	CONDITION	T3 B3 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
210.0	100	116	1080	33	27		24		24	19
220.0	100	116	1080	33	27		24		24	19
230.0	100	116	1080	33	27		24		24	19
240.0	100	116	1080	33	27		24		24	19
250.0	115	107	1110	34	27		24		24	20
260.0	124	112	1180	36	29		26		26	21
270.0	123	112	1175	36			26		26	21
280.0	120	108	1140	35		30	25		25	20
290.0	120	108	1140	35		30	25		25	20
300.0	123	112	1175	36		31		31	26	21
310.0	123	110	1165	36		31		31	26	21
320.0	123	110	1165	36		31		31	26	21
330.0	123	108	1155	36		31		31	25	21
340.0	108	107	1075	33		29		29	24	19
350.0	121	108	1145	35		30		30	25	21
360.0	121	108	1145	35		30		30	25	21
370.0	123	108	1155	36		31		31	25	21
380.0	123	108	1155	36		31		31	25	21
390.0	118	110	1140	35		30		30	25	20
400.0	118	110	1140	35		30		30	25	20
410.0	118	110	1140	35		30		30	25	20
420.0	118	110	1140	35		30		30	25	20
430.0	118	110	1140	35		30		30	25	20
440.0	120	110	1150	35		31		31	25	21
450.0	120	110	1150	35		31		31	25	21
460.0	120	110	1150	35		31		31	25	21
470.0	118	116	1170	36		31		31	26	21
480.0	118	116	1170	36		31		31	26	21
490.0	118	116	1170	36		31		31	26	21
500.0	130	110	1200	37		32		32	26	22
510.0	130	110	1200	37		32		32	26	22
520.0	130	110	1200	37		32		32	26	22
530.0	130	110	1200	37		32		32	26	22
540.0	130	110	1200	37		32		32	26	22
550.0	130	110	1200	37		32		32	26	22
560.0	100	110	1050	32		28		28	23	19
570.0	100	110	1050	32		28		28	23	19
580.0	100	110	1050	32		28		28	23	19
590.0	100	110	1050	32		28		28	23	19
600.0	100	110	1050	32		28		28	23	19
610.0	114	110	1120	35		30		30	25	20
620.0	114	110	1120	35		30		30	25	20
630.0	114	110	1120	35		30		30	25	20

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
640.0	114	110	1120	35		30		30	25	20
650.0	114	110	1120	35		30		30	25	20
660.0	114	110	1120	35		30		30	25	20
670.0	114	110	1120	35		30		30	25	20
680.0	114	110	1120	35		30		30	25	20
690.0	114	110	1120	35		30		30	25	20
700.0	112	110	1110	34		29		29	24	20
710.0	112	110	1110	34		29		29	24	20
720.0	112	110	1110	34		29		29	24	20
730.0	122	110	1160	36		31		31	25	21
740.0	122	110	1160	36		31		31	25	21
750.0	122	110	1160	36		31		31	25	21
760.0	122	110	1160	36		31		31	25	21
770.0	122	110	1160	36		31		31	25	21
780.0	122	110	1160	36		31		31	25	21
790.0	122	110	1160	36		31		31	25	21
799.0	100	115	1075	33		29		29	24	19

BIT NUMBER	3	IADC CODE	114	INTERVAL	799.0- 1293.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	5.7	BIT RUN	494.0
TOTAL HOURS	21.11	TOTAL TURNS	162445	CONDITION	T3 B5 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
800.0	100	0	500	43	41		29		29	9
810.0	92	0	460	40	38		27		27	8
820.0	84	117	1005	87	83		58		58	18
830.0	82	122	1020	89	85		59		59	18
840.0	84	92	880	76	73		51		51	16
850.0	96	100	980	85	81		57		57	18
860.0	86	93	895	78	74		52		52	16
870.0	0	156	780	68	65		45		45	14
880.0	83	92	875	76	73		51		51	16
890.0	85	92	885	77	73		51		51	16
900.0	86	90	880	76	73		51		51	16
910.0	82	86	840	73		50	49		49	15
920.0	84	90	870	76		52	50		50	16
930.0	85	89	870	76		52	50		50	16
940.0	85	85	850	74		51	49		49	15
950.0	116	0	580	50		35	34		34	10
960.0	88	88	880	76		53	51		51	16
970.0	85	85	850	74		51	49		49	15
980.0	89	89	890	77		53	51		51	16
990.0	96	80	880	76		53		53	51	16
1000.0	96	80	880	76		53		53	51	16
1010.0	96	84	900	78		54		54	52	16
1020.0	96	84	900	78		54		54	52	16
1030.0	96	84	900	78		54		54	52	16
1040.0	96	84	900	78		54		54	52	16
1050.0	96	84	900	78		54		54	52	16
1060.0	96	84	900	78		54		54	52	16
1070.0	96	84	900	78		54		54	52	16
1080.0	96	84	900	78		54		54	52	16
1090.0	96	80	880	76		53		53	51	16
1100.0	96	80	880	76		53		53	51	16
1110.0	96	80	880	76		53		53	51	16
1120.0	96	80	880	76		53		53	51	16
1130.0	96	80	880	76		53		53	51	16
1140.0	96	80	880	76		53		53	51	16
1150.0	93	88	905	79		54		54	52	16
1160.0	93	88	905	79		54		54	52	16
1170.0	96	86	910	79		54		54	53	16
1180.0	96	86	910	79		54		54	53	16
1190.0	90	84	870	76		52		52	50	16
1200.0	90	84	870	76		52		52	50	16
1210.0	90	84	870	76		52		52	50	16
1220.0	120	0	600	52		36		36	35	11

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1230.0	120	0	600	52		36		36	35	11
1240.0	144	84	1140	99		68		68	66	20
1250.0	120	0	600	52		36		36	35	11
1260.0	120	0	600	52		36		36	35	11
1270.0	120	0	600	52		36		36	35	11
1280.0	120	0	600	52		36		36	35	11
1290.0	120	0	600	52		36		36	35	11
1293.0	120	0	600	52		36		36	35	11

BIT NUMBER	4	IADC CODE	114	INTERVAL	1293.0- 1391.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 16
COST	1300.00	TRIP TIME	6.1	BIT RUN	98.0
TOTAL HOURS	4.14	TOTAL TURNS	33204	CONDITION	T1 B3 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1300.0	100	75	875	76		52		52	51	16
1310.0	92	71	815	71		49		49	47	15
1320.0	100	70	850	74		51		51	49	15
1330.0	100	72	860	75		51		51	50	15
1340.0	100	72	860	75		51		51	50	15
1350.0	99	71	850	74		51		51	49	15
1360.0	96	73	845	73		50		50	49	15
1370.0	96	77	865	75		52		52	50	16
1380.0	95	70	825	72		49		49	48	15
1390.0	80	80	800	69		48		48	46	14
1391.0	80	80	800	69		48		48	46	14

BIT NUMBER	5	IADC CODE	4	INTERVAL	1392.0- 1404.4
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.1	BIT RUN	12.4
TOTAL HOURS	2.02	TOTAL TURNS	11091	CONDITION	- TO B0 G0.300

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1400.0	45	0	225	218		36		36	13	4
1404.4	45	0	225	218		36		36	13	4

BIT NUMBER	5	IADC CODE	4	INTERVAL	1405.0- 1418.2
CHRISTENSEN C22		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	6.2	BIT RUN	13.2
TOTAL HOURS	5.21	TOTAL TURNS	28361	CONDITION	T0 B0 G0.800

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1410.0	46	0	230	223		37		37	13	4
1418.2	48	0	240	233		38		38	14	4

BIT NUMBER	6	IADC CODE	114	INTERVAL	1418.0- 1495.0
HTC X3A		SIZE	12.250	NOZZLES	14 14 15
COST	1400.00	TRIP TIME	6.4	BIT RUN	77.0
TOTAL HOURS	4.60	TOTAL TURNS	36973	CONDITION	T7 B6 G0.750

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1420.0	69	79	740	64		44		44	43	13
1430.0	69	79	740	64		44		44	43	13
1440.0	69	79	740	64		44		44	43	13
1450.0	69	79	740	64		44		44	43	13
1460.0	72	76	740	64		44		44	43	13
1470.0	72	76	740	64		44		44	43	13
1480.0	72	76	740	64		44		44	43	13
1490.0	72	76	740	64		44		44	43	13
1495.0	70	78	740	64		44		44	43	13

BIT NUMBER	7	IADC CODE	217	INTERVAL	1495.0- 1585.0
HTC JD4		SIZE	12.250	NOZZLES	15 15 14
COST	1800.00	TRIP TIME	6.8	BIT RUN	90.0
TOTAL HOURS	7.22	TOTAL TURNS	49693	CONDITION	T7 B5 G0.313

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1500.0	75	79	770	67		46		46	45	14
1510.0	79	75	770	67		46		46	45	14
1520.0	75	79	770	67		46		46	45	14
1530.0	75	79	770	67		46		46	45	14
1540.0	123	0	615	53		37		37	36	11
1550.0	78	79	785	68		47		47	45	14
1560.0	78	79	785	68		47		47	45	14
1570.0	80	71	755	66		45		45	44	14
1580.0	80	71	755	66		45		45	44	14
1585.0	80	80	800	69		48		48	46	14

BIT NUMBER	9	IADC CODE	517	INTERVAL	1585.0- 1986.0
HTC J22		SIZE	12.250	NOZZLES	15 15 14
COST	4200.00	TRIP TIME	8.2	BIT RUN	401.0
TOTAL HOURS	40.51	TOTAL TURNS	244481	CONDITION	T5 B4 G0.188

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1590.0	69	73	710	62		42		42	41	13
1600.0	80	76	780	68		47		47	45	14
1610.0	70	76	730	63		44		44	42	13
1620.0	70	74	720	63		43		43	42	13
1630.0	72	78	750	65		45		45	43	13
1640.0	72	78	750	65		45		45	43	13
1650.0	72	76	740	64		44		44	43	13
1660.0	72	76	740	64		44		44	43	13
1670.0	72	76	740	64		44		44	43	13
1680.0	68	76	720	63		43		43	42	13
1690.0	74	70	720	63		43		43	42	13
1700.0	76	72	740	64		44		44	43	13
1710.0	77	64	705	61		42		42	41	13
1720.0	84	78	810	70		48		48	47	15
1730.0	81	71	760	66		45		45	44	14
1740.0	71	82	765	66		46		46	44	14
1750.0	72	80	760	66		45		45	44	14
1760.0	71	78	745	65		45		45	43	13
1770.0	72	72	720	63		43		43	42	13
1780.0	71	77	740	64		44		44	43	13
1790.0	75	82	785	68		47		47	45	14
1800.0	75	75	750	65		45		45	43	13
1810.0	0	122	610	53		36		36	35	11
1820.0	69	77	730	63		44		44	42	13
1830.0	72	70	710	62		42		42	41	13
1840.0	72	70	710	62		42		42	41	13
1850.0	74	68	710	62		42		42	41	13
1860.0	74	70	720	63		43		43	42	13
1870.0	75	75	750	65		45		45	43	13
1880.0	76	68	720	63		43		43	42	13
1890.0	72	72	720	63		43		43	42	13
1900.0	72	72	720	63		43		43	42	13
1910.0	72	72	720	63		43		43	42	13
1920.0	72	72	720	63		43		43	42	13
1930.0	67	72	695	60		42		42	40	12
1940.0	69	69	690	60		41		41	40	12
1950.0	69	69	690	60		41		41	40	12
1960.0	69	72	705	61		42		42	41	13
1970.0	72	74	730	63		44		44	42	13
1980.0	72	72	720	63		43		43	42	13
1986.0	75	75	750	65		45		45	43	13

BIT NUMBER	10	IADC CODE	517	INTERVAL	1986.0- 2161.0
HTC J22		SIZE	12.250	NOZZLES	14 14 15
COST	4200.00	TRIP TIME	8.9	BIT RUN	175.0
TOTAL HOURS	29.75	TOTAL TURNS	175777	CONDITION	T8 B5 G0.125

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1990.0	62	64	630	55		38		38	36	11
2000.0	63	64	635	55		38		38	37	11
2010.0	67	65	660	57		39		39	38	12
2020.0	65	65	650	56		39		39	38	12
2030.0	65	65	650	56		39		39	38	12
2040.0	65	65	650	56		39		39	38	12
2050.0	65	65	650	56		39		39	38	12
2060.0	62	65	635	55		38		38	37	11
2070.0	0	110	550	48		33		33	32	10
2080.0	65	65	650	56		39		39	38	12
2090.0	65	65	650	56		39		39	38	12
2100.0	65	65	650	56		39		39	38	12
2110.0	65	65	650	56		39		39	38	12
2120.0	65	65	650	56		39		39	38	12
2130.0	64	66	650	56		39		39	38	12
2140.0	64	66	650	56		39		39	38	12
2150.0	64	66	650	56		39		39	38	12
2160.0	100	0	500	43		30		30	29	9
2161.0	100	0	500	43		30		30	29	9

BIT NUMBER	11	IADC CODE	527	INTERVAL	2161.0- 2324.5
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	9.5	BIT RUN	163.5
TOTAL HOURS	35.81	TOTAL TURNS	204879	CONDITION	T4 B6 G0.188

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2162.0	63	64	635	55		38		38	37	11
2163.0	63	64	635	55		38		38	37	11
2164.0	63	64	635	55		38		38	37	11
2165.0	63	64	635	55		38		38	37	11
2166.0	63	64	635	55		38		38	37	11
2167.0	64	64	640	56		38		38	37	11
2168.0	64	64	640	56		38		38	37	11
2169.0	64	64	640	56		38		38	37	11
2170.0	64	64	640	56		38		38	37	11
2171.0	64	64	640	56		38		38	37	11
2172.0	64	64	640	56		38		38	37	11
2173.0	64	64	640	56		38		38	37	11
2174.0	64	64	640	56		38		38	37	11
2175.0	64	64	640	56		38		38	37	11
2176.0	64	66	650	56		39		39	38	12
2177.0	64	66	650	56		39		39	38	12
2178.0	64	66	650	56		39		39	38	12
2179.0	64	66	650	56		39		39	38	12
2180.0	64	66	650	56		39		39	38	12
2181.0	64	66	650	56		39		39	38	12
2182.0	64	66	650	56		39		39	38	12
2183.0	64	66	650	56		39		39	38	12
2184.0	64	66	650	56		39		39	38	12
2185.0	64	66	650	56		39		39	38	12
2186.0	64	66	650	56		39		39	38	12
2187.0	64	66	650	56		39		39	38	12
2188.0	64	66	650	56		39		39	38	12
2189.0	64	66	650	56		39		39	38	12
2190.0	64	66	650	56		39		39	38	12
2191.0	64	66	650	56		39		39	38	12
2192.0	64	66	650	56		39		39	38	12
2193.0	64	66	650	56		39		39	38	12
2194.0	64	66	650	56		39		39	38	12
2195.0	64	66	650	56		39		39	38	12
2196.0	64	66	650	56		39		39	38	12
2197.0	64	66	650	56		39		39	38	12
2198.0	64	66	650	56		39		39	38	12
2199.0	64	66	650	56		39		39	38	12
2200.0	64	66	650	56		39		39	38	12
2201.0	64	66	650	56		39		39	38	12
2202.0	64	66	650	56		39		39	38	12
2203.0	67	63	650	56		39		39	38	12
2204.0	67	63	650	56		39		39	38	12

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2205.0	67	63	650	56		39		39	38	12
2206.0	67	63	650	56		39		39	38	12
2207.0	67	63	650	56		39		39	38	12
2208.0	67	63	650	56		39		39	38	12
2209.0	67	63	650	56		39		39	38	12
2210.0	67	63	650	56		39		39	38	12
2211.0	67	63	650	56		39		39	38	12
2212.0	67	63	650	56		39		39	38	12
2213.0	67	63	650	56		39		39	38	12
2214.0	67	63	650	56		39		39	38	12
2215.0	67	63	650	56		39		39	38	12
2216.0	67	63	650	56		39		39	38	12
2217.0	67	63	650	56		39		39	38	12
2218.0	67	63	650	56		39		39	38	12
2219.0	67	63	650	56		39		39	38	12
2220.0	67	63	650	56		39		39	38	12
2221.0	67	63	650	56		39		39	38	12
2222.0	67	63	650	56		39		39	38	12
2223.0	67	63	650	56		39		39	38	12
2224.0	67	63	650	56		39		39	38	12
2225.0	67	63	650	56		39		39	38	12
2226.0	67	63	650	56		39		39	38	12
2227.0	67	63	650	56		39		39	38	12
2228.0	67	63	650	56		39		39	38	12
2229.0	67	63	650	56		39		39	38	12
2230.0	67	63	650	56		39		39	38	12
2231.0	67	63	650	56		39		39	38	12
2232.0	67	63	650	56		39		39	38	12
2233.0	67	63	650	56		39		39	38	12
2234.0	67	63	650	56		39		39	38	12
2235.0	67	63	650	56		39		39	38	12
2236.0	67	63	650	56		39		39	38	12
2237.0	67	63	650	56		39		39	38	12
2238.0	67	63	650	56		39		39	38	12
2239.0	67	63	650	56		39		39	38	12
2240.0	67	63	650	56		39		39	38	12
2241.0	67	63	650	56		39		39	38	12
2242.0	67	63	650	56		39		39	38	12
2243.0	67	63	650	56		39		39	38	12
2244.0	67	63	650	56		39		39	38	12
2245.0	67	63	650	56		39		39	38	12
2246.0	67	63	650	56		39		39	38	12
2247.0	67	63	650	56		39		39	38	12
2248.0	67	63	650	56		39		39	38	12
2249.0	67	63	650	56		39		39	38	12
2250.0	67	63	650	56		39		39	38	12
2251.0	67	63	650	56		39		39	38	12
2252.0	67	63	650	56		39		39	38	12
2253.0	67	63	650	56		39		39	38	12
2254.0	67	63	650	56		39		39	38	12

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2255.0	67	63	650	56		39		39	38	12
2256.0	67	63	650	56		39		39	38	12
2257.0	67	63	650	56		39		39	38	12
2258.0	67	63	650	56		39		39	38	12
2259.0	67	63	650	56		39		39	38	12
2260.0	67	63	650	56		39		39	38	12
2261.0	67	63	650	56		39		39	38	12
2262.0	67	63	650	56		39		39	38	12
2263.0	67	63	650	56		39		39	38	12
2264.0	67	63	650	56		39		39	38	12
2265.0	67	63	650	56		39		39	38	12
2266.0	67	63	650	56		39		39	38	12
2267.0	67	63	650	56		39		39	38	12
2268.0	67	63	650	56		39		39	38	12
2269.0	67	63	650	56		39		39	38	12
2270.0	67	63	650	56		39		39	38	12
2271.0	67	63	650	56		39		39	38	12
2272.0	67	63	650	56		39		39	38	12
2273.0	67	63	650	56		39		39	38	12
2274.0	67	63	650	56		39		39	38	12
2275.0	67	63	650	56		39		39	38	12
2276.0	67	63	650	56		39		39	38	12
2277.0	67	63	650	56		39		39	38	12
2278.0	67	63	650	56		39		39	38	12
2279.0	67	63	650	56		39		39	38	12
2280.0	67	63	650	56		39		39	38	12
2281.0	67	63	650	56		39		39	38	12
2282.0	67	63	650	56		39		39	38	12
2283.0	67	63	650	56		39		39	38	12
2284.0	67	63	650	56		39		39	38	12
2285.0	67	63	650	56		39		39	38	12
2286.0	67	63	650	56		39		39	38	12
2287.0	67	63	650	56		39		39	38	12
2288.0	67	63	650	56		39		39	38	12
2289.0	67	63	650	56		39		39	38	12
2290.0	67	63	650	56		39		39	38	12
2291.0	67	63	650	56		39		39	38	12
2292.0	67	63	650	56		39		39	38	12
2293.0	67	63	650	56		39		39	38	12
2294.0	67	63	650	56		39		39	38	12
2295.0	52	60	560	49		33		33	32	10
2296.0	52	60	560	49		33		33	32	10
2297.0	52	60	560	49		33		33	32	10
2298.0	52	60	560	49		33		33	32	10
2299.0	40	52	460	40		27		27	27	8
2300.0	62	66	640	56		38		38	37	11
2301.0	48	52	500	43		30		30	29	9
2302.0	48	52	500	43		30		30	29	9
2303.0	48	52	500	43		30		30	29	9
2304.0	48	52	500	43		30		30	29	9

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2305.0	48	52	500	43		30		30	29	9
2306.0	62	67	645	56		39		39	37	12
2307.0	62	67	645	56		39		39	37	12
2308.0	62	67	645	56		39		39	37	12
2309.0	62	67	645	56		39		39	37	12
2310.0	62	67	645	56		39		39	37	12
2311.0	62	67	645	56		39		39	37	12
2312.0	67	62	645	56		39		39	37	12
2313.0	67	62	645	56		39		39	37	12
2314.0	67	62	645	56		39		39	37	12
2315.0	67	62	645	56		39		39	37	12
2316.0	67	62	645	56		39		39	37	12
2317.0	67	62	645	56		39		39	37	12
2318.0	67	62	645	56		39		39	37	12
2319.0	67	62	645	56		39		39	37	12
2320.0	67	62	645	56		39		39	37	12
2321.0	67	62	645	56		39		39	37	12
2322.0	67	62	645	56		39		39	37	12
2323.0	67	62	645	56		39		39	37	12
2324.0	67	62	645	56		39		39	37	12
2324.5	67	62	645	56		39		39	37	12

BIT NUMBER	12	IADC CODE	527	INTERVAL	2324.5- 2521.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.2	BIT RUN	196.5
TOTAL HOURS	45.29	TOTAL TURNS	252275	CONDITION	T6 B6 G0.250

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2330.0	64	66	650	56		39		39	38	12
2340.0	64	66	650	56		39		39	38	12
2350.0	63	67	650	56		39		39	38	12
2360.0	0	96	480	42		29		29	28	9
2370.0	67	65	660	57		39		39	38	12
2380.0	67	65	660	57		39		39	38	12
2390.0	64	66	650	56		39		39	38	12
2400.0	0	103	515	45		31		31	30	9
2410.0	64	64	640	56		38		38	37	11
2420.0	64	66	650	56		39		39	38	12
2430.0	63	68	655	57		39		39	38	12
2440.0	64	68	660	57		39		39	38	12
2450.0	68	61	645	56		39		39	37	12
2460.0	68	64	660	57		39		39	38	12
2470.0	68	64	660	57		39		39	38	12
2480.0	63	60	615	53		37		37	36	11
2490.0	66	62	640	56		38		38	37	11
2500.0	66	61	635	55		38		38	37	11
2510.0	63	68	655	57		39		39	38	12
2520.0	63	68	655	57		39		39	38	12
2521.0	63	68	655	57		39		39	38	12

BIT NUMBER	13	IADC CODE	316	INTERVAL	2521.0- 2535.0
HTC J7		SIZE	12.250	NOZZLES	14 14 14
COST	1800.00	TRIP TIME	10.2	BIT RUN	14.0
TOTAL HOURS	6.20	TOTAL TURNS	20696	CONDITION	T3 B2 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2530.0	60	63	615	53		37		37	36	11
2535.0	60	60	600	52		36		36	35	11

BIT NUMBER	14	IADC CODE	527	INTERVAL	2535.0- 2600.0
HTC J33		SIZE	12.250	NOZZLES	14 14 14
COST	6090.00	TRIP TIME	10.4	BIT RUN	65.0
TOTAL HOURS	8.77	TOTAL TURNS	53719	CONDITION	T5 B3 G0.125

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2540.0	104	0	520	45		31		31	30	9
2550.0	75	48	615	53		37		37	36	11
2560.0	64	64	640	56		38		38	37	11
2570.0	66	62	640	56		38		38	37	11
2580.0	64	64	640	56		38		38	37	11
2590.0	64	64	640	56		38		38	37	11
2600.0	64	64	640	56		38		38	37	11

BIT NUMBER	15	IADC CODE	527	INTERVAL	2600.0- 2663.3
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	10.7	BIT RUN	63.3
TOTAL HOURS	13.94	TOTAL TURNS	76380	CONDITION	T3 B3 G0.125

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2610.0	62	64	630	55				38	36	11
2620.0	63	64	635	55				38	37	11
2630.0	104	0	520	45				31	30	9
2640.0	64	63	635	55				38	37	11
2650.0	64	63	635	55				38	37	11
2660.0	64	63	635	55				38	37	11
2663.3	64	64	640	56				38	37	11

BIT NUMBER	16	IADC CODE	4	INTERVAL	2663.3- 2669.0
CHRISTENSEN C20		SIZE	8.468	NOZZLES	13 13 13
COST	15000.00	TRIP TIME	10.7	BIT RUN	5.7
TOTAL HOURS	4.08	TOTAL TURNS	18692	CONDITION	T0 B0 G0.200

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2669.0	56	0	280	271					16	5

BIT NUMBER	17	IADC CODE	527	INTERVAL	2669.0- 2815.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.2	BIT RUN	146.0
TOTAL HOURS	33.41	TOTAL TURNS	234387	CONDITION	T6 B5 G0.187

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2670.0	64	64	640	56				38	37	11
2680.0	64	64	640	56				38	37	11
2690.0	64	64	640	56				38	37	11
2700.0	64	64	640	56				38	37	11
2710.0	64	64	640	56				38	37	11
2720.0	64	64	640	56				38	37	11
2730.0	64	64	640	56				38	37	11
2740.0	64	64	640	56				38	37	11
2750.0	63	65	640	56				38	37	11
2760.0	63	65	640	56				38	37	11
2770.0	62	64	630	55				38	36	11
2780.0	62	64	630	55				38	36	11
2790.0	63	63	630	55				38	36	11
2800.0	62	66	640	56				38	37	11
2810.0	64	64	640	56				38	37	11
2815.0	62	64	630	55				38	36	11

BIT NUMBER	18	IADC CODE	527	INTERVAL	2815.0- 2955.0
HTC J33		SIZE	12.250	NOZZLES	14 14 15
COST	6090.00	TRIP TIME	11.7	BIT RUN	140.0
TOTAL HOURS	36.54	TOTAL TURNS	218379	CONDITION	T6 B6 G0.250

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2820.0	60	64	620					37	36	11
2830.0	61	62	615					37	36	11
2840.0	60	60	600					36	35	11
2850.0	62	60	610					36	35	11
2860.0	62	60	610					36	35	11
2870.0	62	60	610					36	35	11
2880.0	120	0	600					36	35	11
2890.0	0	115	575					34	33	10
2900.0	0	116	580					35	34	10
2910.0	122	0	610					36	35	11
2920.0	0	114	570					34	33	10
2930.0	0	114	570					34	33	10
2940.0	0	114	570					34	33	10
2950.0	0	114	570					34	33	10
2955.0	0	114	570					34	33	10

BIT NUMBER	19	IADC CODE	131	INTERVAL	1998.0- 2460.0
HTC OSC 1G		SIZE	8.500	NOZZLES	28 28 28
COST	900.00	TRIP TIME	9.9	BIT RUN	462.0
TOTAL HOURS	14.37	TOTAL TURNS	104481	CONDITION	T3 B5 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2000.0	103	0	515		106				76	9
2010.0	103	0	515		106				76	9
2020.0	98	0	490		101				73	9
2030.0	98	0	490		101				73	9
2040.0	98	0	490		101				73	9
2050.0	105	0	525		108				78	9
2060.0	105	0	525		108				78	9
2070.0	105	0	525		108				78	9
2080.0	105	0	525		108				78	9
2090.0	105	0	525		108				78	9
2100.0	105	0	525		108				78	9
2110.0	105	0	525		108				78	9
2120.0	68	65	665		137				99	12
2130.0	68	65	665		137				99	12
2140.0	68	65	665		137				99	12
2150.0	68	65	665		137				99	12
2160.0	68	65	665		137				99	12
2170.0	68	65	665		137				99	12
2180.0	68	65	665		137				99	12
2190.0	68	65	665		137				99	12
2200.0	68	65	665		137				99	12
2210.0	68	65	665		137				99	12
2220.0	0	112	560		115				83	10
2230.0	0	112	560		115				83	10
2240.0	0	112	560		115				83	10
2250.0	0	112	560		115				83	10
2260.0	60	63	615		127				91	11
2270.0	60	63	615		127				91	11
2280.0	60	63	615		127				91	11
2290.0	60	63	615		127				91	11
2300.0	60	63	615		127				91	11
2310.0	64	64	640		132				95	11
2320.0	64	64	640		132				95	11
2330.0	64	64	640		132				95	11
2340.0	64	64	640		132				95	11
2350.0	64	64	640		132				95	11
2360.0	64	64	640		132				95	11
2370.0	64	64	640		132				95	11
2380.0	64	64	640		132				95	11
2390.0	64	64	640		132				95	11
2400.0	64	64	640		132				95	11
2410.0	64	64	640		132				95	11
2420.0	56	64	600		123				89	11

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2430.0	56	64	600		123				89	11
2440.0	60	66	630		130				93	11
2450.0	60	66	630		130				93	11
2460.0	60	66	630		130				93	11

BIT NUMBER	20	IADC CODE	116	INTERVAL	2460.0- 2747.0
HTC J2		SIZE	8.500	NOZZLES	16 16 16
COST	900.00	TRIP TIME	11.0	BIT RUN	287.0
TOTAL HOURS	5.46	TOTAL TURNS	35461	CONDITION	T2 B2 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2470.0	50	48	490		101				73	9
2480.0	50	48	490		101				73	9
2490.0	50	48	490		101				73	9
2500.0	50	48	490		101				73	9
2510.0	50	48	490		101				73	9
2520.0	50	48	490		101				73	9
2530.0	50	48	490		101				73	9
2540.0	48	52	500		103				74	9
2550.0	48	52	500		103				74	9
2560.0	48	52	500		103				74	9
2570.0	48	52	500		103				74	9
2580.0	48	52	500		103				74	9
2590.0	48	52	500		103				74	9
2600.0	48	52	500		103				74	9
2610.0	48	52	500		103				74	9
2620.0	48	52	500		103				74	9
2630.0	48	52	500		103				74	9
2640.0	48	52	500		103				74	9
2650.0	48	52	500		103				74	9
2660.0	48	52	500		103				74	9
2670.0	48	52	500		103				74	9
2680.0	48	52	500		103				74	9
2690.0	48	52	500		103				74	9
2700.0	48	52	500		103				74	9
2710.0	48	52	500		103				74	9
2747.0	0	100	500		103				74	9

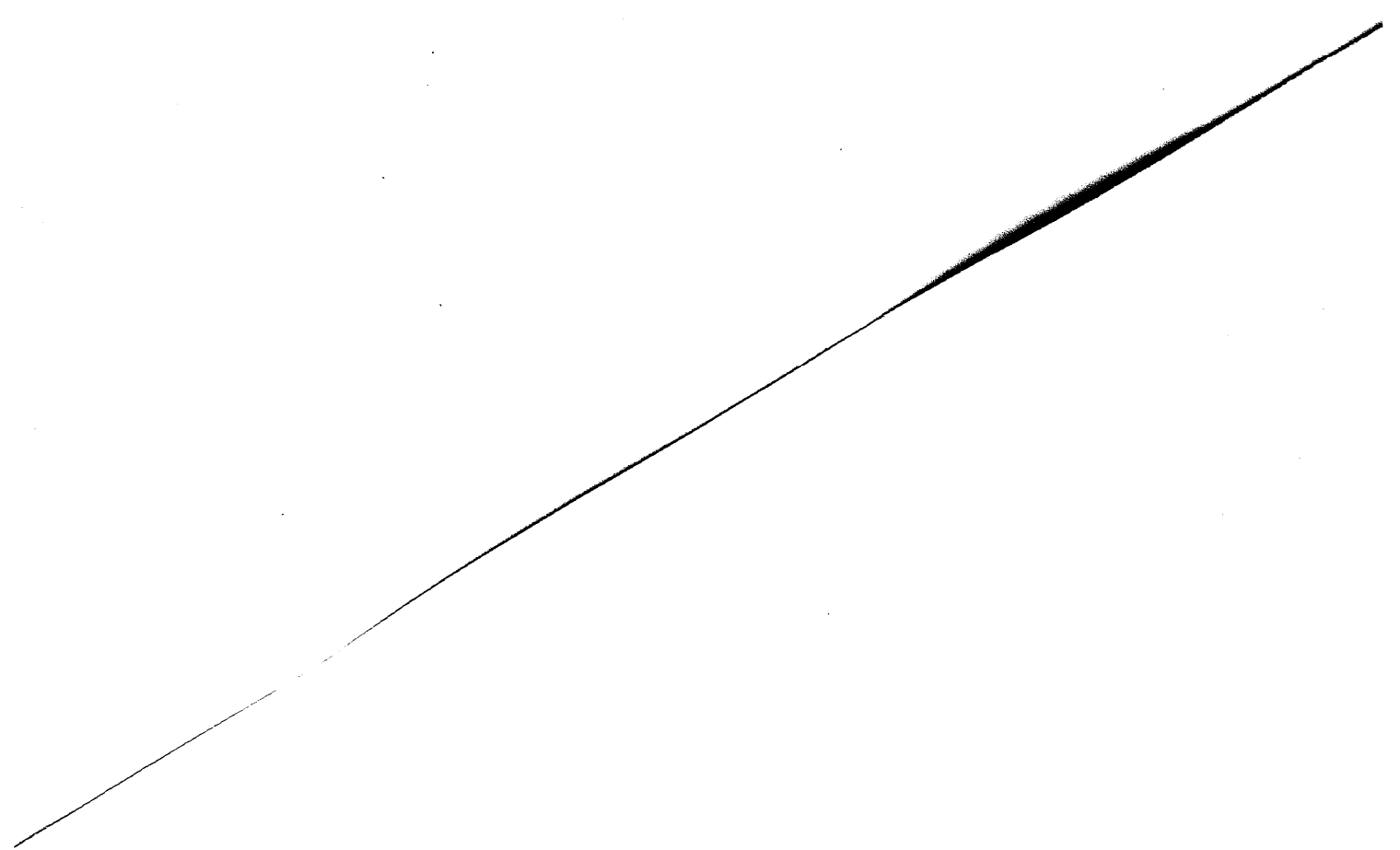
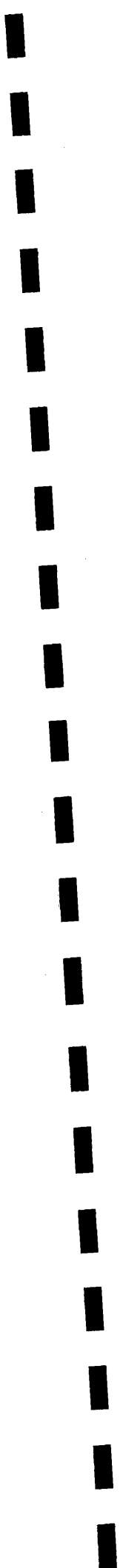
PE603794

This is an enclosure indicator page.
The enclosure PE603794 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE603794 has the following characteristics:

- ITEM_BARCODE = PE603794
- CONTAINER_BARCODE = PE906419
 - NAME = Drill Data Log
 - BASIN = GIPPSLAND
 - PERMIT = VIC/L1
 - TYPE = WELL
 - SUBTYPE = WELL_LOG
- DESCRIPTION = Drill Data Log for Tarwhine-1
- REMARKS =
- DATE_CREATED = 28/12/81
- DATE_RECEIVED =
 - W_NO = W760
 - WELL_NAME = TARWHINE-1
 - CONTRACTOR = CORE LABORATORIES
 - CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)



DRILL DATA PLOT

PE603794

PE603795

This is an enclosure indicator page.
The enclosure PE603795 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE603795 has the following characteristics:

- ITEM_BARCODE = PE603795
- CONTAINER_BARCODE = PE906419
 - NAME = Cost Analysis Log
 - BASIN = GIPPSLAND
 - PERMIT = VIC/L1
 - TYPE = WELL
 - SUBTYPE = WELL_LOG
 - DESCRIPTION = Cost Analysis Log for Tarwhine-1
 - REMARKS =
- DATE_CREATED = 28/12/81
- DATE_RECEIVED =
 - W_NO = W760
 - WELL_NAME = TARWHINE-1
 - CONTRACTOR = CORE LABORATORIES
 - CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

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COST ANALYSIS PLOT

PE603795

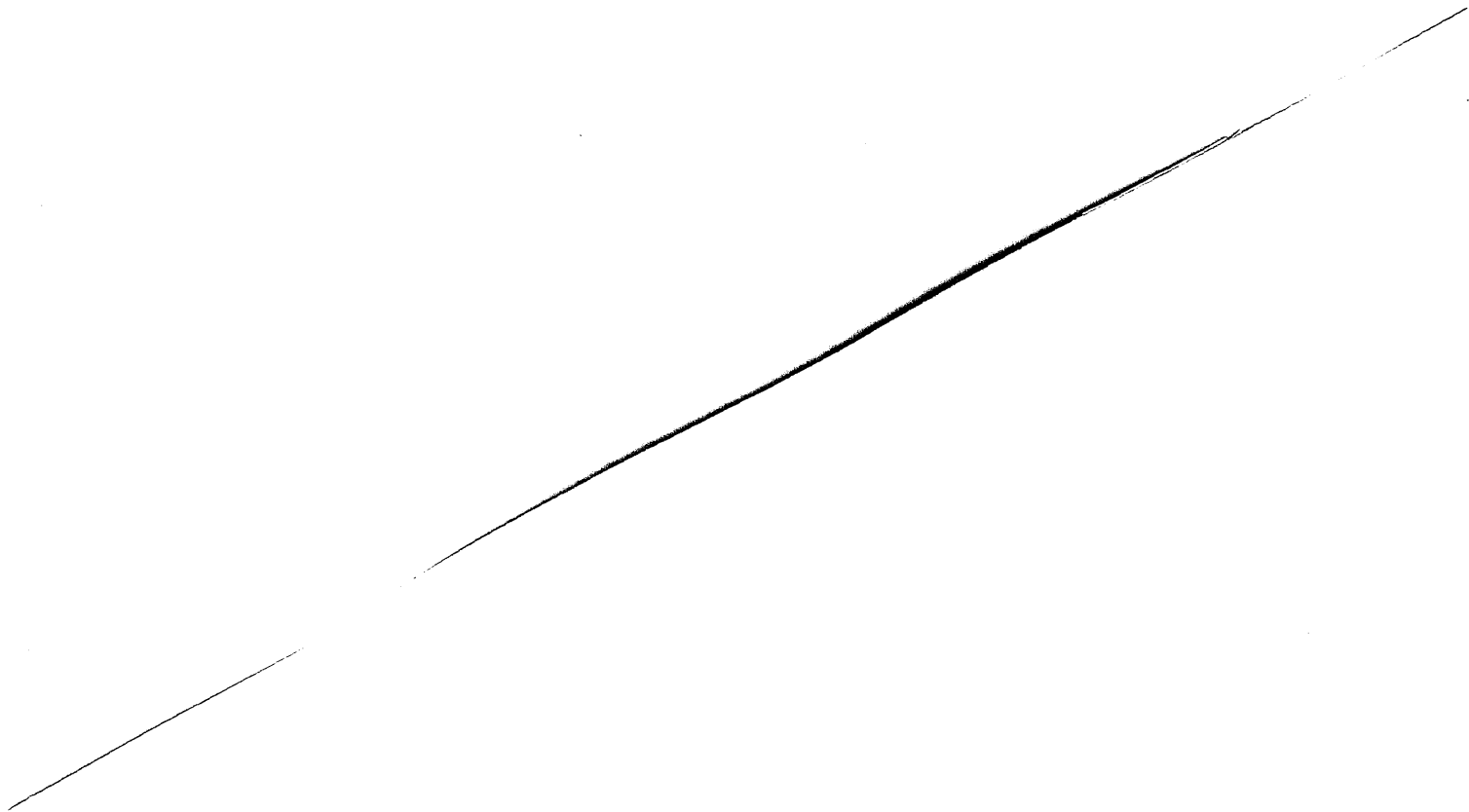
PE603796

This is an enclosure indicator page.
The enclosure PE603796 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE603796 has the following characteristics:

ITEM_BARCODE = PE603796
CONTAINER_BARCODE = PE906419
NAME = Temperature Log
BASIN = GIPPSLAND
PERMIT = VIC/L1
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Temperature Log for Tarwhine-1
REMARKS =
DATE_CREATED = 28/12/81
DATE_RECEIVED =
W_NO = W760
WELL_NAME = TARWHINE-1
CONTRACTOR = CORE LABORATORIES
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

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TEMPERATURE PLOT

PE 603796

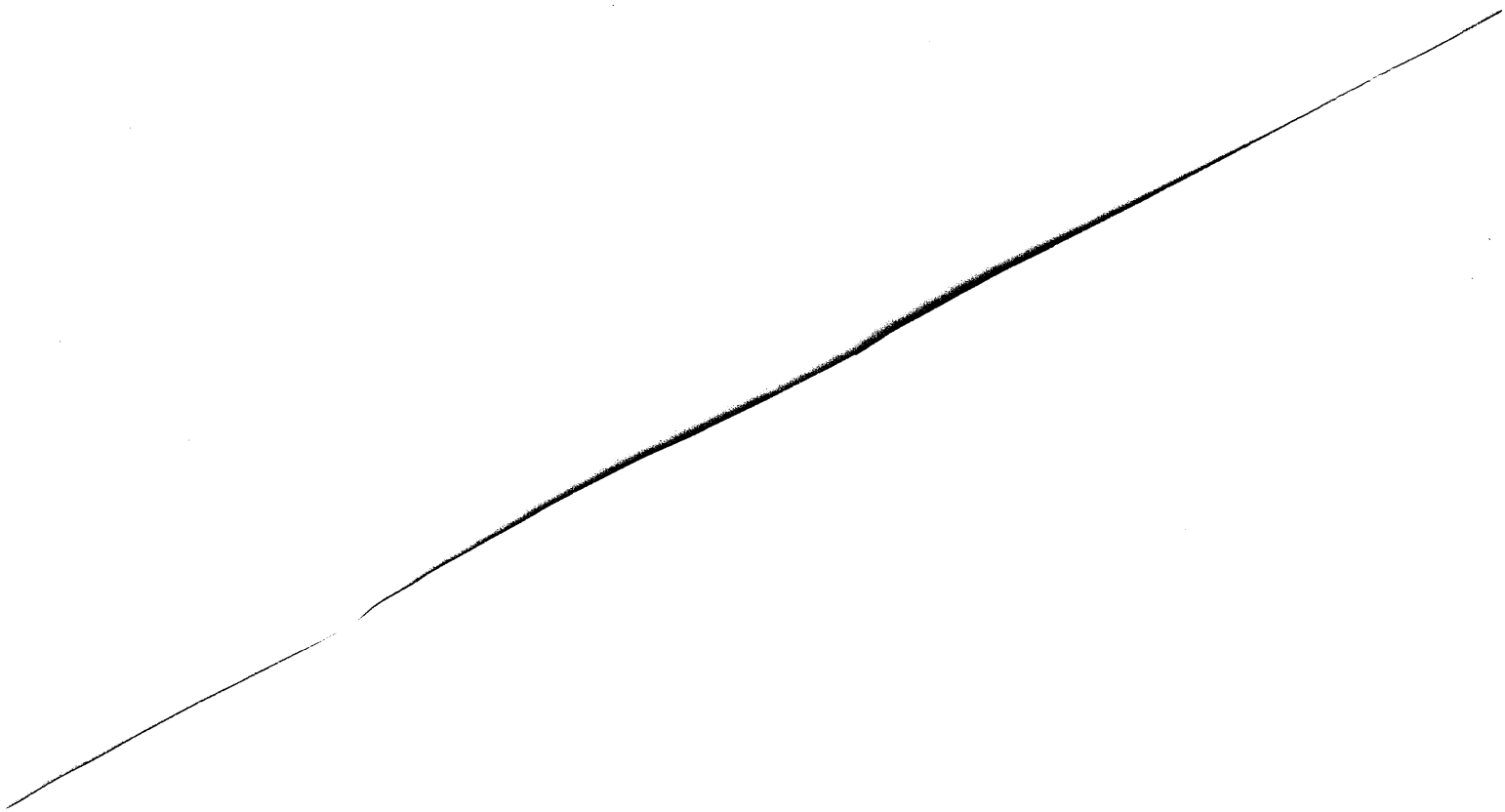
PE603797

This is an enclosure indicator page.
The enclosure PE603797 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE603797 has the following characteristics:

ITEM_BARCODE = PE603797
CONTAINER_BARCODE = PE906419
 NAME = Pressure Plot
 BASIN = GIPPSLAND
 PERMIT = VIC/L1
 TYPE = WELL
 SUBTYPE = WELL_LOG
DESCRIPTION = Pressure Plot for Tarwhine-1
REMARKS =
DATE_CREATED = 28/12/81
DATE_RECEIVED =
 W_NO = W760
 WELL_NAME = TARWHINE-1
CONTRACTOR = CORE LABORATORIES
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

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PRESSURE PLOT

PE603797

PE603799

This is an enclosure indicator page.
The enclosure PE603799 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE603799 has the following characteristics:

- ITEM_BARCODE = PE603799
- CONTAINER_BARCODE = PE906419
 - NAME = Geoplot 1:2000
 - BASIN = GIPPSLAND
 - PERMIT = VIC/L1
 - TYPE = WELL
 - SUBTYPE = WELL_LOG
- DESCRIPTION = Geoplot (1:2000) for Tarwhine-1
- REMARKS =
- DATE_CREATED = 28/12/81
- DATE_RECEIVED =
 - W_NO = W760
 - WELL_NAME = TARWHINE-1
 - CONTRACTOR = CORE LABORATORIES
 - CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603798

This is an enclosure indicator page.
The enclosure PE603798 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE603798 has the following characteristics:

ITEM_BARCODE = PE603798
CONTAINER_BARCODE = PE906419
NAME = Geoplot 1:5000
BASIN = GIPPSLAND
PERMIT = VIC/L1
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Geoplot (1:5000) for Tarwhine-1
REMARKS =
DATE_CREATED = 28/12/81
DATE_RECEIVED =
W_NO = W760
WELL_NAME = TARWHINE-1
CONTRACTOR = CORE LABORATORIES
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

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GEOPLOT

PE 603 798

1: 5000

PE 603 799

1: 2000

PE603800

This is an enclosure indicator page.
The enclosure PE603800 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE603800 has the following characteristics:

ITEM_BARCODE = PE603800
CONTAINER_BARCODE = PE906419
NAME = Drilling Parameter Log
BASIN = GIPPSLAND
PERMIT = VIC/L1
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Drilling Parameter Log for Tarwhine-1
REMARKS =
DATE_CREATED = 28/12/81
DATE_RECEIVED =
W_NO = W760
WELL_NAME = TARWHINE-1
CONTRACTOR = CORE LABORATORIES
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

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DRILLING PARAMETER PLOT

PE 603800

PE601368

This is an enclosure indicator page.
The enclosure PE601368 is enclosed within the
container PE906419 at this location in this
document.

The enclosure PE601368 has the following characteristics:

ITEM_BARCODE = PE601368
CONTAINER_BARCODE = PE906419
NAME = Corelab Grapholog/Mud Log
BASIN = GIPPSLAND
PERMIT =
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Corelab Grapholog/Mud Log (enclosure
from WCR) for Tarwhine-1
REMARKS =
DATE_CREATED = 20/11/81
DATE_RECEIVED = 29/12/82
W_NO = W760
WELL_NAME = Tarwhine-1
CONTRACTOR = Core Laboratories Inc
CLIENT_OP_CO = ESSO

(Inserted by DNRE - Vic Govt Mines Dept)



MUD LOG

PE601368