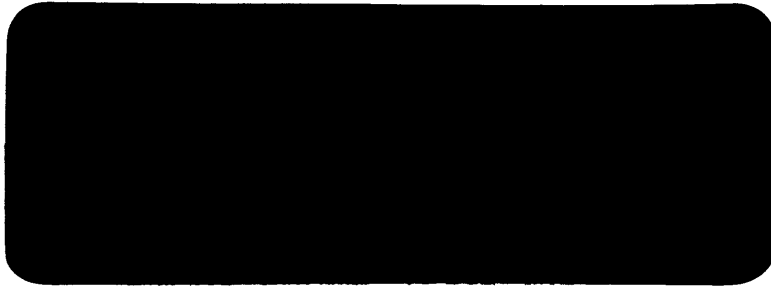


W819

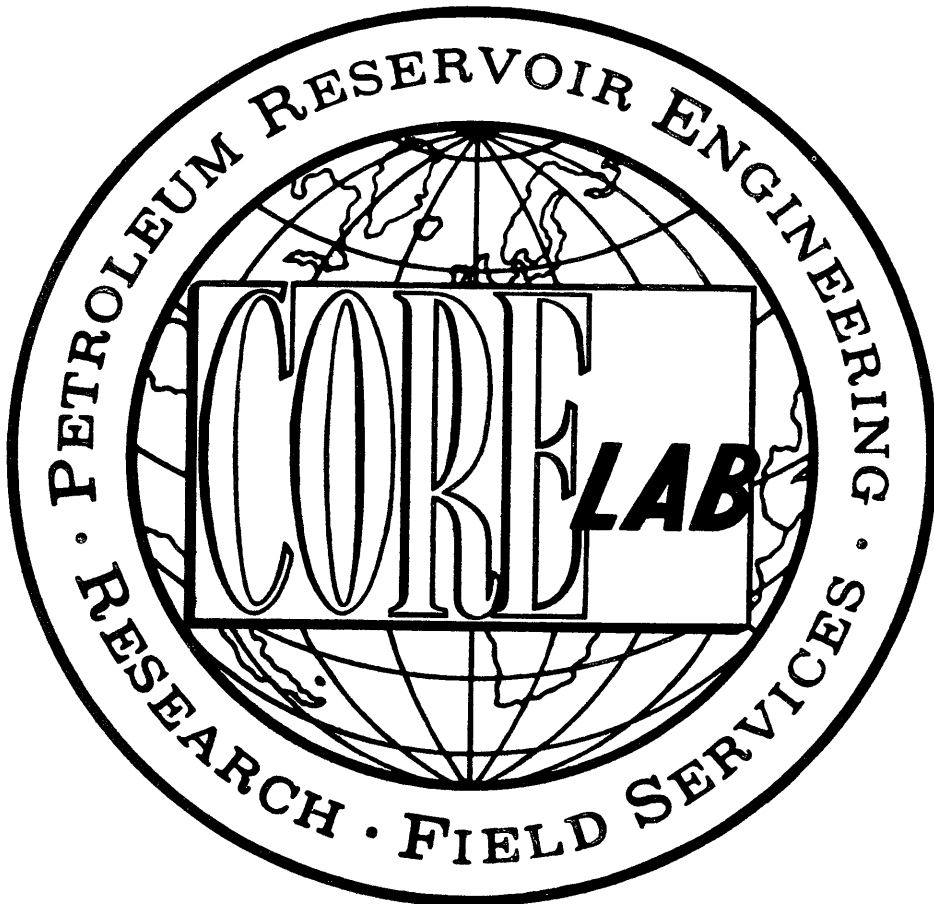
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PE906175



ATTACHMENT TO WCR VOL 2
LUDERICK-1 (W819)



ESSO AUSTRALIA LTD.

0 6 SEP 1983

ES WELL REPORT

LUDERICK NO. 1

OIL and GAS DIVISION

CORE LABORATORIES AUSTRALIA (QLD.) LTD.



1st August 1983

Mr. S Twartz
Esso Australia Ltd.
(Geology Department)
Esso House
127 Kent Street
Sydney
N.S.W. 2001

Dear Mr. Twartz,

Please find enclosed the original well report plus five (5) copies for the well LUDERICK NO. 1. If you have any enquiries, please do not hesitate to contact us.

Yours very truly
CORE LABORATORIES AUSTRALIA (QLD) LTD.

T. Charles

for
M. MOWATT
Unit Supervisor
FL 802

ARC:pc

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INTRODUCTION

LUDERICK NO. 1 was drilled by ESSO AUSTRALIA LTD. in the Bass Strait, Australia.

Well co-ordinates were:

Latitude : 38° 26' 20.61" S
Longitude : 147° 42' 57.85" 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.

LUDERICK NO. 1 was spudded on 4th June 1983 and reached a total depth of 3021m on 24th June 1983, a total drilling time of 21 days. The main objective of the well was to evaluate the hydrocarbon potential of a large areal intra-Latrobe anticlinal closure that lies to the northwest of the Bream field.

Elevations were:

Kelly bushings to mean sea level 21m
Water depth 53m
Kelly bushings to mean sea bed 74m

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

Core Laboratories personnel involved in the logging of LUDERICK NO. 1 were as follows:

TONY CHARLES	-	Pressure Engineer
GAVIN MUNN	-	Pressure Engineer
PAUL DENTON	-	Well Logger
RUSSELL MARTIN	-	Well Logger
BRYAN PAULET	-	Well Logger
ALAN BOCK	-	Sample Catcher
ERIC DIESPOSTI	-	Sample Catcher
TROY GROTH	-	Sample Catcher
GARY KILLEN	-	Sample Catcher

2. RIG SPECIFICATIONS



RIG INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.WELL LUDERICK 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 $\frac{1}{2}$ " 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 SHALE SHAKERS : 2 BRANDT DUAL UNIT TANDEM - GHI DUAL UNIT.
BLOW OUT PREVENTORS	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 VALV CON 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 $\frac{1}{2}$ " 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)

CMT 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

3. WELL INFORMATION, PROGRESS AND HISTORY



WELL INFORMATION SHEET

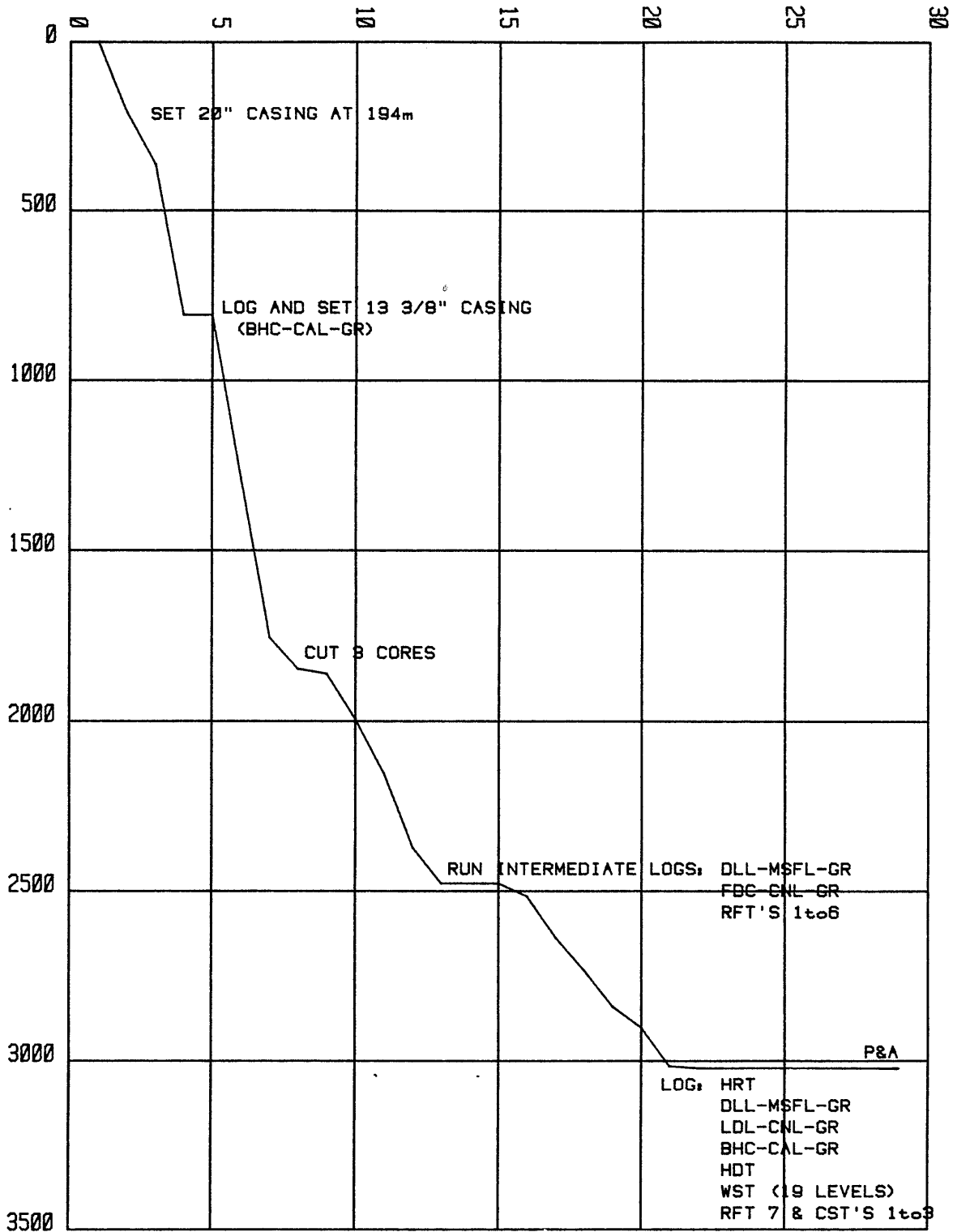
COMPANY ESSO AUSTRALIA LTD.
 WELL LUDERICK NO. 1

Sheet No. 1

WELL NAME	LUDERICK NO. 1										
OPERATOR	ESSO AUSTRALIA LTD.										
PARTNERS	B.H.P.										
RIG	OWNER	SOUTH SEAS DRILLING COMPANY									
	NAME OR NUMBER	SOUTHERN CROSS									
	TYPE	SEMI-SUBMERSIBLE									
LOCATION	LATITUDE (X)	38° 26' 20.61" S				LONGITUDE (Y)	147° 42' 57.85" E				
	FIELD	GIPPSLAND BASIN				AREA	BASS STRAIT				
	COUNTRY	AUSTRALIA				STATE	VICTORIA				
	COUNTRY	AUSTRALIA									
	DESCRIPTION	EXPLORATION									
DATUM POINTS	Ground Elevation	-				RKB to Ground Level	-				
	Mean Water Depth	53M				RKB to Water Level	21M				
DATES	SPUD	4TH JUNE 1983				TOTAL DEPTH	24TH JUNE 1983				
HOLE SIZES	Depth From	Depth To	Bit Size"	No. of Bits	No. of Reamers	Date From	Date To	Cased	Logged		
	74	209	26	1	-	4/6/83	4/6/83	YES	NO		
	209	806	17½	1	-	5/6/83	6/6/83	YES	YES		
	806	3021	12½	7	-	8/6/83	24/6/83	NO	YES		
DRILLING FLUID	Depth From	Depth To	Weights		Type						
	74	209	8.6	TO 8.6	SEAWATER						
	209	806	8.6	TO 9.0	SEAWATER GEL						
	806	3021	9.0	TO 9.2	SEAWATER GEL						
				TO							
				TO							
				TO							
WIRELINE LOGGING	Depth From	Depth To	Hole Size"	Date Run	Logs Run						
	806	194	17½	7/6/83	BHC-CAL-GR						
	2469	792	12½	15/6/83	DLL-MSFL-GR						
	2468	789	12½	16/6/83	FDC-CNL-GR						
	-	-	12½	16/6/83	RFT 1						
	-	-	12½	17/6/83	RFT 2, 3, 4						
	-	-	12½	18/6/83	RFT 5, 6						
1700	2400	12½	24/6/83	HRT							
RISER, CASING & LINER	Depth From	Depth To	OD "	ID "	Weight	Grade	Threads	Date Run	Cement	Stages	Excess
	0	74	22	21				RISER			
	74	194	20	19.124	94.4	X52	JV BOX	5/6/83	BC101	1	-
	194	792	13-3/8	12.615	54.5	K55	BUTT	7/6/83	BC101	1	-

PROGRESS LOG
 ESSO AUSTRALIA LTD. LUDERICK #1

3	JUN	30 1
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WELL DURATION : 29 DAYS

WELL HISTORY

3rd June 1983. On tow to location, arriving at 05:30 hours

Latitude : 38^o 26' 20.61" S
Longitude : 147^o 42' 57.85" E

Ran all anchors and set the temporary guide base, BHA was made up and RIH to spud.

4th June 1983. RIH, the well was spudded at 00:30 hours and 26" hole was drilled from 74m (mudline) to 103m (Bit No. 1 was a re-run HTC OSC 3AJ (17½") and it was run with a 26" hole-opener). The hole opener became stuck at 103m and pulling up to 500 kips failed to free it. With the riser tensioner rigged up to hold drill pipe, the kelly was backed out and jars rigged up. Rotating the fish with 35-40 kips ft/lb of torque the jars were tripped with 100 kips and the fish was freed. Pulling the hole opener to the TGB and inspecting with TV camera it was found to be OK. RIH to 85m and washing and reaming to 103 several times, continued. Drilled to 209m, circulating 50 bbls hi-vis mud every 2 joints. The hole was displaced with 350 bbls of hi-vis mud and POOH to the TGB a survey was recovered (½^o). RIH to 209m (no fill) the hole was circulated again with 350 bbls of hi-vis mud. POOH, 20" surface casing was then run (casing shoe at 194m) followed by the cement stinger.

5th June 1983. Cemented the 20" casing. The riser and stack were run and the diverter, hose reels and flowline rigged up. RIH with Bit No. 2 (17½" HTC OSC 3AJ). Cement was tagged at 183m and new hole drilled from 209m to 363m. Maximum gas was 2/5/3 units from 280m and BG remained at 1-2 units. New formation was drilled from 20:00 hours onwards at ROP'S of mainly 170 to 230m/hr. Cement was drilled at 20-30m/hr.

6th June 1983. Drilling 17½" hole continued from 363m to 806m and maximum gas was 10.9/25/6.7 units at 550m. Background gas was 5-9 units and T.D. for the 13-3/8" casing (806m) was reached at 15:38 hours. Drill rates varied from 30-100m/hr. After circulating out, a survey was dropped (¾^o when recovered) and POOH commenced. POOH, tight hole was experienced in the first 5 stands (130 kips overpull). Picking up the kelly and circulating (Gas 0.2/7.5/2.3 units) to wash the hole at 668m, POOH continued to the 20" casing shoe. RIH and washing through tight spots at 608m and 749m, 3m of fill were found on bottom (WTG was 0.2/8.6/6.9 units). Pumping a 40 bbls hi-vis slug and POOH to run Schlumberger logs, no drag was found.

7th June 1983. Schlumberger were rigged up; and ran 1 log, a BHC/CAL/GR (806m-194m). RIH for a wiper trip, no fill was found and circulating B/U, WTG was 0.4/3.9/0.1 units. POOH, then ran and cemented the 13-3/8" casing. POOH with the casing ring tool. The stack was tested and the wear bushing re-run. (Casing shoe was set at 792m.)

8th June 1983. Making up a new BHA (12¼" HTC X3A was Bit No. 3) and RIH, cement was tagged at 758m and drilled from 758m-792m, and the rat hole cleaned out to 806m. Drilling 6m of new formation to 812m a pressure integrity test (PIT) was conducted

after circulating B/U. The PIT gave leak off at 16.8 ppg max EMW. New hole was then drilled in the Gippsland Limestone formation from 812m to 1282m. Trip gas was 0.1/2.2/1.8 units and maximum gas for the day was 7.5/9.3/6.9 units at 974m over background levels of 2-7 units. ROP'S were consistently high at 40-70m/hr.

9th June 1983. Continued drilling 12 $\frac{1}{4}$ " hole from 1282m to 1751m where it was decided to pull the bit due to low ROP. (25-30m/hr decreased to 10m/hr). Circulated B/U dropped a survey and POOH. The survey indicated a deviation of 1 $\frac{1}{2}$ ^o and BCO was 4-6-I. Maximum drag experienced in POOH was 10 Kips. Changed the bit (12 $\frac{1}{4}$ " HTC J11); added a junk sub to the BHA; RIH and washed through tight spots at 1634m and 1690m. Reaming from 1732m to 1751m, no fill was found. Drilling 12 $\frac{1}{4}$ " hole then continued to 1755m with trip gas being 1.1/57/8 units and maximum gas for the day was 6.7/7.8/5.4 units at 1340m over a background of 2-5 units. Bit No. 3 made 945m of hole, a record for the Southern Cross.

10th June 1983. Drilled 12 $\frac{1}{4}$ " hole to 1837m, having circulated drill breaks out from: 1808m (14 units); 1819m (114 units); 1830m (150 units) and 1837m (118 units). As a significant hydrocarbon show was obtained from 1837m, it was decided to cut a core. (BG was 3-4 units for the drilled interval.) Core No. 1 was cut from 1837.9m-1847.5m (recovered 100%, all sandstone). A plastic liner was used for coring operations.

11th June 1983. Cut Cores 2 and 3 as follows:

- No. 2 1847.5m-1856.5m; 94.4% recovery, all sandstone.
- No. 3 1856.5m-1861.6m; 96.1% recovery, predominantly shale/mudstone with thin interbeds of sandstone.

12th June 1983. RIH to drill ahead with a J11 (3x15, 12 $\frac{1}{4}$ "). Washed from 1819m-1838m, and reamed the core rathole. Trip gas was masked by washing/reaming gas of 330 units. Drilled 12 $\frac{1}{4}$ " new hole down to 1993m. Flow-checks were made at the following drill-breaks: 1867, 1885, 1926, 1932, 1946, 1950 and 1988m (all were negative). Circulated a drill-break out at 1956m (2 units gas, no show). Today's maximum drill gas was 20 units (1915m), over a background of 1-2 units.

13th June 1983. Drilled 12 $\frac{1}{4}$ " hole to 2062m. Flow-checked drill-breaks at 2016, 2025 and 2034m (all negative). Pulled the bit at 2062m due to low ROP'S (bit was graded 8-4- $\frac{1}{8}$). Survey result was 1 $\frac{1}{2}$ ^o. RIH with an HTC J22 (12 $\frac{1}{4}$ ", 3x15 jets), reaming to bottom. Trip/reaming gas was 1-21-3 units. Drilled ahead in the Latrobe formation to 2153m. Made flow-checks at 2067 and 2081m (no flow). Maximum gas was 96 units (from Coal at 2015m), over a BG of 2 units. Drill rates varied from around 5m/hr in the shaley siltstones and dolomitic sandstones to 50m/hr in the sandstones.

14th June 1983. Drilled ahead to 2372m. Maximum gas was 26 units from a coal at 2190m; and the BG was 2-3 units. ROP'S ranged from 4-5m/hr in the shaley siltstone sections to 40-60m/hr in the Coal and Sandstone sections.

15th June 1983. Drilled ahead to 2477.7m, at which point the bit was pulled due to low ROP'S. Maximum gas was 5 units (2325m);

and the BG was 1-2 units. This depth was nominated as the intermediate logging point. Schlumberger ran the following tool:

DLL-MSFL-GR

16th June 1983. Schlumberger ran the following logs:

FDC-CNL-GR
RFT NO. 1 (pretest run)

17th June 1983. Schlumberger ran further RFT'S:

No. 2 Gas and condensate recovered from 1838.5m
No. 3 Formation water recovered from 1934.1m
No. 4 Formation water recovered from 1879m

(The RFT tool became snagged temporarily in the stack on run No. 4). Made a short wiper trip (5 stands) to clean out the BOP stack.

18th June 1983. Schlumberger ran RFT No. 5 (2013m, water) and No. 6 (1843m, oil, gas and water). Tested the stack. RIH with Bit No. 7 (HTC J22, 12¼", 3x15). Encountered a bridge 5 stands from bottom (around 2335m). Drilled to 2515m. Maximum gas was 3 units, over a background of 0-1 units.

19th June 1983. Drilled 12¼" hole to 2636m, where the bit was pulled due to excessive torque. A flow check was made at 2617m, following a drill-break, but there was no flow. Gas levels remained low today around 0-1 units with the largest peak of 6 units coming from coal at 2563m.

20th June 1983. Ran back in the hole with a J33 (12¼", 3x15). Drilled ahead to 2733m, through the Latrobe Group, with ROP'S varying from 3-18m/hr. Background gas was low, around 1 unit, and the maximum gas peak was 4 units.

21st June 1983. Drilled ahead to 2840m. Beds of shale slowed the drilling down to 2m/hr at times. Maximum gas was 8 units (2790m, Coal), over a background of 0-2 units.

22nd June 1983. Drilled to 2901m. Pulled the bit (after 52 hours of on-bottom drilling). Survey was 3°; the bit was graded 5-8¼. RIH with Bit No. 9 (HTC J33, 12¼", 3x15). Reamed from 2881m-2891m. Maximum drill gas was 9 units from Coal at 2863m, and the BG was 1-2 units.

23rd June 1983. Continued reaming to 2901m, then drilled ahead to 3015m. Maximum gas was 42 units (from Coal at 2944m) and BG was 2-4 units.

24th June 1983. Drilled to T.D. at 3021m. Circulated bottoms-up and POOH to run the following Schlumberger logs:

HRT (1700m-2400m)
DLL-MSFL-GR (3018m-2400m)
LDL-CNL-GR (3019m-1800m)
BHC-CAR-GR (3019m-789m)
HDT (3018m-1700m)
WST (19 levels)
RFT No. 7 (2018m) } 25th June 1983

26th June 1983. Schlumberger completed the logging suite with

CST Nos 1, 2, & 3 (153 shot and 137 recovered)

The plug and abandon program was started with a lower plug set at 2060m and a second at 1900m. Circulating at 1680m no cement was visible in returns.

27th June 1983. RIH, the second plug was tagged at 1710m prior to a third plug being set at 842m. Testing the 3rd plug to 1500 psi, a bridge plug was then set at 645m and the 13-3/8" casing was cut at 185m and laid down. A final plug was then set at 214m after connecting the cement lines.

28th June 1983. Displacing the riser and flushing the choke and kill lines, the slip joint was collapsed after testing the last plug to 500 psi for 15 mins. Unlatching the stack, the BOP's and riser were pulled to the surface. RIH with cutting assembly the 20" casing was cut at 85m.

29th June 1983. The pile joint and guide base were pulled, and set on the spider beams. Waited on work boats to pull anchors.

30th June 1983. Waiting on work boats to arrive and then waited on weather to pull anchors.

1st July 1983. Anchors were finally pulled and tow commenced to location for SNAPPER NO. 4. Well duration (anchors down to anchors up) was 29 days.

4. LITHOLOGY AND CORE-O-GRAPHS

LITHOLOGICAL SUMMARY

Gippsland Limestone

The top part of the Gippsland Limestone was composed of a white to light grey, calcarenite, moderately sorted Biosparite. This part included abundant microfossils of common Bryozoa, Foramenifera, Octacodia, Gastropoda and shell fragments. Common throughout this section were Lithic fragments and loose quartz grains.

With depth the Gippsland Limestone became progressively more clayey. At 600m-650m, clay content was around fifty percent.

The lower part of the Gippsland Limestone became a medium grey to medium dark grey, very soft to sticky calcilutite. Carbonaceous flecks were common as was also glauconite and assorted microfossils.

Lakes Entrance Formation

Composed throughout by a Calcareous Siltstone, and Calcareous Claystone. The Calcareous Siltstone was typically light to medium grey, soft to firm, and very calcareous. Minor fossils and pyrite were common. The Calcareous Claystone was medium grey to light grey, very soft to soft, and sticky; also very calcareous. Glauconite was in evidence throughout the Calcareous Claystone.

Gas throughout the unit remained between 1 and 5 units, composed principally of C₁.

Latrobe Group

Top part of the Latrobe Group was dominated by three main units, a Sandstone, Siltstone and Coal.

Sandstone was generally clear, to milky, very coarse grained, subangular to sub-rounded, moderately well sorted, with occasional argillaceous matrix. There was an orange-white fluorescence, with a fast streaming milky white cut, - this produced a dull brown residue.

The Coal was predominantly black, soft-firm, brittle and vitreous. Siltstone was light to medium grey, very argillaceous, firm, moderately calcareous, with traces of Foramenifera.

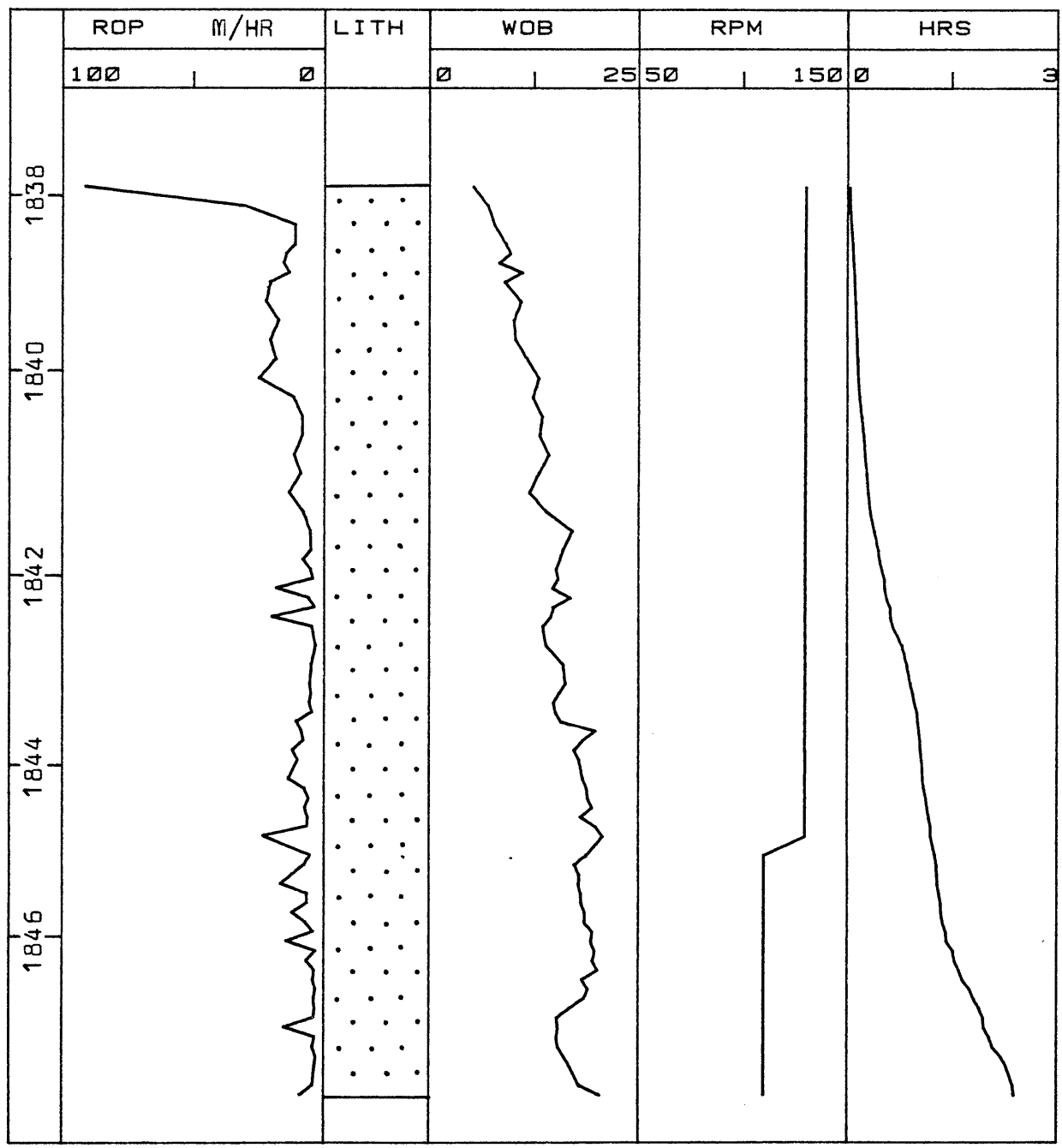
Three cores were cut in this section of the Latrobe Group. The gas varied from 5-60 units, composed of C₁ through to C₆.

Middle Latrobe Group became essentially a Sandstone and a Siltstone, with minor coals. The Sandstone remained clear to transparent, medium to very coarse, sub angular, to sub-rounded. This unit was also dominated by Sandstone aggregates, which were clear, very fine to medium grained, well sorted, friable, dolomitic cemented - and with a dull yellow fluorescence: no cut. The Siltstone was medium dark brown to grey, carbonaceous, argillaceous, non calcareous, sub-fissile to blocky, firm to occasionally soft. A minor shale was also present, this consisted of a medium to light grey, firm to soft, predominantly fissile, with carbonaceous inclusions.

Lower Latrobe Group consisted of Sandstones and Siltstones. The Siltstone was essentially the same as described for the middle Latrobe. The Sandstone was predominantly clear to translucent, medium to coarse grained, sub-angular to sub-rounded, and moderately well sorted. The more friable samples showed a good visual porosity. The Sand showed a trace of white to yellow fluorescence, with slow streaming cut, and slow to faint crush cut. Gas in this Lower section remained at 1-5 units, composed of C₁ to C₄.

CORE-O-GRAPH

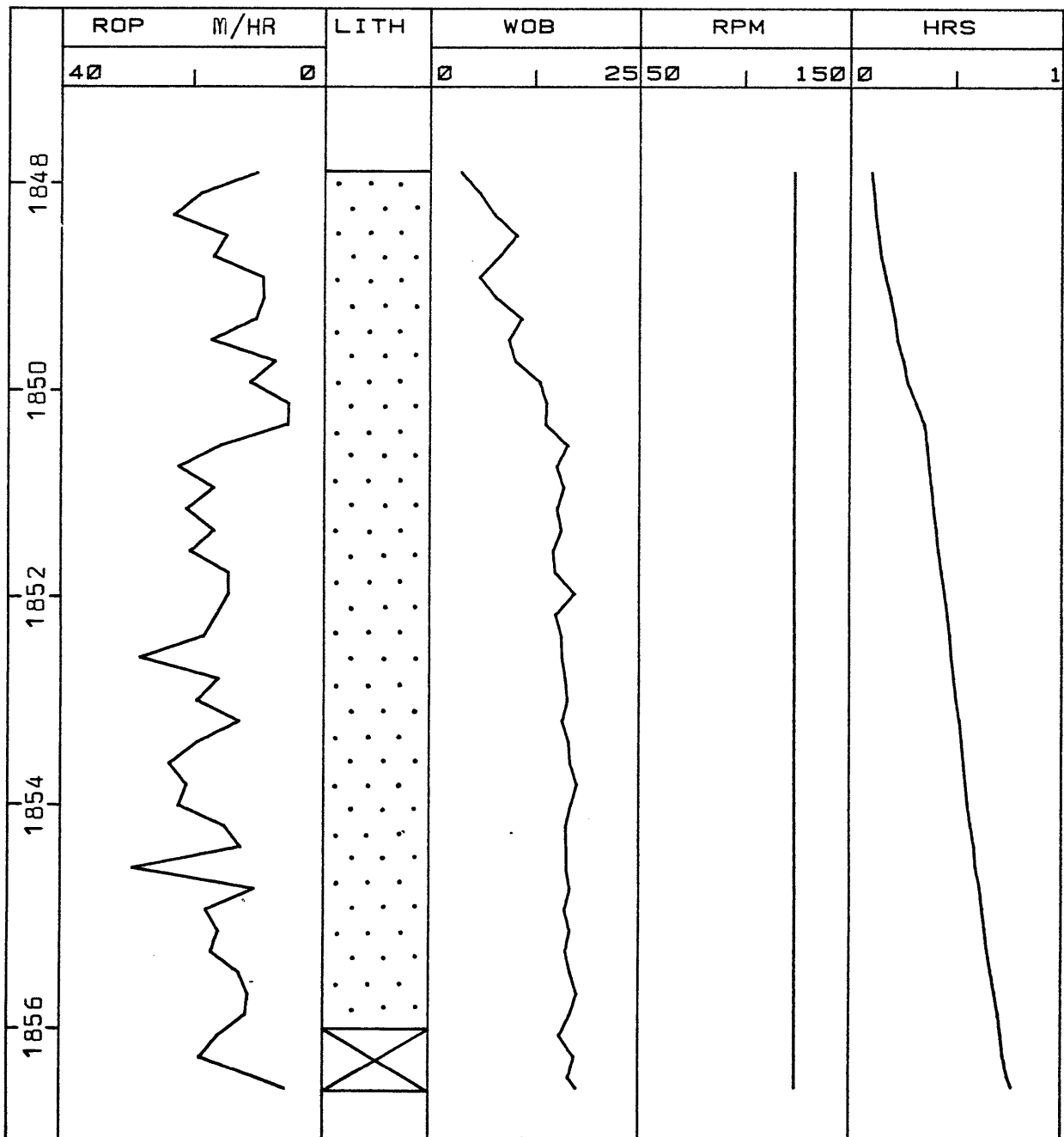
CLIENT:	ESSO AUSTRALIA LTD
WELL:	LUDERICK NO. 1
CORE NO.:	1
INTERVAL CORED FROM	1837.9m. TO 1847.5m.
CUT: 9.6 m.	RECOVERED: 9.6m. (100.0%)
FORMATION:	LATROBE GROUP
BIT MAKE & TYPE:	CHRIS RC4
CORE BARREL SIZE:	6.75in. x 4.75in. x 9.83m.
BIT SIZE: 9.88	MUD WT.: 9.2



18, JEWITZ

CORE-O-GRAPH

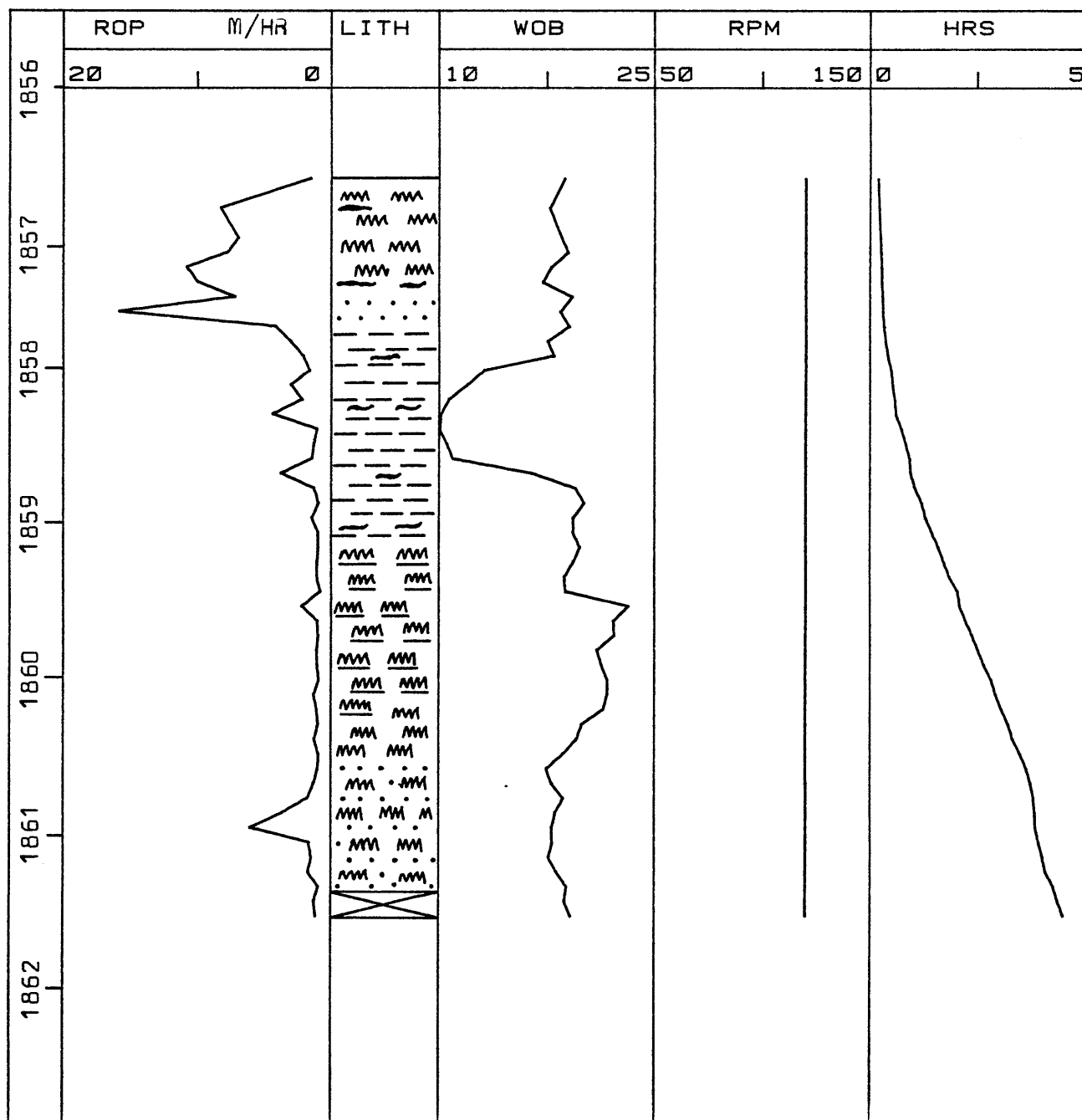
CLIENT:	ESSO AUSTRALIA LTD
WELL:	LUDERICK NO. 1
CORE NO.:	2
INTERVAL CORED FROM	1847.5m. TO 1856.5m.
CUT: 9.0 m.	RECOVERED: 8.5m. (94.4%)
FORMATION:	LATROBE GROUP
BIT MAKE & TYPE:	CHRIS RC4
CORE BARREL SIZE:	6.75in. x 4.75in. x 9.83m.
BIT SIZE: 9.88	MUD WT.: 9.2



18, JEWETT

CORE-O-GRAPH

CLIENT: ESSO AUSTRALIA LTD
 WELL: LUDERICK NO. 1
 CORE NO.: 3
 INTERVAL CORED FROM: 1856.5m. TO 1861.6m.
 CUT: 5.1 m RECOVERED: 4.9m. (96.1%)
 FORMATION: LATROBE GROUP
 BIT MAKE & TYPE: CHRIS RC4
 CORE BARREL SIZE: 6.75in. x 4.75in. x 9.83m.
 BIT SIZE: 9.88" MUD WT.: 9.2



J. J. J. J.

5. EXTENDED SERVICE PACKAGE

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 programs for the 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 the conclusion log, therefore the information may be modified by results from formation drill stem tests, data from adjacent wells, kicks, R.F.T.'s, and formation breakdown tests.

CORE LAB 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 :

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

Deviations from the normal "dc"s 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 "dc"s 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 "dc"s 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 liquid density column.

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, break-even analysis, formation pore pressure, mud density in and formation fracture pressure. A Geo-plot is included in this report, at a scale of 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 semi-log paper is used, with a vertical scale of 1:10000. 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 metres.

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.

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, recorder and digital display.
7. Digital depth counter.
8. 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 tacho-generator and recorder.
7. Stand-pipe pump pressure transducer and recorder.
8. Mud flow out sensor and recorder.
9. Mud temperature sensors and recorders (in and out).
10. Mud conductivity sensors and recorders (in and out).
11. Rotary torque sensor and recorder.
12. Shale density apparatus.
13. Hydrogen sulphide gas detector.
14. Carbon dioxide gas detector.

CORE LABORATORIES MONITORING EQUIPMENT

DEPTH

Depth registered every 0.2 metres and rate of penetration calculated each metre (or every 0.2m 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 a digital meter and recorder chart.

PUMP PRESSURE

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

MUD CONDUCTIVITY

A Balsbaugh electrode-less conductivity sensor contains two toroidally-wound coils and a thermistor enclosed in a donut-shaped housing. Current is induced into the mud by the primary coil and is sampled by the secondary coil, the amplitude of the current being directly proportional to the conductivity of the mud.

All the sensors are 5 to 24V DC powered with the exception of the air driven gas trap. Along with monitoring and maintaining the above equipment, Core Lab performed other duties...

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 liquid column.

6. ESP PLOT DISCUSSIONS AND CONCLUSIONS

ESP PLOT DISCUSSIONS AND CONCLUSIONS

LUDERICK NO. 1 was drilled in the Gippsland Basin and Core Laboratories field unit FL802 was used to monitor parameters associated with overpressure detection, observing the well to be normally pressured.

The "Drill Data Plot" is the primary pressure detection plot and shows the d'c exponent trend for the well. A good trend does not develop until around 750m, due mainly to lack of consolidation in the lithology and drilling being achieved mainly through jet extrusion rather than rotary action of the bit. Trending normally down to 850m, the d'c exponent still remains fairly scattered and a lateral shift at 850m corresponds with the lithological transition into a calcareous siltstone shortly after the change in hole size to 12 $\frac{1}{4}$ " from 17 $\frac{1}{2}$ ". A virtually vertical trend is established from 850m to 1500m due again to the much slower transitional trend from siltstone into claystone rather than the presence of any overpressure. Trending normally again from 1500m to 1750m in the Lower Lakes Entrance formation the d'c then becomes fairly scattered again as the Latrobe Group is penetrated. Being predominantly interbedded sand with siltstone and coal the lack of any homogeneous formation gives rise to this scattering effect, the d'c also being a tool primarily associated with shales.

No inference as to any overpressure is noticed from either ROP'S or background levels of gas as any changes in these could be directly attributed to a change in bit or lithology.

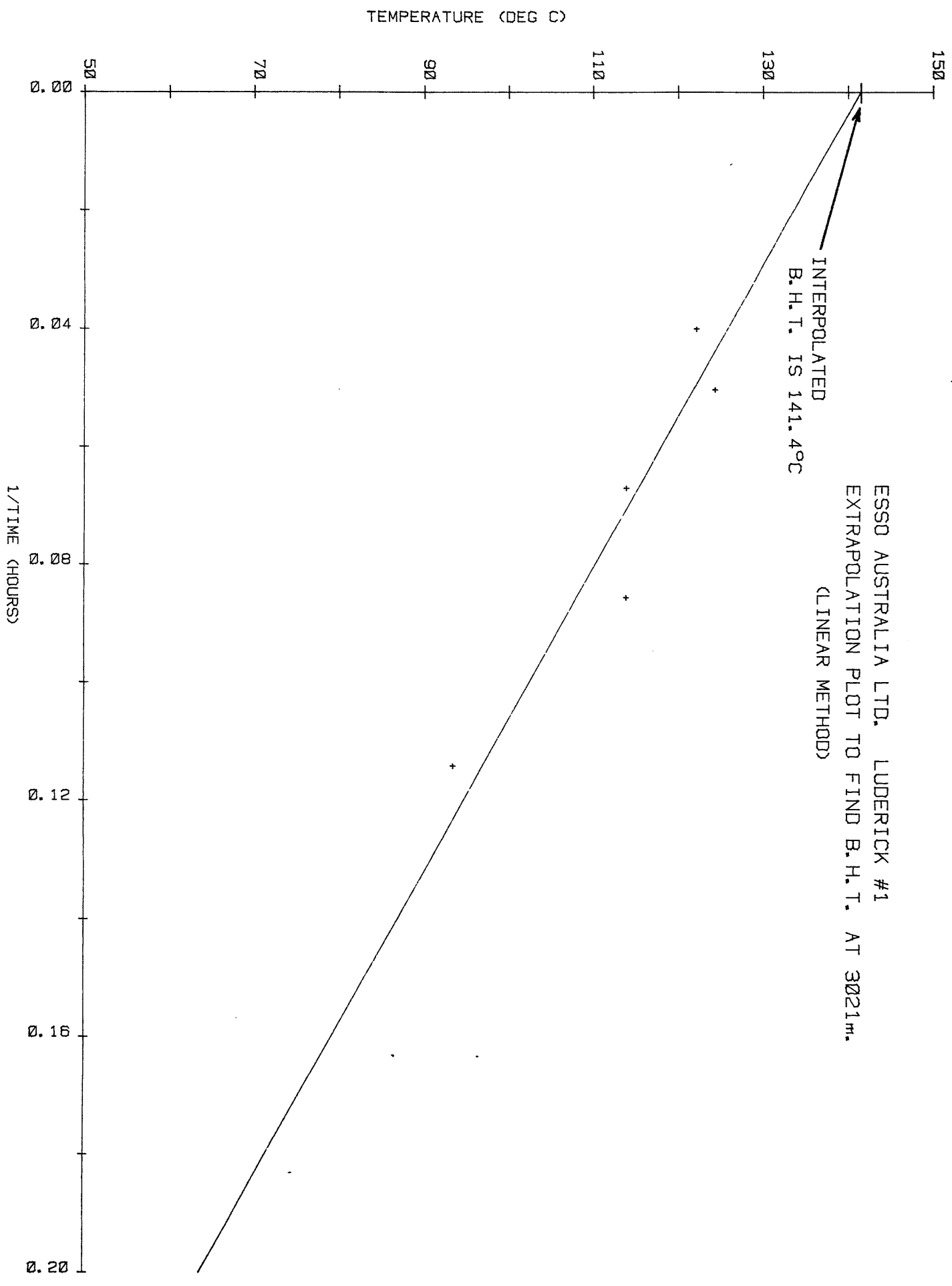
Schlumberger's RFT pressure tests verified the normally pressured nature of the well in indicating pore pressure of around 8.4 ppg.

A Temperature Plot drawn for LUDERICK NO. 1 failed to provide any conclusive information due to periodic treatment of the mud system. The thermal gradient of the well was calculated as 4.22 $^{\circ}$ /100m with a bottom-hole temperature at 3021m extrapolated to 141.4 $^{\circ}$ C.

The "Pressure Plot" presents the pressure conclusion log for the well, all formation being normally pressured at 8.4 ppg (MSL) EMW. The leak-off test performed 6m below the 13-3/8" casing shoe gave a leak-off when the equivalent pressure of 16.8 ppg was applied and this data was the basis of the fracture gradient drawn on the Pressure Plot with the shape of the curve based on U.S. Gulf Coast data. This fracture gradient is as true as can be drawn for the Gippsland Basin until more leak-off data is available.

Information obtained from Schlumberger's FDC and/or LDL tools was used in deriving the overburden gradient calculations and plot provided with this report.

7. B.H.T. ESTIMATION



ESSO AUSTRALIA LTD. LUDERICK #1
 EXTRAPOLATION PLOT TO FIND B.H.T. AT 3021m.
 (LINEAR METHOD)

CORE LAB
=====

B.H.T. INTERPOLATION (LINEAR 1/T METHOD) AT 3021 M

STRAIGHT LINE LEAST SQUARES BEST FIT

1/TIME ON A LINEAR SCALE AGAINST
TEMP (DEG C) ON A LINEAR SCALE

ENTERED DATA:

DATA SET #	TIME	1/TIME	TEMP (DEG C)	LOG:
1	8.75	0.1143	93.5	HRT
2	11.67	0.0857	114.0	DLL-MSFL-GR
3	14.92	0.0670	114.0	LDL-CNLG-GR
4	19.83	0.0504	124.4	BHC-GR
5	24.92	0.0401	122.2	HDT

COEFFICIENT & CONSTANT:

$Y = m.X + c$ where $m = -3.8883450E 02$ and $c = 1.4142867E 02$

INTERPOLATED DATA:

1/TIME	TEMP (DEG C)
0.0000	141.4

"TIME" is the time since circulation stopped

CORE LAB
=====

B.H.T. INTERPOLATION (HORNER METHOD) AT 3021 M

STRAIGHT LINE LEAST SQUARES BEST FIT

(T+t)/T ON A LOGARITHMIC SCALE AGAINST
TEMP (DEG C) ON A LINEAR SCALE

ENTERED DATA:

DATA SET #	TIME	HORNER TIME (T+t)/T	TEMP (DEG C)	LOG:
1	8.75	1.2000	93.5	HRT
2	11.67	1.1500	114.0	DLL-MSFL-GR
3	14.92	1.1173	114.0	LDL-CNLG-GR
4	19.83	1.0882	124.4	BHC-GR
5	24.92	1.0702	122.2	HDT

(t=1.75)

COEFFICIENT & CONSTANT:

$Y = m \cdot \log(X) + c$ where $m = -5.7766289E 02$ and $c = 1.4299514E 02$

INTERPOLATED DATA:

(T+t)/T	TEMP (DEG C)
1.0000	143.0

T = Time since circulation stopped
t = Time of circulation on bottom

8. OVERBURDEN GRADIENT CALCULATIONS AND PLOT

OVERBURDEN GRADIENT CALCULATIONS

DEPTHmetres

BULK DENSITYgm/cc

OVERBURDEN PRESSURE INCREMENT. .psi

CUMULATIVE OVERBURDEN PRESSURE .psi

OVERBURDEN PRESSURE GRADIENT . .psi/ft

OVERBURDEN EQUIVALENT DENSITY. .Pounds per gallon

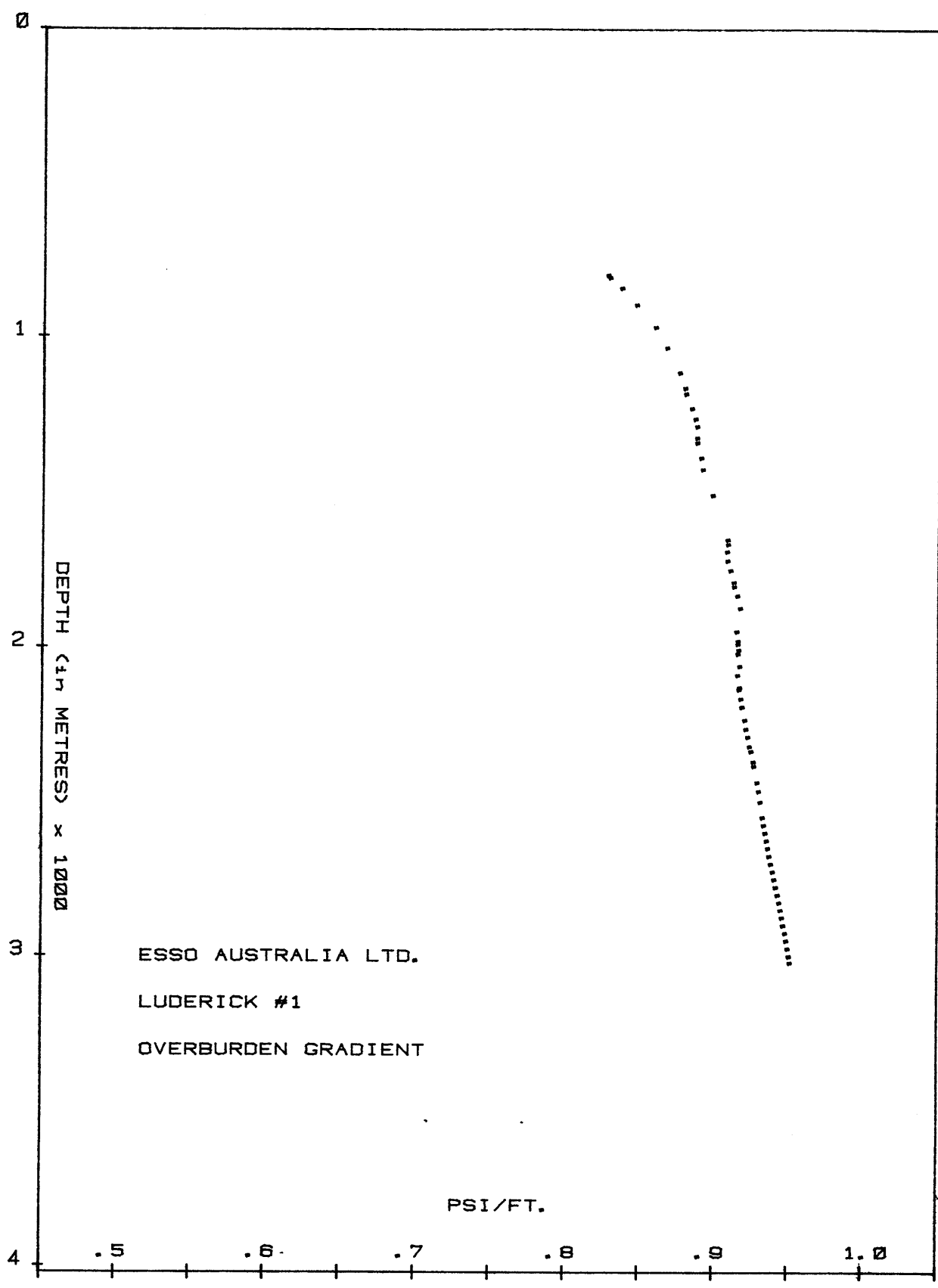
BULK DENSITY TAKEN FROM AVERAGED F.D.C. LOG, OR FROM SONIC
LOG FOR SECTIONS WHERE THE F.D.C. LOG IS NOT AVAILABLE.

OVERBURDEN GRADIENT CALCULATIONS

=====

DEPTH from	DEPTH to	AVR. BULK DENSITY	O/BURDEN INC.	O/BURDEN CUMM.	O/BURDEN GRAD.	O/BURDEN GRAD.
metres	metres	gm/cc	psi	psi	psi/ft	ppg
0	74	1.02	107.23	107.23	0.442	8.49
74	800	2.00	2062.71	2169.94	0.827	15.90
800	808	2.20	25.00	2194.94	0.828	15.92
808	842	2.37	114.47	2309.41	0.836	16.08
842	897	2.31	180.49	2489.90	0.846	16.27
897	969	2.35	240.37	2730.26	0.859	16.52
969	1035	2.26	211.90	2942.16	0.866	16.66
1035	1115	2.28	259.12	3201.28	0.875	16.83
1115	1164	2.20	153.14	3354.42	0.878	16.89
1164	1182	2.11	53.95	3408.37	0.879	16.90
1182	1229	2.27	151.56	3559.94	0.883	16.98
1229	1263	2.25	108.68	3668.61	0.885	17.03
1263	1287	2.18	74.33	3742.94	0.886	17.05
1287	1323	2.05	104.84	3847.78	0.886	17.05
1323	1338	2.07	44.11	3891.89	0.887	17.05
1338	1388	2.22	157.69	4049.57	0.889	17.10
1388	1425	2.14	112.48	4162.06	0.890	17.12
1425	1507	2.35	273.75	4435.81	0.897	17.25
1507	1651	2.35	480.73	4916.54	0.908	17.46
1651	1665	2.15	42.76	4959.30	0.908	17.46
1665	1689	2.00	68.19	5027.49	0.907	17.45
1689	1718	2.14	88.16	5115.65	0.908	17.45
1718	1750	2.35	106.83	5222.48	0.910	17.49
1750	1788	2.34	126.32	5348.80	0.912	17.53
1788	1802	2.23	44.35	5393.15	0.912	17.54
1802	1832	2.42	103.14	5496.28	0.914	17.59
1832	1872	2.32	131.83	5628.12	0.916	17.62
1872	1948	1.98	213.77	5841.89	0.914	17.58
1948	1979	2.22	97.77	5939.65	0.915	17.59
1979	1988	2.10	26.85	5966.50	0.915	17.59
1988	2008	2.23	63.36	6029.86	0.915	17.60
2008	2020	1.93	32.90	6062.76	0.915	17.59
2020	2060	2.25	127.85	6190.62	0.916	17.61
2060	2090	1.89	80.55	6271.17	0.915	17.59
2090	2131	2.26	131.63	6402.80	0.916	17.61
2131	2137	1.88	16.02	6418.82	0.916	17.61
2137	2167	2.32	98.87	6517.70	0.917	17.63
2167	2193	2.31	85.32	6603.02	0.918	17.65
2193	2235	2.35	140.21	6743.23	0.920	17.68
2235	2264	2.28	93.93	6837.16	0.920	17.70
2264	2290	2.38	87.91	6925.07	0.922	17.73
2290	2320	2.36	100.58	7025.65	0.923	17.75
2320	2336	2.46	55.91	7081.56	0.924	17.77
2336	2370	2.39	115.44	7197.00	0.926	17.80
2370	2384	2.29	45.54	7242.54	0.926	17.81

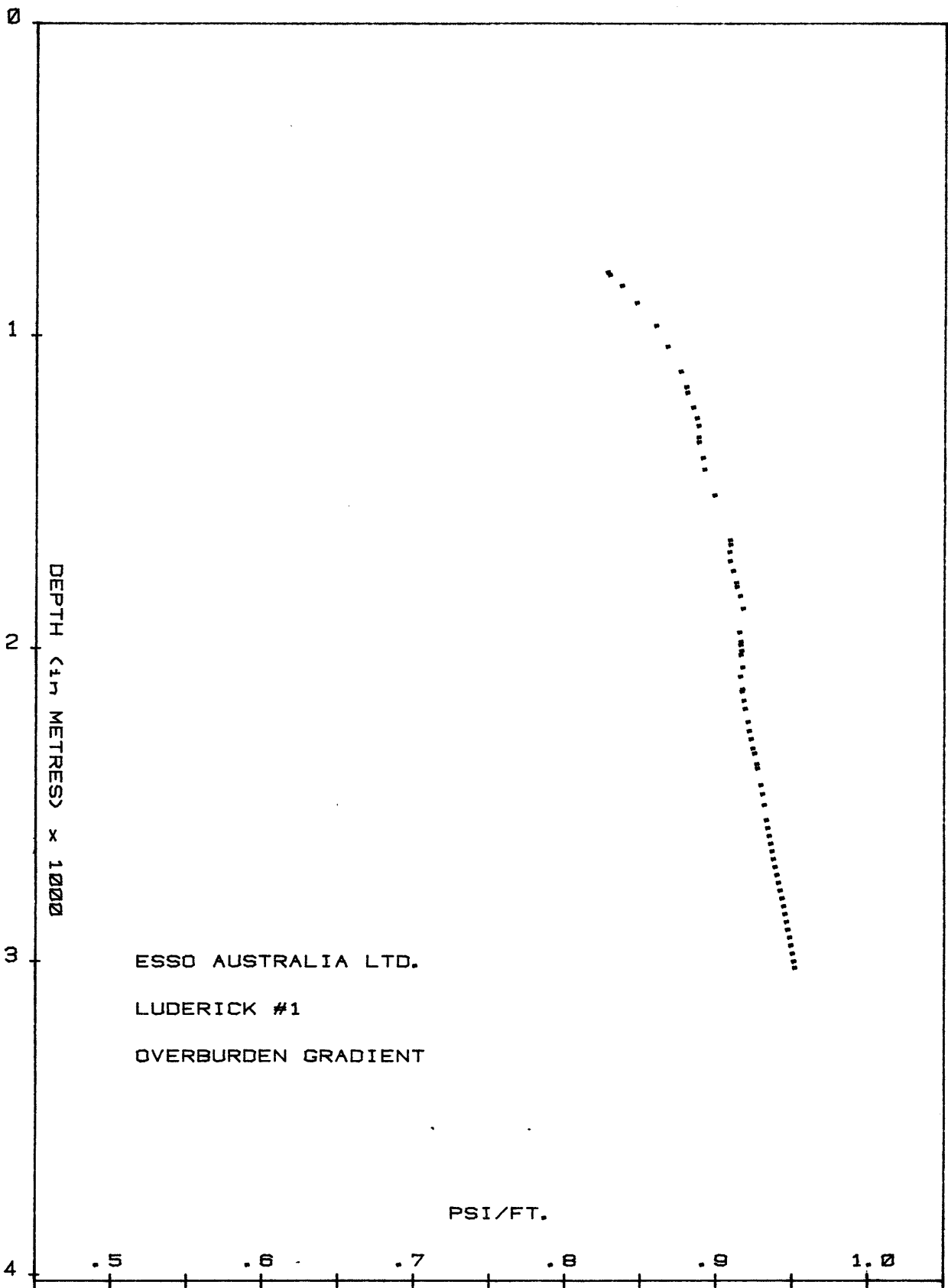
DEPTH from	DEPTH to	AVR. BULK DENSITY	O/BURDEN INC.	O/BURDEN CUMM.	O/BURDEN GRAD.	O/BURDEN GRAD.
metres	metres	gm/cc	psi	psi	psi/ft	ppg
2384	2437	2.38	179.19	7421.74	0.928	17.85
2437	2466	2.36	97.23	7518.96	0.929	17.87
2466	2500	2.33	112.54	7631.50	0.930	17.89
2500	2550	2.32	164.79	7796.29	0.932	17.92
2550	2575	2.35	83.46	7879.75	0.933	17.94
2575	2600	2.42	85.95	7965.70	0.934	17.96
2600	2625	2.38	84.53	8050.22	0.935	17.98
2625	2650	2.37	84.17	8134.39	0.936	17.99
2650	2675	2.41	85.59	8219.99	0.937	18.01
2675	2700	2.40	85.24	8305.22	0.938	18.03
2700	2725	2.48	88.08	8393.30	0.939	18.05
2725	2750	2.44	86.66	8479.96	0.940	18.07
2750	2775	2.42	85.95	8565.90	0.941	18.09
2775	2800	2.50	88.79	8654.69	0.942	18.12
2800	2825	2.45	87.01	8741.70	0.943	18.14
2825	2850	2.44	86.66	8828.36	0.944	18.16
2850	2875	2.45	87.01	8915.37	0.945	18.18
2875	2900	2.40	85.24	9000.61	0.946	18.19
2900	2925	2.53	89.85	9090.46	0.947	18.22
2925	2950	2.44	86.66	9177.11	0.948	18.23
2950	2975	2.45	87.01	9264.13	0.949	18.25
2975	3000	2.43	86.30	9350.43	0.950	18.27
3000	3021	2.42	72.19	9422.62	0.951	18.28



ESSO AUSTRALIA LTD.
LUDERICK #1
OVERBURDEN GRADIENT

PSI/FT.

latimer '81



ESSO AUSTRALIA LTD.
LUDERICK #1
OVERBURDEN GRADIENT

PSI/FT.

latimer '81

9. GAS ANALYSES

CORE LAB

SIDEWALL CORE GAS ANALYSIS DATA SHEET

SHEET # 1

COMPANY ESSO AUSTRALIA LTD.LOGGING SUITE NO. 3 RUNS 1, 2WELL LUDERICK NO. 1

NQ	DEPTH	C 1	C 2	C 3	C 4	C 5	C 6	COMMENTS
	M	PPM	PPM	PPM	PPM	PPM	PPM	
4	2943.98	955	82	61	17	23	26	
5	2935.02	2964	344	167	34	3	13	
6	2925.93	1357	197	106	17	6	13	
10	2853.98	91	25	30	4	12	TR	
11	2851.00	494	148	198	52	34	52	
12	2844.6	403	66	65	26	6	13	
13	2841.00	8320	1312	1216	275	171	156	
14	2834.00	221	49	53	26	6	13	
18	2757.00	247	45	46	22	6	13	
43	2100.5	169	25	38	4	12	TR	
45	2081.7	32448	5510	913				COAL
47	2022.5	988	689	1064	602	228	156	
48	2200.00	13	8	8				
49	2018.00	832	13120	18483	11558	4742	2496	
52	2012.9	0	0	0	0	0	0	
54	1918.00	806	262	114	34	40	65	
55	1978.00	312	33	38	23	23	39	
56	1953.00	64	8	15				
59	1937.00	0	0	0	0	0	0	
60	1934.00	45	6	3				
61	1928.00	4899	1114	213	TR			
62	1923.2	154	20	7				
64	1914.4	1031	287	68	9	10		
68	1896.00	206	49	7	8			
70	1886.9	206	49	7	9			
71	1883.5	77	16	15	TR			
72	1879.00	77	9	16	7			
74	1873.00	4332	393	136	26	11		
75	1870.00	206	65	45	8	11		
76	1837.00	180	270	1430	1735	872	526	
77	1835.00	309	622	1598	5687	2573	1684	
78	1833.00	154	393	3896	5687	3951	3473	
79	1831.00	618	393	487	156	114	263	
80	1827.9	515	270	365	173	46	105	
82	1823.5	77	213	197	173	68		

10. CORELAB DATA SHEETS

BIT RECORD

BIT SIZE Inches

BIT COST Australian dollars

JET SIZE Thirty-seconds of an inch

DEPTHS Metres

HOLE MADE Metres

DRILLING TIME Hours

AVERAGE ROP Metres/hour

AVERAGE COST/METRE Australian dollars

BIT CONDITION Teeth

Bearings

Gauge Inches



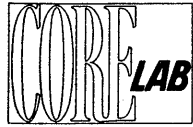
BIT RECORD

COMPANY ESSO AUSTRALIA LTD.
WELL LUDEKICK NO. 1

Sheet No. 1

0.	Bit No.	Make	Type	IADC Code	Size	Jets	Depth In	Hole Made	Drilling Time	On Bottom Hours	Turns K	Condition T B G	Remarks	COST
XR	RR 1	HTC	OSC 3AJ +26" HO	111 -	17 1/2 26	18/18/18 -	74	135	6	3.28	13.6	2-5-I	POOH FOR 20" CSG.	-
XR	2	HTC	OSC 3AJ	111	17 1/2	20/20/20	209	597	22	12.77	106.6	2-2-I	POOH TO LOG AND RUN 13-3/8"	4442
UK	3	HTC	X3A	114	12 1/4	16/16/18	806	945	46	22.01	196.1	4-6-I	POOH DUE TO LOW ROP.	2201
YS	4	HTC	J11	437	12 1/4	16/16/16	1751	86	9	7.07	48.6	1-1-I	POOH TO CUT CORE NO.1	6788
080Z	4	CHRIS	RC4	4	9-7/8	EQUIVALENT 15/15/14	1837.9	9.6	3 1/4	2.38	17.1	0.25	RERUN 20% WORN INITIALLY PULLED TO RETRIEVE CORE NO. 1	-
080Z	RC 4	CHRIS	RC4	4	9-7/8	EQUIVALENT 15/15/14	1847.5	9.0	3/4	3.07	22.3	0.30	PULLED TO CATCH CORE NO. 2.	-
080Z	RR 4	CHRIS	RC4	4	9-7/8	EQUIVALENT 15/15/14	1856.5	5.1	4 1/2	7.47	54.0	0.35	PULLED TO CATCH CORE NO. 3.	-
YS	5	HTC	J11	437	12 1/4	15/15/15	1861.6	200.4	26 1/4	22.32	147.7	8-4-1/8	OUT DUE TO LOW ROP'S.	6788
SK	6	HTC	J22	517	12 1/4	15/15/15	2062	415.6	47 1/2	40.25	180.9	3-3-1/8	OUT TO RUN INTERME- DIATE LOGS.	6788
VK	7	HTC	J22	517	12 1/4	15/15/15	2477.6	158.4	26 1/4	20.78	90.6	4-8-1/4	TORQUE INCREASED.	6788
BL	8	HTC	J33	537	12 1/4	15/15/15	2636	265	56 1/2	52.43	214.0	5-8-1/2	PULLED AFTER 52 HRS.	6637
YL	9	HTC	J33	537	12 1/4	15/15/15	2901	120	27 1/2	22.14	92.5	2-2-I	PULLED AT T.D.	6637

7520-487 (CL 1153)



BIT RECORD

COMPANY ESSO AUSTRALIA LTD.
 WELL LUDERICK NO. 1

Sheet No. 2

NO.	Bit No.	Make	Type	IADC Code	Size	Cost	Jets	Depth In	Depth Out	Hole Made	Drilling Time	On Bottom Hours	Turns K	Average ROP	Average Cost/ M	Condition T B G
2 XR	RR 1	HTC	OSC 3AJ +26" HO	111 -	17 1/2 26	-	18/18/18	74	209	135	6	3.28	13.6	41.2	178.44	2-5-I
9 XR	2	HTC	OSC 3AJ	111	17 1/2	4442	20/20/20	209	806	597	22	12.77	106.6	46.8	124.44	2-2-I
3 UK	3	HTC	X3A	114	12 1/4	2201	16/16/18	806	1751	945	46	22.01	196.1	42.9	126.69	4-6-I
7 YS	4	HTC	J11	437	12 1/4	6788	16/16/16	1751	1837.9	86	9	7.07	48.6	12.2	718.53	1-1-I
B 0802	4	CHRIS	RC4	4	9-7/8	-	EQUIVALENT 15/15/14	1837.9	1847.5	9.6	3 1/4	2.38	17.1	4.0	3657.86	0.25
B 0802	RR 4	CHRIS	RC4	4	9-7/8	-	EQUIVALENT 15/15/14	1847.5	1856.5	9.0	3/4	3.07	22.3	13.0	2045.26	0.30
B 0802	RR 4	CHRIS	RC4	4	9-7/8	-	EQUIVALENT 15/15/14	1856.5	1861.6	5.1	4 1/2	7.47	54.0	1.2	2392.50	0.35
5 YS	5	HTC	J11	437	12 1/4	6788	15/15/15	1861.6	2062.0	200.4	26 1/4	22.32	147.7	9.0	641.66	8-4-1/8
7 SK	6	HTC	J22	517	12 1/4	6788	15/15/15	2062.0	2477.6	415.6	47 1/2	40.25	180.9	10.3	501.56	3-3-1/8
7 VK	7	HTC	J22	517	12 1/4	6788	15/15/15	2477.6	2636.0	158.4	26 1/4	20.78	90.6	7.6	802.70	4-8-1/4
6 BL	8	HTC	J33	537	12 1/4	6637	15/15/15	2636.0	2901.0	265.0	56 1/2	52.43	214.0	5.1	995.35	5-8-1/4
9 YL	9	HTC	J33	537	12 1/4	6637	15/15/15	2901.0	3021.0	120.0	27 1/2	22.14	92.5	5.4	1134.64	2-2-I

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. c.c.

CAKE THICKNESS Thirty-seconds of an inch

SALINITY : Ca/Cl . . . ppm

SOLIDS/SAND/OIL. . . . Percentage



MUD INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.
WELL LUDEKICK NO. 1

Sheet No. 1

DEPTH (M)		290	775	806	975	1646	1838
DATE	4/6/83	5/6/83	6/6/83	7/6/83	8/6/83	9/6/83	10/6/83
TIME		22:45	14:00	15:00	14:00	11:00	11:30
WEIGHT		8.7	9.0	9.2+	9.0	9.2	9.2+
FUNNEL VISCOSITY	S	2/3	2/11	3/14	3/11	5/27	5/16
PV/YP	E	.49/.24	.21/3.59	.23/3.94	.28/2.44	.21/8.67	.31/3.08
N/K	A	1/2	5/8	3/8	2/6	12/15	6/14
GEL: INITIAL/10 MIN		8.9	9.3	9.2	10.6	10.2	10.5
pH	W		-/-	-/-	-/-	23/-	7.6/18.2
FILTRATE: API/API HTHP	A		-	-	-	-	1
CAKE	T		16000	14000	18000	15000	17000
SALINITY (PPM)	E		-	TR	TR	TR	TR
SAND	R		5	6	5	6	6
SOLIDS			0	0	0	0	0
OIL							

REMARKS:

SPUDED CEMENTED LOG DRILLED 12 $\frac{1}{4}$ " HOLE
20" CSG
DRILLED 17 $\frac{1}{2}$ " HOLE RAN 13-3/8" CASING CUT CORE NO. 1

DEPTH (M)	1856	1907	2130	2256	2477	2477	2477
DATE	11/6/83	12/6/83	13/6/83	14/6/83	15/6/83	16/6/83	17/6/83
TIME	16:00	10:30	22:00	09:30	16:30	23:00	23:30
WEIGHT	9.2	9.2	9.2	9.2+	9.2+	9.3	9.1+
FUNNEL VISCOSITY	40	44	41	45	40	42	43
PV/YP	5/14	6/17	8/14	6/23	8/16	12/13	7/13
N/K	.34/2.33	.33/2.86	.45/1.35	.27/5.35	.41/1.81	.57/.74	.43/1.35
GEL: INITIAL/10 MIN	4/13	11/28	12/30	22/30	10/20	3/8	8/15
pH	10.4	10.6	10.5	10.4	10.6	9.6	10.5
FILTRATE: API/API HTHP	8.6/19.2	9.0/19.2	8.6/19.0	9.8/20.2	7.6/15.2	7.6/15.2	9.0/18.6
CAKE	1	1	1	1	1	1	1
SALINITY (PPM)	18000	18000	19000	17000	17000	18000	14000
SAND	TR	TR	TR	$\frac{1}{4}$	TR	TR	TR
SOLIDS	6	6	6	6	6	7	6
OIL	0	0	0	0	0	0	0
NITRATES (PPM)	160	180	200	160	200	160	80

REMARKS:

CUT CORE NO. 2 & 3 DRILLED 12 $\frac{1}{4}$ " HOLE INTERMEDIATE LOGS



MUD INFORMATION SHEET

ESSO AUSTRALIA LTD.

COMPANY _____
WELL LUDERICK NO. 1

Sheet No. 2

DEPTH (M)	2496	2585	2712	2818	2901	3008	3021
DATE	18/6/83	19/6/83	20/6/83	21/6/83	22/6/83	23/6/83	24/6/83
TIME	22:00	11:00	18:30	19:00	21:00	21:15	02:00
WEIGHT	9.3	9.2	9.2	9.2	9.2	9.2	9.2
FUNNEL VISCOSITY	43	40	43	39	40	41	40
PV/YP	6/14	7/15	9/23	8/18	11/24	8/22	10/20
N/K	.38/1.89	.40/1.83	.36/3.45	.39/2.33	.39/3.00	.34/3.58	.41/2.26
GEL: INITIAL/10 MIN	7/20	6/21	15/28	18/22	14/20	18/20	18/28
pH	10.6	10.5	10.7	10.5	10.4	10.5	10.4
FILTRATE: API/API HTHP	9.2/19.0	9.0/18.8	9.2/19.8	9.7/19.8	9.0/16.4	8.8/8.1	9.3/18.7
CAKE	1	1	1	1	1	1	1
SALINITY (PPM)	17000	18000	21000	20500	20000	20000	21000
SAND	TR	TR	TR	TR	TR	TR	TR
SOLIDS	6	6	4.5	4.5	4.5	4.5	4.5
OIL	0	0	0	0	0	0	0
NITRATES (PPM)	200	200	200	200	200	200	200

REMARKS:

DRILLED 12 1/4" HOLE

T.D. AT 01:18
HOURS 24/6/83

DEPTH (M)	3021	3021					
DATE	25/6/83	26/6/83	M				
TIME	13:00	13:30	U				
WEIGHT	9.2	9.2	D				
FUNNEL VISCOSITY	41	42					
PV/YP	8/18	12/26	T				
N/K	.39/2.33	.40/3.22	A				
GEL: INITIAL/10 MIN	14/20	10/22	N				
pH	10.1	10.0	K				
FILTRATE: API/API HTHP	9.4/-	9.7/-	S				
CAKE	1	1					
SALINITY (PPM)	21000	21000	E				
SAND	TR	TR	M				
SOLIDS	4.5	4.5	P				
OIL	-	-	T				
NITRATES (PPM)	200	-	Y				

REMARKS:

SCHLUMBERGER P & A
LOGGING

BOP & RISER TO SURFACE ON
28/6/83.
ANCHORS FINALLY PULLED AND RIG
ON TOW 1/7/83.

PORE PRESSURE DATA SHEET

COMPANY : ESSO AUSTRALIA LTD.

DATA FROM RFT'S

WELL : LUDERICK No.1

DEPTH (FROM RKB)	DEPTH (FROM MSL)	PORE PRESS	PORE PRESS GRADIENT E.M.W. (MSL)	PORE PRESS GRADIENT
METRES	TVD. METRES	PSIA	PPG	PSI/M
2400.0	2378.8	3400.40	8.379	1.429
2385.0	2363.8	3378.50	8.378	1.429
2370.0	2348.8	3357.40	8.379	1.429
2364.0	2342.8	3348.80	8.379	1.429
2116.7	2095.6	2996.40	8.381	1.430
2108.8	2087.7	2983.80	8.378	1.429
2048.0	2026.9	2896.30	8.376	1.429
2037.5	2016.4	2883.10	8.381	1.430
2029.2	2008.1	2871.20	8.381	1.430
2018.5	1997.4	2863.60	8.404	1.434
1995.5	1974.4	2825.10	8.387	1.431
1990.5	1969.4	2817.90	8.387	1.431
1967.0	1945.9	2783.70	8.385	1.431
1960.0	1938.9	2774.10	8.387	1.431
1955.8	1934.7	2767.80	8.386	1.431
1948.5	1927.4	2757.40	8.386	1.431
1937.5	1916.4	2742.10	8.387	1.431
1934.0	1912.9	2738.10	8.390	1.431
1923.4	1902.3	2721.70	8.386	1.431
1909.5	1888.4	2702.20	8.388	1.431
1896.2	1875.1	2683.20	8.388	1.431
1889.5	1868.4	2674.10	8.389	1.431
1885.5	1864.4	2669.00	8.391	1.432
1878.5	1857.4	2661.10	8.398	1.433
1871.8	1850.7	2649.40	8.391	1.432
1868.3	1847.2	2644.40	8.391	1.432
1861.2	1840.1	2636.90	8.400	1.433
1859.9	1838.8	2632.10	8.390	1.431
1852.0	1830.9	2620.90	8.391	1.431
1844.5	1823.4	2611.60	8.395	1.432
1839.5	1818.4	2608.40	8.408	1.434
1833.0	1811.9	2606.40	8.432	1.438
1823.5	1802.4	2589.00	8.420	1.436
1812.0	1790.9	2569.30	8.409	1.435
1838.5	1817.4	2608.30	8.412	1.435
1934.1	1913.0	2737.30	8.387	1.431
1878.6	1857.5	2660.00	8.394	1.432
1879.0	1857.9	2658.60	8.388	1.431
2018.5	1997.4	2864.60	8.407	1.434
2013.0	1991.9	2848.50	8.382	1.430

DEPTH (FROM RKB)	DEPTH (FROM MSL)	PORE PRESS	PORE PRESS GRADIENT E.M.W. (MSL)	PORE PRESS GRADIENT
METRES	TVD. METRES	PSIA	PPG	PSI/M
1843.0	1821.9	2609.90	8.397	1.433
2018.0	1996.9	2864.30	8.408	1.434

COMPANY : ESSO AUSTRALIA
LTD.

WELL : LUDERICK NO. 1

RUN No. : 2

PRESSURE GAUGE TYPE : HP



CHAMBER No.	1	2		
CHAMBER CAPACITY (L)	22.4	3.7		
CHOKE SIZE	.030	.020		
SEAT No.	2/36	2/36		
DEPTH (M) (from RKB)	1838.5	1838.5		
A RECORDING TIMES				
TOOL SET	03:39:20	-		
PRETEST OPEN	03:39:20	-		
TIME OPEN	03:43:20	03:53:00		
CHAMBER OPEN	03:43:30	03:53:30		
CHAMBER FULL	03:50:00	03:55:55		
FILL TIME	06:30	02:25		
START BUILD UP	03:50:00	03:55:55		
FINISH BUILD UP	03:52:20	03:58:00		
BUILD UP TIME	02:20	02:05		
SEAL CHAMBER	03:52:20	03:58:00		
TOOL RETRACT	-	03:59:00		
TOTAL TIME	13 MINS	6 MINS		
B SAMPLE PRESSURES				
IHP (PSIA)	2958.7	-		
ISIP (PSIA)	2608.3	2607.9		
IFP (PSIA)	2571.0	2598.7		
FFP (PSIA)	2590.0	2599.2		
FSIP (PSIA)	2607.8	2607.9		
FHP (PSIA)	-	2956.6		
TEMP. CORR. ()				
COMMENTS				
C TEMPERATURE				
DEPTH TOOL REACHED(M)	1865	1865		
MAX. REC. TEMP. (°C)	76.7	76.7		
TIME CIRC. STOPPED	15/6 18:00	15/6 18:00		
TIME SINCE CIRC.	33.6	33.6		
D SAMPLE RECOVERY				
SURFACE PRESSURE (PSIG)	1650			
VOL. GAS (CUFT)	124.93			
VOL. OIL ()				
VOL. WATER ()				
VOL. FILTRATE ()				
VOL. CONDENSATE (CC)	784			
VOL. OTHER MUD (cc)	755			
E SAMPLE PROPERTIES				
(a) G	c1 (PPM)	303121		
A	c2 (PPM)	45270		
S	c3 (PPM)	24358		
	c4 (PPM)	6541		
C	c5 (PPM)	1051		
O	c6+ (PPM)	89		
M	CO ₂ (%)	0.7		
P	H ₂ S (PPM)	0		
(b) OIL PROPERTIES (CONDENSATE)				
DENSITY: (°API)	HYDROMETER	70		
	REFRACTOMETER	-		
REFRACTIVE INDEX		-		
COLOUR		CLEAR		
FLUORESCENCE		BLUE/WH		
G.O.R. (STB/MSCF)		39.4		
			OIL PROPERTIES CONT.	
			ODOUR	
			POUR POINT (°)	
			COMMENTS	
			(c) WATER PROPERTIES	
			RESISTIVITY ()	
			Cl (frm. resis.) ()	
			Cl (frm. titrat) ()	
			NO ₃ ()	
			pH	
			OTHER TRACERS ()	
			DENSITY ()	
			FLUORESCENCE	
			COLOUR	
			COMMENTS	
			(d) OTHER SAMPLE PROPERTIES	
			F MUD PROPERTIES	
			TYPE	SEAWATER GEL
			RESISTIVITY (M)	.218 @ 25°C
			Cl (frm. resis.) (PPM)	17000
			Cl (frm. titrat) (PPM)	18000
			NO ₃ Dr1d/1st. circ ()	
			pH	
			OTHER TRACERS ()	
			DENSITY ()	
			G GENERAL COMMENTS	
			THE LOWER CHAMBER WAS OPENED AT THE SURFACE, BUT THE UPPER CHAMBER WAS TRANSFERRED FOR ANALYSIS BY "FLOPETROL".	

COMPANY : ESSO AUSTRALIA WELL : LUDERICK NO. 1
LTD.

RUN No. : 3

PRESSURE GAUGE TYPE : HP



CHAMBER No.	1	2		
CHAMBER CAPACITY	22.4	3.7		
CHOKE SIZE	.030	.020		
SEAT No.	3/37	3/37		
DEPTH (M) (from RKB)	1934.1	1934.1		
A RECORDING TIMES			OIL PROPERTIES CONT.	
TOOL SET	09:11:06	-	ODOUR	
PRETEST OPEN	09:11:06	-	POUR POINT (°)	
TIME OPEN	09:15:06	09:24:55	COMMENTS	
CHAMBER OPEN	09:15:15	09:25:05	(c) WATER PROPERTIES	
CHAMBER FULL	09:20:42	09:27:11	RESISTIVITY (M)	.773@20°C .61@18°C
FILL TIME	05:27	02:06	Cl (frm. resis.) (PPM)	8200 10000
START BUILD UP	09:20:42	09:27:11	Cl (frm. titrat) (PPM)	4000 4000
FINISH BUILD UP	09:23:39	09:28:50	NO ₃ (PPM)	60 45
BUILD UP TIME	03:00	01:39	pH	7.5 7.1
SEAL CHAMBER	09:23:39	09:29:05	OTHER TRACERS	()
TOOL RETRACT	-	09:30:00	DENSITY ()	
TOTAL TIME	12:33	05:00	FLUORESCENCE	
B SAMPLE PRESSURES			COLOUR	
IHP (PSIA)	3104.8	-	COMMENTS	
ISIP (PSIA)	2737.3	2736.9	(d) OTHER SAMPLE PROPERTIES	
IFP (PSIA)	2343.6	2681.1		
FFP (PSIA)	2581.1	2681.4	F MUD PROPERTIES	
FSIP (PSIA)	2736.9	2737.0	TYPE	SEAWATER GEL
FHP (PSIA)	-	3103.0	RESISTIVITY (M)	.218@25°C
TEMP. CORR. ()			Cl (frm. resis.) (PPM)	17000
COMMENTS			Cl (frm. titrat) (PPM)	18000
C TEMPERATURE			NO ₃ Dr1d/1st. circ ()	
DEPTH TOOL REACHED (M)	1950	1950	pH	
MAX. REC. TEMP. (°C)	86.7	86.7	OTHER TRACERS	()
TIME CIRC. STOPPED	15/6 18:00	15/6 18:00	DENSITY ()	
TIME SINCE CIRC.	39:00:00	39:00:00	G GENERAL COMMENTS	
D SAMPLE RECOVERY			LOWER CHAMBER - NO OIL FILM SEEN UPPER CHAMBER - VERY THIN UNMEASURABLE OIL FILM OBSERVED; NO FLUORESCENCE.	
SURFACE PRESSURE (PSIG)	0	100		
VOL. GAS (CUFT)	0	0		
VOL. OIL ()				
VOL. WATER (LITRE)	21.3	3.7		
VOL. FILTRATE ()				
VOL. CONDENSATE ()				
E SAMPLE PROPERTIES				
(a) G	c1 ()			
A	c2 ()			
S	c3 ()			
	c4 ()			
G	c5 ()			
O	c6+ ()			
M	CO ₂ ()			
P	H ₂ S ()			
(b) OIL PROPERTIES				
DENSITY:	HYDROMETER			
()	REFRACTOMETER			
REFRACTIVE INDEX				
COLOUR				
FLUORESCENCE				
G.O.R. ()				

COMPANY : ESSO AUSTRALIA WELL : LUDERICK NO. 1
LTD.

RUN No. : 4

PRESSURE GAUGE TYPE : HP



CHAMBER No.	1	2		
CHAMBER CAPACITY (LITRES)	22.4	10.2		
CHOKE SIZE	.030	.020		
SEAT No.	4/38A	4/38A		
DEPTH (M) (from RKB)	1879	1879		
A RECORDING TIMES			OIL PROPERTIES CONT.	
TOOL SET	15:34:33	-	ODOUR	
PRETEST OPEN	15:34:33	-	POUR POINT (°)	
TIME OPEN	15:37:10	15:58:00	COMMENTS	
CHAMBER OPEN	15:37:15	15:58:10	(c)WATER PROPERTIES SLIGHTLY DIRTY	
CHAMBER FULL	15:48:15	16:40:10	RESISTIVITY ()	
FILL TIME	11:00	42:00	Cl (frm. resis.)()	
START BUILD UP	15:48:15	16:40:10	Cl (frm. titrat)()	
FINISH BUILD UP	15:56:55	16:48:50	NO ₃ ()	
BUILD UP TIME	08:40	08:40	pH	
SEAL CHAMBER	15:57:00	16:48:50	OTHER TRACERS	
TOOL RETRACT	-	16:49:00	()	
TOTAL TIME	01:52:00		DENSITY ()	
B SAMPLE PRESSURES			FLUORESCENCE	
IHP (PSIA)	3017.8	-	COLOUR	
ISIP (PSIA)	2658.6	2658.6	COMMENTS	
IFP (PSIA)	412	128	(d)OTHER SAMPLE PROPERTIES	
FFP (PSIA)	537	1686	F MUD PROPERTIES	
FSIP (PSIA)	2658.3	2657.2	TYPE	SEAWATER GEL
FHP (PSIA)	-	3017.4	RESISTIVITY (M)	.28@25°C
TEMP. CORR. ()			Cl (frm.resis.) (PPM)	28000
COMMENTS			Cl (frm.titrat) (PPM)	18000
C TEMPERATURE			NO ₃ Drld/1st.circ (PPM)	160
DEPTH TOOL REACHED(M)	1905	1905	pH	
MAX.REC.TEMP.(°)			OTHER TRACERS	
TIME CIRC. STOPPED	15/6 18:00	15/6 18:00	()	
TIME SINCE CIRC.	45.5 HRS	46 HRS	DENSITY ()	
D SAMPLE RECOVERY			G GENERAL COMMENTS	
SURFACE PRESSURE (PSIG)	0	0	THE FORMATION WATER RECOVERED FROM BOTH CHAMBERS CONTAINED A THIN TRACE OF OIL FILM, WHICH FLUORESCED A DIFFUSE, DULL, MILKY YELLOW-WHITE COLOUR.	
VOL. GAS (CUFT)	0.05	0		
VOL. OIL ()				
VOL. WATER (LITRE)	21.7	9.0		
VOL. FILTRATE ()				
VOL. CONDENSATE ()				
VOL. OTHER ()				
E SAMPLE PROPERTIES				
(a) G	c1 ()			
A	c2 ()			
S	c3 ()			
	c4 ()			
C	c5 ()			
O	c6+ ()			
M	CO ₂ ()			
P	H ₂ S ()			
(b) OIL PROPERTIES				
DENSITY:	HYDROMETER			
()	REFRACTOMETER			
REFRACTIVE INDEX				
COLOUR				
FLUORESCENCE				
G.O.R. ()				

COMPANY : ESSO AUSTRALIA WELL : LUDERICK NO. 1 LTD.

RUN No. : 5

PRESSURE GAUGE TYPE : HP



CHAMBER No.	1	2		
CHAMBER CAPACITY	22.4	3.7		
CHOKE SIZE	.030	.020		
SEAT No.	5/40	5/40		
DEPTH (M) (from RKB)	2013	2013		
A RECORDING TIMES			OIL PROPERTIES CONT.	
TOOL SET	00:29:30	-	ODOUR	
PRETEST OPEN	00:29:30	-	POUR POINT (°)	
TIME OPEN	00:37:12	00:54:38	COMMENTS	
CHAMBER OPEN	00:37:15	00:54:40	(c) WATER PROPERTIES	
CHAMBER FULL	00:49:50	00:57:40	RESISTIVITY (M)	.305@62°F .406@60°F
FILL TIME	12:35	03:00	Cl (frm. resis.)(PPM)	26000 18000
START BUILD UP	00:49:50	00:57:40	Cl (frm. titrat)(PPM)	10000 8000
FINISH BUILD UP	00:53:30	01:00:30	NO ₃ (PPM)	65 65
BUILD UP TIME	03:40	02:50	pH	8 7.5
SEAL CHAMBER	00:53:30	01:00:30	OTHER TRACERS	
TOOL RETRACT	-	01:02:40	DENSITY ()	
TOTAL TIME	24:00	08:00	FLUORESCENCE	
B SAMPLE PRESSURES			COLOUR	
IHP (PSIA)	3224.5	-	COMMENTS	
ISIP (PSIA)	2848.5	2849.0	(d) OTHER SAMPLE PROPERTIES	
IFP (PSIA)	164	1642		
FFP (PSIA)	1876	1992	F MUD PROPERTIES	
FSIP (PSIA)	2848.7	2848.5	TYPE	SEAWATER GEL
FHP (PSIA)	-	3225.3	RESISTIVITY (M)	.218@ 25°C
TEMP. CORR. ()			Cl (frm.resis.)(PPM)	28000
COMMENTS			Cl (frm.titrat)(ppm)	18000
C TEMPERATURE			NO ₃ Drl'd/1st.circ(PPM)	160
DEPTH TOOL REACHED(M)	2050	2050	pH	
MAX.REC.TEMP.(°C)	200	200	OTHER TRACERS	
TIME CIRC. STOPPED	15 18:00	15 18:00	DENSITY ()	
TIME SINCE CIRC.	54 HRS	54.5 HRS	G GENERAL COMMENTS	
D SAMPLE RECOVERY				
SURFACE PRESSURE(PSIG)	0	200		
VOL. GAS ()				
VOL. OIL ()				
VOL. WATER (LITRE)	21.8	3.7		
VOL. FILTRATE ()				
VOL. CONDENSATE ()				
VOL. OTHER ()		TR. SCUM		
E SAMPLE PROPERTIES				
(a) G	c1 ()			
A	c2 ()			
S	c3 ()			
	c4 ()			
C	c5 ()			
O	c6+ ()			
M	CO ₂ ()			
P	H ₂ S ()			
(b) OIL PROPERTIES				
DENSITY:	HYDROMETER			
()	REFRACTOMETER			
REFRACTIVE INDEX				
COLOUR				
FLUORESCENCE	DULL, DIFFUSE,	MILKY YELL-WH		
G.O.R. ()				

COMPANY : ESSO AUSTRALIA WELL : LUDERICK NO. 1
LTD.

RUN No. : 6

PRESSURE GAUGE TYPE : HP



CHAMBER No.	1	2		
CHAMBER CAPACITY	22.4	3.7		
CHOKE SIZE	.030	.020		
SEAT No.	6/41	6/41		
DEPTH (M) (from RKB)	1843	1843		
A RECORDING TIMES			OIL PROPERTIES CONT.	
TOOL SET	04:52:20	-	ODOUR	
PRETEST OPEN	04:52:20	-	POUR POINT (°)	
TIME OPEN	04:55:12	05:08:30	COMMENTS	
CHAMBER OPEN	04:55:15	05:08:30	(c) WATER PROPERTIES	
CHAMBER FULL	05:02:00	05:11:00	RESISTIVITY ()	
FILL TIME	07:00	02:30	Cl (frm. resis.) ()	
START BUILD UP	05:02:00	05:11:00	Cl (frm. titrat) (PPM)	16000
FINISH BUILD UP	05:07:00	05:17:00	NO ₃ (PPM)	70
BUILD UP TIME	05:00	06:00	pH	8
SEAL CHAMBER	05:07:30	05:18:00	OTHER TRACERS	
TOOL RETRACT	-	05:19:00	()	
TOTAL TIME	15:00	10:30	DENSITY ()	
B SAMPLE PRESSURES			FLUORESCENCE	
IHP (PSIA)	2954.9	-	COLOUR	
ISIP (PSIA)	2609.9	2609.4	COMMENTS	
IFP (PSIA)	2230	2297	(d) OTHER SAMPLE PROPERTIES	
FFP (PSIA)	2198	2285	F MUD PROPERTIES	
FSIP (PSIA)	2609.1	2609.2	TYPE	SEAWATER GEL
FHP (PSIA)	-	2954.5	RESISTIVITY (M)	.218 @ 25°C
TEMP. CORR. ()			Cl (frm. resis.) (PPM)	28000
COMMENTS			Cl (frm. titrat) (PPM)	18000
C TEMPERATURE			NO ₃ Drld/1st. circ (PPM)	160
DEPTH TOOL REACHED (M)	1875	1875	pH	
MAX. REC. TEMP. (°)			OTHER TRACERS	
TIME CIRC. STOPPED	15/6 18:00	15/6 18:00	()	
TIME SINCE CIRC.	59 HRS	59 HRS	DENSITY ()	
D SAMPLE RECOVERY			G GENERAL COMMENTS	
SURFACE PRESSURE (PSIG)	1000		THE UPPER CHAMBER WAS TRANSFERRED FOR ANALYSIS BY "FLOPETROL".	
VOL. GAS (CUFT)	6.66			
VOL. OIL (CC)	590			
VOL. WATER (L)	21			
VOL. FILTRATE ()				
VOL. CONDENSATE ()				
VOL. OTHER ()				
E SAMPLE PROPERTIES				
(a) G	c1 (PPM)	757800		
A	c2 (PPM)	82310		
S	c3 (PPM)	28620		
	c4 (PPM)	5620		
C	c5 (PPM)	670		
O	c6+ (PPM)	110		
M	CO ₂ (%)	0.4		
P	H ₂ S (PPM)	0		
(b) OIL PROPERTIES				
DENSITY:	HYDROMETER	45.9 @ 60°F		
(API)	REFRACTOMETER	-		
REFRACTIVE INDEX		-		
COLOUR		RED-BN		
FLUORESCENCE		BRT BLUE-WH		
G.O.R. (SCF/BBT)		1794		

COMPANY : ESSO AUSTRALIA WELL : LUDERICK NO. 1
LTD.

RUN No. : 7

PRESSURE GAUGE TYPE : HP



CHAMBER No.	1	2		
CHAMBER CAPACITY (LITRES)	22.4	10.2		
CHOKE SIZE	0.03	0.02		
SEAT No.	7/42	7/42		
DEPTH (M) (from RKB)	2018	2018		
A RECORDING TIMES			OIL PROPERTIES CONT.	
TOOL SET	19:30:51		ODOUR	
PRETEST OPEN	19:30:51		POUR POINT (°)	
TIME OPEN			COMMENTS	
CHAMBER OPEN	19:35:46	19:46:21	(c) WATER PROPERTIES	
CHAMBER FULL	19:42:50	19:52:58	RESISTIVITY (M)	.32 @ 48 ° C
FILL TIME	07:04	06:37	Cl (frm. resis.) (PPM)	12000
START BUILD UP	19:42:50	19:52:58	Cl (frm. titrat) (PPM)	13000
FINISH BUILD UP	19:43:20	19:53:15	NO ₃ (PPM)	60
BUILD UP TIME	01:30	:17	pH	7.1
SEAL CHAMBER	19:44:00	19:54:58	OTHER TRACERS	()
TOOL RETRACT	-	19:57:09	DENSITY ()	
TOTAL TIME			FLUORESCENCE	
B SAMPLE PRESSURES			COLOUR	
IHP (PSIA)	3257.3		COMMENTS	
ISIP (PSIA)	2864.3	2864.3	(d) OTHER SAMPLE PROPERTIES	
IFP (PSIA)	551.0	2775.9		
FFP (PSIA)	2476.0	2640.0	F MUD PROPERTIES	
FSIP (PSIA)	2863.5	2863.0	TYPE	SEAWATER GEL
FHP (PSIA)		3257.6	RESISTIVITY (M)	.312 @ 15 ° C
TEMP. CORR. ()			Cl (frm. resis.) (PPM)	24000
COMMENTS			Cl (frm. titrat) (PPM)	21000
C TEMPERATURE			NO ₃ Drld/1st.circ (PPM)	200
DEPTH TOOL REACHED (M)	2060	2060	pH	10.1
MAX. REC. TEMP. (° C)			OTHER TRACERS	()
TIME CIRC. STOPPED	24/6 03:30	24/6 03:30	DENSITY (PPG)	9.2
TIME SINCE CIRC. (HRS)	39.0	39.0	G GENERAL COMMENTS	
D SAMPLE RECOVERY			THE UPPER CHAMBER WAS PRESERVED FOR ANALYSIS.	
SURFACE PRESSURE (PSIG)	1000			
VOL. GAS (CUFT)	65			
VOL. OIL (CC)	7922			
VOL. WATER (CC)	1828			
VOL. FILTRATE ()				
VOL. CONDENSATE ()				
VOL. OTHER ()				
E SAMPLE PROPERTIES				
(a) G	c1 (PPM)	204654		
A	c2 (PPM)	25166		
S	c3 (PPM)	13637		
	c4 (PPM)	4023		
C	c5 (PPM)	647		
O	c6+ (PPM)	92		
M	CO ₂ (%)	1.5		
P	H ₂ S (PPM)	10		
(b) OIL PROPERTIES				
DENSITY: (API)	HYDROMETER	60.7 @ 60 ° F		
	REFRACTOMETER			
REFRACTIVE INDEX				
COLOUR		GREYISH/RED		
FLUORESCENCE		BR BLUE/WH		
G.O.R. (SCF/BB)		1305		

APPENDICES

COMPUTER DATA LISTINGS

Data is fed to the computer while drilling is in progress, using the DRILL program and is stored on a tape at 10, 5, 1, or 0.2m 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 and 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 averages

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

(a). BIT RECORD AND BIT INITIALIZATION DATA

BIT SIZE Inches

BIT COST Australian dollars

JET SIZE Thirty-seconds of an inch

DEPTHS Metres

HOLE MADE. Metres

DRILLING TIME. Hours

AVERAGE ROP. Metres/hour

AVERAGE COST/METRE . . Australian dollars

BIT CONDITION. Teeth

Bearings

Gauge Inches

WELL: LUDERICK #1

BIT RECORD

BIT IADC		SIZE	COST	NOZZLES	DEPTH	DEPTH	BIT RUN	TOTAL	TRIP		CCOST	TOTAL	CONDITION		
No.	CODE MAKE & TYPE				IN	OUT		HOURS	AROP	TIME		TURNS	T	B	G
1	111 HTC OSC3AJ&26"HO	26.000	0.00	18 18 18	74.0	209.0	135.0	3.28	41.2	2.4	178.44	13555	2	5	0.000
2	111 HTC OSC3AJ	17.500	4442.00	20 20 20	209.0	806.0	597.0	12.77	46.8	3.7	124.44	106641	2	2	0.000
3	114 HTC X3A	12.250	2201.00	16 16 18	806.0	1751.0	945.0	22.01	42.9	5.7	126.69	196061	4	6	0.000
4	437 HTC J11	12.250	6788.00	16 16 16	1751.0	1837.0	86.0	7.07	12.2	5.9	718.53	48632	1	1	0.000
4	4 CHRIS RC4	9.875	0.00	15 15 14	1837.9	1847.5	9.6	2.38	4.0	5.9	3657.86	17130	0	0	0.250
4	4 CHRIS RC4	9.875	0.00	15 15 14	1847.5	1856.5	9.0	3.07	13.0	5.9	2045.26	22329	0	0	0.300
4	4 CHRIS RC4	9.875	0.00	15 15 14	1856.5	1861.6	5.1	7.47	1.2	5.9	2392.50	54023	0	0	0.350
5	437 HTC J11	12.250	6788.00	15 15 15	1861.6	2062.0	200.4	22.32	9.0	6.4	641.66	147694	8	4	0.125

WELL: LUDERICK NO.1

BIT RECORD

BIT IADC		SIZE	COST	NOZZLES	DEPTH	DEPTH	BIT RUN	TOTAL	TRIP		CCOST	TOTAL	CONDITION		
No.	CODE MAKE & TYPE				IN	OUT		HOURS	AROP	TIME		TURNS	T	B	G
6	517 HTC J22	12.250	6788.00	15 15 15	2062.0	2477.6	415.6	40.25	10.3	7.3	501.56	180878	3	3	0.125
7	517 HTC J22	12.250	6788.00	15 15 15	2477.6	2636.0	158.4	20.78	7.6	7.6	802.70	90559	4	8	0.250
8	537 HTC J33	12.250	6637.00	15 15 15	2636.0	2901.0	265.0	52.43	5.1	8.2	995.35	214055	5	8	0.250
9	537 HTC J33	12.250	6637.00	15 15 15	2901.0	3021.0	120.0	22.14	5.4	8.4	1134.64	92542	2	2	0.000

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

STARTING DEPTH.....	74.0		
BIT COST, RIG COST/HOUR.....	0.00	4241.00	
TRIP TIME.....	2.4		
BIT DIAMETER.....	26.000		
NOZZLES.....	18	18	18
HW DRILL COLLAR LENGTH, OD, ID....	23.79	9.750	3.062
DRILL COLLAR LENGTH, OD, ID.....	39.21	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	83.25	5.000	3.125
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.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	4.0	2.00	
FINISHING DEPTH.....	209.0		
CUMULATIVE HOURS, TURNS.....	3.28	13555	
BIT CONDITION OUT.....	T 2	B 5	G 0.000

BIT NUMBER: 2 IADC CODE 111 HTC OSC3AJ

STARTING DEPTH.....	209.0		
BIT COST, RIG COST/HOUR.....	4442.00	4241.00	
TRIP TIME.....	3.7		
BIT DIAMETER.....	17.500		
NOZZLES.....	20	20	20
HW DRILL COLLAR LENGTH, OD, ID....	21.95	9.750	3.062
DRILL COLLAR LENGTH, OD, ID.....	95.35	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	27.21	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	194.00	19.124	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	3.5	2.10	
FINISHING DEPTH.....	806.0		
CUMULATIVE HOURS, TURNS.....	12.77	106641	
BIT CONDITION OUT.....	T 2	B 2	G 0.000

BIT NUMBER: 3 IADC CODE 114 HTC X3A

STARTING DEPTH.....	806.0		
BIT COST, RIG COST/HOUR.....	2201.00	4241.00	
TRIP TIME.....	5.7		
BIT DIAMETER.....	12.250		
NOZZLES.....	16	16	18
DRILL COLLAR LENGTH, OD, ID.....	171.80	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR.....	10.0		
CUTTINGS DIAMETER, DENSITY.....	3.0	2.20	
FINISHING DEPTH.....	1751.0		
CUMULATIVE HOURS, TURNS.....	22.01	196061	
BIT CONDITION OUT.....	T 4	B 6	G 0.000

BIT NUMBER: 4 IADC CODE 437 HTC J11

STARTING DEPTH.....	1751.0		
BIT COST, RIG COST/HOUR.....	6788.00	4241.00	
TRIP TIME.....	5.9		
BIT DIAMETER.....	12.250		
NOZZLES.....	16	16	16
DRILL COLLAR LENGTH, OD, ID.....	172.45	8.000	2.813
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR.....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.6	2.55	
FINISHING DEPTH.....	1837.0		
CUMULATIVE HOURS, TURNS.....	7.07	48632	
BIT CONDITION OUT.....	T 1	B 1	G 0.000

BIT NUMBER: 4 IADC CODE 4 CHRIS RC4

STARTING DEPTH.....	1837.9		
BIT COST, RIG COST/HOUR.....	0.00	4241.00	
TRIP TIME.....	5.9		
BIT DIAMETER.....	9.875		
NOZZLES.....	15	15	14
HW DRILL COLLAR LENGTH, OD, ID....	152.80	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.5	2.50	
FINISHING DEPTH.....	1847.5		
CUMULATIVE HOURS, TURNS.....	2.38	17130	
BIT CONDITION OUT.....	T 0	B 0	G 0.250

BIT NUMBER: 4 IADC CODE 4 CHRIS RC4

STARTING DEPTH.....	1847.5		
BIT COST, RIG COST/HOUR.....	0.00	4241.00	
TRIP TIME.....	5.9		
PREVIOUS HOLE MADE.....	9.6		
PREVIOUS HOURS, TURNS.....	2.38	17130	
BIT DIAMETER.....	9.875		
NOZZLES.....	15	15	14
HW DRILL COLLAR LENGTH, OD, ID....	152.80	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.5	2.50	
FINISHING DEPTH.....	1856.5		
CUMULATIVE HOURS, TURNS.....	3.07	22329	
BIT CONDITION OUT.....	T 0	B 0	G 0.300

BIT NUMBER: 4 IADC CODE 4 CHRIS RC4

STARTING DEPTH.....	1856.5		
BIT COST, RIG COST/HOUR.....	0.00	4241.00	
TRIP TIME.....	5.9		
PREVIOUS HOLE MADE.....	18.6		
PREVIOUS HOURS, TURNS.....	3.07	22329	
BIT DIAMETER.....	9.875		
NOZZLES.....	15	15	14
HW DRILL COLLAR LENGTH, OD, ID....	152.80	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.5	2.50	
FINISHING DEPTH.....	1861.6		
CUMULATIVE HOURS, TURNS.....	7.47	54023	
BIT CONDITION OUT.....	T 0	B 0	G 0.350

BIT NUMBER: 5 IADC CODE 437 HTC J11

STARTING DEPTH.....	1861.6		
BIT COST, RIG COST/HOUR.....	6788.00	4241.00	
TRIP TIME.....	6.4		
BIT DIAMETER.....	12.250		
NOZZLES.....	15	15	15
HW DRILL COLLAR LENGTH, OD, ID....	172.45	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.5	2.50	
FINISHING DEPTH.....	2062.0		
CUMULATIVE HOURS, TURNS.....	22.32	147694	
BIT CONDITION OUT.....	T 8	B 4	G 0.125

BIT NUMBER: 6 IADC CODE 517 HTC J22

STARTING DEPTH.....	2062.0		
BIT COST, RIG COST/HOUR.....	6788.00	4241.00	
TRIP TIME.....	7.3		
BIT DIAMETER.....	12.250		
NOZZLES.....	15	15	15
HW DRILL COLLAR LENGTH, OD, ID....	172.45	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.5	2.50	
FINISHING DEPTH.....	2477.6		
CUMULATIVE HOURS, TURNS.....	40.25	180878	
BIT CONDITION OUT.....	T 3	B 3	G 0.125

BIT NUMBER: 7 IADC CODE 517 HTC J22

STARTING DEPTH.....	2477.6		
BIT COST, RIG COST/HOUR.....	6788.00	4241.00	
TRIP TIME.....	7.6		
BIT DIAMETER.....	12.250		
NOZZLES.....	15	15	15
HW DRILL COLLAR LENGTH, OD, ID....	172.45	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.5	2.40	
FINISHING DEPTH.....	2636.0		
CUMULATIVE HOURS, TURNS.....	20.78	90559	
BIT CONDITION OUT.....	T 4	B 8	G 0.250

BIT NUMBER: 8 IADC CODE 537 HTC J33

STARTING DEPTH.....	2636.0		
BIT COST, RIG COST/HOUR.....	6637.00	4241.00	
TRIP TIME.....	8.2		
BIT DIAMETER.....	12.250		
NOZZLES.....	15	15	15
HW DRILL COLLAR LENGTH, OD, ID....	172.45	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.4	2.40	
FINISHING DEPTH.....	2901.0		
CUMULATIVE HOURS, TURNS.....	52.43	214055	
BIT CONDITION OUT.....	T 5	B 8	G 0.250

BIT NUMBER: 9 IADC CODE 537 HTC J33

STARTING DEPTH.....	2901.0		
BIT COST, RIG COST/HOUR.....	6637.00	4241.00	
TRIP TIME.....	8.4		
BIT DIAMETER.....	12.250		
NOZZLES.....	15	15	15
HW DRILL COLLAR LENGTH, OD, ID....	172.45	8.000	2.813
DRILL COLLAR LENGTH, OD, ID.....	0.00	0.000	0.000
HW DRILL PIPE LENGTH, OD, ID.....	83.18	5.000	3.125
DRILL PIPE OD, ID.....		5.000	4.276
CASING DEPTH, ID.....	792.00	12.615	
RISER LENGTH, ID.....	74.00	21.000	
PUMP VOLUMES 1 AND 2.....	0.119	0.119	
PORE PRESSURE CALC EXPONENT.....	1.20		
NORMAL PORE PRESSURE.....	8.4		
OVERBURDEN GRADIENT MODIFIER.....	0.00		
STRESS RATIO MODIFIER.....	0.43		
"d" EXPONENT CORRECTION FACTOR....	10.0		
CUTTINGS DIAMETER, DENSITY.....	2.3	2.40	
FINISHING DEPTH.....	3021.0		
CUMULATIVE HOURS, TURNS.....	22.14	92542	
BIT CONDITION OUT.....	T 2	B 2	G 0.000

(b). HYDRAULIC ANALYSIS

Data listed from the 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

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

PRESSURE UNITS Pounds per square inch

IMPACT FORCE The impact force at the bit,
in foot-pounds per second squared.

H.H.P. Hydraulic horsepower at the bit

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 52 SPM 2 27 FLOW RATE 394

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDG/OH	1.851	44	5	0	TURBULENT			0.0
DC/OH	1.950	76	5	0	TURBULENT			0.0
HWDG/OH	2.074	77	5	0	TURBULENT			0.0
TOTAL VOLUME		197	TOTAL PRESSURE DROP					0.0

LAG: 21.0 MINUTES 1092 STROKES #1 AND 566 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 220.8 HHP 51 IMPACT FORCE 297
% SURFACE PRESSURE 60.3 HHP/sqin 0.10 JET VELOCITY 51

PRESSURE BREAKDOWN:

SURFACE 10.8
STRING 35.8
BIT 220.8
ANNULUS 0.0
TOTAL 267.3 PUMP PRESSURE 365.9 % DIFFERENCE 26.9

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 99 SPM 2 94 FLOW RATE 964

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	1.851	44	12	0	TURBULENT			0.0
DC/OH	1.950	76	12	0	TURBULENT			0.0
HWDP/OH	2.074	173	11	0	TURBULENT			0.0
DP/OH	2.074	111	11	0	TURBULENT			0.0
TOTAL VOLUME		405			TOTAL PRESSURE DROP		0.0	

LAG: 17.6 MINUTES 1747 STROKES #1 AND 1653 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1324.5 HHP 745 IMPACT FORCE 1781
 % SURFACE PRESSURE 107.2 HHP/sqin 1.40 JET VELOCITY 126

PRESSURE BREAKDOWN:

SURFACE 53.9
 STRING 261.0
 BIT 1324.5
 ANNULUS 0.0
 TOTAL 1639.4 PUMP PRESSURE 1235.6 % DIFFERENCE 32.7

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 0.0
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 1 100 SPM 2 92 FLOW RATE 961

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.673	15	34	37	LAMINAR	2	32	0.0
DC/OH	0.772	65	30	35	LAMINAR	1	28	0.1
DC/CSG	0.961	11	24	34	LAMINAR	1	23	0.0
HWDP/CSG	1.085	30	21	32	LAMINAR	1	20	0.0
DP/CSG	1.085	88	21	32	LAMINAR	1	20	0.1
DP/RIS	1.325	98	17	32	LAMINAR	0	17	0.0
TOTAL VOLUME		307	TOTAL PRESSURE DROP			0.3		

LAG: 13.4 MINUTES 1338 STROKES #1 AND 1239 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	863.5	HHP	484	IMPACT FORCE	1434
% SURFACE PRESSURE	46.7	HHP/sqin	2.01	JET VELOCITY	102

PRESSURE BREAKDOWN:

SURFACE	61.6		
STRING	390.1		
BIT	863.5		
ANNULUS	0.3		
TOTAL	1315.4	PUMP PRESSURE	1847.3
		% DIFFERENCE	28.8

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 8.60	HYDROSTATIC PRESSURE 440.2
CIRCULATING:	ECD 8.61	CIRCULATING PRESSURE 440.5
PULLING OUT:	TRIP MARGIN 0.01	ESTIMATED SWAB 0.6
	EFFECTIVE MUD WEIGHT 8.59	BOTTOM HOLE PRESSURE 439.5

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 400.0 AND TVD 400.0

SPM 1 97 SPM 2 94 FLOW RATE 954

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.673	15	34	37	LAMINAR	2	32	0.0
DC/OH	0.772	74	29	35	LAMINAR	1	28	0.1
HWDP/OH	0.896	24	25	33	LAMINAR	1	24	0.0
DP/OH	0.896	55	25	33	LAMINAR	1	24	0.1
DP/CSG	1.085	130	21	32	LAMINAR	1	20	0.1
DP/RIS	1.325	98	17	32	LAMINAR	0	17	0.0
TOTAL VOLUME		396			TOTAL PRESSURE DROP		0.4	

LAG: 17.4 MINUTES 1683 STROKES #1 AND 1646 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 851.2 HHP 474 IMPACT FORCE 1413
 % SURFACE PRESSURE 45.2 HHP/sqin 1.97 JET VELOCITY 101

PRESSURE BREAKDOWN:

SURFACE 60.8
 STRING 420.1
 BIT 851.2
 ANNULUS 0.4
 TOTAL 1332.5 PUMP PRESSURE 1884.1 % DIFFERENCE 29.3

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	8.60	HYDROSTATIC PRESSURE 586.9
CIRCULATING: ECD	8.61	CIRCULATING PRESSURE 587.3
PULLING OUT: TRIP MARGIN	0.01	ESTIMATED SWAB 0.8
EFFECTIVE MUD WEIGHT	8.59	BOTTOM HOLE PRESSURE 586.1

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 500.0 AND TVD 500.0

SPM 1 96 SPM 2 97 FLOW RATE 967

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.673	15	34	37	LAMINAR	2	32	0.0
DC/OH	0.772	74	30	35	LAMINAR	1	28	0.1
HWDP/OH	0.896	24	26	33	LAMINAR	1	25	0.0
DP/OH	0.896	145	26	33	LAMINAR	1	25	0.2
DP/CSG	1.085	130	21	32	LAMINAR	1	21	0.1
DP/RIS	1.325	98	17	31	LAMINAR	0	17	0.0
TOTAL VOLUME		486			TOTAL PRESSURE DROP		0.5	

LAG: 21.1 MINUTES 2025 STROKES #1 AND 2056 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	884.4	HHP	499	IMPACT FORCE	1468
% SURFACE PRESSURE	43.5	HHP/sqin	2.07	JET VELOCITY	102

PRESSURE BREAKDOWN:

SURFACE	62.9		
STRING	470.5		
BIT	884.4		
ANNULUS	0.5		
TOTAL	1418.3	PUMP PRESSURE	2032.0
		% DIFFERENCE	30.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 8.70	HYDROSTATIC PRESSURE 742.1
CIRCULATING:	ECD 8.71	CIRCULATING PRESSURE 742.6
PULLING OUT:	TRIP MARGIN 0.01	ESTIMATED SWAB 1.0
	EFFECTIVE MUD WEIGHT 8.69	BOTTOM HOLE PRESSURE 741.1

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 600.0 AND TVD 600.0

SPM 1 97 SPM 2 98 FLOW RATE 974

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/ UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.673	15	34	36	LAMINAR	2	33	0.0
DC/OH	0.772	74	30	35	LAMINAR	1	29	0.1
HWDP/OH	0.896	24	26	33	LAMINAR	1	25	0.0
DP/OH	0.896	234	26	33	LAMINAR	1	25	0.2
DP/CSG	1.085	130	21	32	LAMINAR	1	21	0.1
DP/RIS	1.325	98	18	31	LAMINAR	0	17	0.1
TOTAL VOLUME		575	TOTAL PRESSURE DROP			0.6		

LAG: 24.8 MINUTES 2404 STROKES #1 AND 2431 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	918.2	HHP	522	IMPACT FORCE	1524
% SURFACE PRESSURE	43.3	HHP/sqin	2.17	JET VELOCITY	103

PRESSURE BREAKDOWN:

SURFACE	64.9		
STRING	523.0		
BIT	918.2		
ANNULUS	0.6		
TOTAL	1506.6	PUMP PRESSURE	2118.7
		% DIFFERENCE	28.9

BOTTOM HOLE PRESSURES:

		DENSITY UNITS	PRESSURE UNITS	
NOT CIRCULATING:	MUD WEIGHT	8.90	HYDROSTATIC PRESSURE	911.0
CIRCULATING:	ECD	8.91	CIRCULATING PRESSURE	911.6
PULLING OUT:	TRIP MARGIN	0.01	ESTIMATED SWAB	1.2
	EFFECTIVE MUD WEIGHT	8.89	BOTTOM HOLE PRESSURE	909.8

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 700.0 AND TVD 700.0

SPM 1 96 SPM 2 97 FLOW RATE 966

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.673	15	34	36	LAMINAR	2	32	0.0
DC/OH	0.772	74	30	34	LAMINAR	1	28	0.1
HWDP/OH	0.896	24	26	32	LAMINAR	1	25	0.0
DP/OH	0.896	324	26	32	LAMINAR	1	25	0.3
DP/CSG	1.085	130	21	32	LAMINAR	1	21	0.1
DP/RIS	1.325	98	17	31	LAMINAR	0	17	0.0
TOTAL VOLUME		665			TOTAL PRESSURE DROP		0.7	

LAG: 28.9 MINUTES 2775 STROKES #1 AND 2813 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 913.4 HHP 515 IMPACT FORCE 1516
 % SURFACE PRESSURE 42.5 HHP/sqin 2.14 JET VELOCITY 102

PRESSURE BREAKDOWN:

SURFACE 64.5
 STRING 557.1
 BIT 913.4
 ANNULUS 0.7
 TOTAL 1535.6 PUMP PRESSURE 2150.1 % DIFFERENCE 28.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 1074.8
CIRCULATING:	ECD 9.01	CIRCULATING PRESSURE 1075.5
PULLING OUT:	TRIP MARGIN 0.01	ESTIMATED SWAB 1.4
	EFFECTIVE MUD WEIGHT 8.99	BOTTOM HOLE PRESSURE 1073.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 800.0 AND TVD 800.0

SPM 1 94 SPM 2 97 FLOW RATE 958

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.673	15	34	129	LAMINAR	0	34	0.4
DC/OH	0.772	74	30	130	LAMINAR	0	29	1.3
HWDP/OH	0.896	24	25	130	LAMINAR	0	25	0.3
DP/OH	0.896	413	25	130	LAMINAR	0	25	4.6
DP/CSG	1.085	130	21	131	LAMINAR	0	21	1.0
DP/RIS	1.325	98	17	131	LAMINAR	0	17	0.5
TOTAL VOLUME		755			TOTAL PRESSURE DROP		8.2	

LAG: 33.1 MINUTES 3126 STROKES #1 AND 3215 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 897.5 HHP 502 IMPACT FORCE 1490
 % SURFACE PRESSURE 40.1 HHP/sqin 2.09 JET VELOCITY 101

PRESSURE BREAKDOWN:

SURFACE 63.5
 STRING 585.0
 BIT 897.5
 ANNULUS 8.2
 TOTAL 1554.2 PUMP PRESSURE 2239.2 % DIFFERENCE 30.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 1228.3
CIRCULATING:	ECD 9.06	CIRCULATING PRESSURE 1236.5
PULLING OUT:	TRIP MARGIN 0.12	ESTIMATED SWAB 16.4
	EFFECTIVE MUD WEIGHT 8.88	BOTTOM HOLE PRESSURE 1212.0

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 900.0 AND TVD 900.0

SPM 1 93 SPM 2 92 FLOW RATE 925

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	30	80	108	LAMINAR	1	79	3.9
DC/CSG	0.303	19	73	108	LAMINAR	1	71	2.0
HWDP/CSG	0.427	36	52	104	LAMINAR	1	51	1.2
DP/CSG	0.427	244	52	104	LAMINAR	1	51	8.3
DP/RIS	1.325	98	17	99	LAMINAR	0	17	0.3
TOTAL VOLUME		427	TOTAL PRESSURE DROP					15.7

LAG: 19.4 MINUTES 1798 STROKES #1 AND 1787 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1726.6 HHP 932 IMPACT FORCE 1997
 % SURFACE PRESSURE 60.3 HHP/sqin 7.91 JET VELOCITY 141

PRESSURE BREAKDOWN:

SURFACE 68.5
 STRING 909.6
 BIT 1726.6
 ANNULUS 15.7
 TOTAL 2720.3 PUMP PRESSURE 2863.0 % DIFFERENCE 5.0

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 1381.9
CIRCULATING:	ECD 9.10	CIRCULATING PRESSURE 1397.5
PULLING OUT:	TRIP MARGIN 0.20	ESTIMATED SWAB 31.3
	EFFECTIVE MUD WEIGHT 8.80	BOTTOM HOLE PRESSURE 1350.6

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1000.0 AND TVD 1000.0

SPM 1 93 SPM 2 90 FLOW RATE 911

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/ UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	47	79	100	LAMINAR	2	77	5.2
HWDP/OH	0.398	14	54	98	LAMINAR	1	54	0.5
HWDP/CSG	0.427	20	51	97	LAMINAR	1	50	0.6
DP/CSG	0.427	287	51	97	LAMINAR	1	50	8.5
DP/RIS	1.325	98	16	94	LAMINAR	0	16	0.3
TOTAL VOLUME		466			TOTAL PRESSURE DROP		15.0	

LAG: 21.5 MINUTES 1992 STROKES #1 AND 1927 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1674.8 HHP 891 IMPACT FORCE 1937
 % SURFACE PRESSURE 59.1 HHP/sqin 7.56 JET VELOCITY 139

PRESSURE BREAKDOWN:

SURFACE 63.0
 STRING 871.8
 BIT 1674.8
 ANNULUS 15.0
 TOTAL 2624.6 PUMP PRESSURE 2832.4 % DIFFERENCE 7.3

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 1535.4
CIRCULATING:	ECD 9.09	CIRCULATING PRESSURE 1550.4
PULLING OUT:	TRIP MARGIN 0.18	ESTIMATED SWAB 30.1
	EFFECTIVE MUD WEIGHT 8.82	BOTTOM HOLE PRESSURE 1505.3

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1100.0 AND TVD 1100.0

SPM 1 89 SPM 2 87 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	47	76	100	LAMINAR	2	75	5.1
HWDP/OH	0.398	33	53	98	LAMINAR	1	52	1.1
DP/OH	0.398	21	53	98	LAMINAR	1	52	0.7
DP/CSG	0.427	307	49	97	LAMINAR	1	48	9.0
DP/RIS	1.325	98	16	94	LAMINAR	0	16	0.3
TOTAL VOLUME		506			TOTAL PRESSURE DROP		16.2	

LAG: 24.2 MINUTES 2149 STROKES #1 AND 2105 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1562.3 HHP 802 IMPACT FORCE 1807
 % SURFACE PRESSURE 54.3 HHP/sqin 6.81 JET VELOCITY 134

PRESSURE BREAKDOWN:

SURFACE 59.1
 STRING 853.0
 BIT 1562.3
 ANNULUS 16.2
 TOTAL 2490.6 PUMP PRESSURE 2876.3 % DIFFERENCE 13.4

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 1688.9
CIRCULATING:	ECD 9.09	CIRCULATING PRESSURE 1705.2
PULLING OUT:	TRIP MARGIN 0.17	ESTIMATED SWAB 32.5
	EFFECTIVE MUD WEIGHT 8.83	BOTTOM HOLE PRESSURE 1656.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1200.0 AND TVD 1200.0

SPM 1 88 SPM 2 86 FLOW RATE 869

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	47	75	100	LAMINAR	2	74	5.1
HMWD/OH	0.398	33	52	98	LAMINAR	1	51	1.1
DP/OH	0.398	61	52	98	LAMINAR	1	51	2.1
DP/CSG	0.427	307	48	97	LAMINAR	1	48	9.0
DP/RIS	1.325	98	16	94	LAMINAR	0	16	0.3

TOTAL VOLUME 546 TOTAL PRESSURE DROP 17.5

LAG: 26.4 MINUTES 2321 STROKES #1 AND 2268 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1523.7	HHP	773	IMPACT FORCE	1762
% SURFACE PRESSURE	52.5	HHP/sqin	6.56	JET VELOCITY	132

PRESSURE BREAKDOWN:

SURFACE	57.8				
STRING	867.3				
BIT	1523.7				
ANNULUS	17.5				
TOTAL	2466.5	PUMP PRESSURE	2900.3	% DIFFERENCE	15.0

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 1842.5
CIRCULATING:	ECD 9.09	CIRCULATING PRESSURE 1860.0
PULLING OUT:	TRIP MARGIN 0.17	ESTIMATED SWAB 35.1
	EFFECTIVE MUD WEIGHT 8.83	BOTTOM HOLE PRESSURE 1807.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1300.0 AND TVD 1300.0

SPM 1 87 SPM 2 87 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	47	76	81	LAMINAR	2	73	3.7
HWDP/OH	0.398	33	52	77	LAMINAR	1	51	0.8
DP/OH	0.398	101	52	77	LAMINAR	1	51	2.3
DP/CSG	0.427	307	48	76	LAMINAR	1	48	6.0
DP/RIS	1.325	98	16	71	LAMINAR	0	15	0.2
TOTAL VOLUME		586	TOTAL PRESSURE DROP					12.9

LAG: 28.3 MINUTES 2462 STROKES #1 AND 2462 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1524.7 HHP 774 IMPACT FORCE 1763
 % SURFACE PRESSURE 52.1 HHP/sqin 6.56 JET VELOCITY 132

PRESSURE BREAKDOWN:

SURFACE 57.9
 STRING 901.2
 BIT 1524.7
 ANNULUS 12.9
 TOTAL 2496.7 PUMP PRESSURE 2925.0 % DIFFERENCE 14.6

BOTTOM HOLE PRESSURES:

		DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT	9.00	HYDROSTATIC PRESSURE 1996.1
CIRCULATING:	ECD	9.06	CIRCULATING PRESSURE 2008.9
PULLING OUT:	TRIP MARGIN	0.12	ESTIMATED SWAB 25.8
	EFFECTIVE MUD WEIGHT	8.88	BOTTOM HOLE PRESSURE 1970.3

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1400.0 AND TVD 1399.9

SPM 1 85 SPM 2 85 FLOW RATE 848

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	47	74	106	LAMINAR	1	72	5.6
HWDP/OH	0.398	33	51	104	LAMINAR	1	50	1.2
DP/OH	0.398	141	51	104	LAMINAR	1	50	5.3
DP/CSG	0.427	307	47	104	LAMINAR	1	47	9.9
DP/RIS	1.325	98	15	101	LAMINAR	0	15	0.3
TOTAL VOLUME		626			TOTAL PRESSURE DROP		22.3	

LAG: 31.0 MINUTES 2630 STROKES #1 AND 2628 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1448.1 HHP 716 IMPACT FORCE 1675
 % SURFACE PRESSURE 49.6 HHP/sqin 6.08 JET VELOCITY 129

PRESSURE BREAKDOWN:

SURFACE 55.2
 STRING 892.2
 BIT 1448.1
 ANNULUS 22.3
 TOTAL 2417.9 PUMP PRESSURE 2921.4 % DIFFERENCE 17.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 2149.5
CIRCULATING:	ECD 9.09	CIRCULATING PRESSURE 2171.9
PULLING OUT:	TRIP MARGIN 0.19	ESTIMATED SWAB 44.7
	EFFECTIVE MUD WEIGHT 8.81	BOTTOM HOLE PRESSURE 2104.9

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1500.0 AND TVD 1499.9

SPM 1 84 SPM 2 85 FLOW RATE 846

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	47	73	106	LAMINAR	1	72	5.6
HWDP/OH	0.398	33	51	104	LAMINAR	1	50	1.2
DP/OH	0.398	180	51	104	LAMINAR	1	50	6.8
DP/CSG	0.427	307	47	104	LAMINAR	1	47	9.9
DP/RIS	1.325	98	15	101	LAMINAR	0	15	0.3
TOTAL VOLUME		666	TOTAL PRESSURE DROP					23.8

LAG: 33.0 MINUTES 2775 STROKES #1 AND 2818 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1443.6 HHP 713 IMPACT FORCE 1670
 % SURFACE PRESSURE 47.7 HHP/sqin 6.05 JET VELOCITY 129

PRESSURE BREAKDOWN:

SURFACE 55.1
 STRING 921.4
 BIT 1443.6
 ANNULUS 23.8
 TOTAL 2443.9 PUMP PRESSURE 3025.2 % DIFFERENCE 19.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.00	HYDROSTATIC PRESSURE 2303.1
CIRCULATING:	ECD 9.09	CIRCULATING PRESSURE 2326.9
PULLING OUT:	TRIP MARGIN 0.19	ESTIMATED SWAB 47.6
	EFFECTIVE MUD WEIGHT 8.81	BOTTOM HOLE PRESSURE 2255.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1600.0 AND TVD 1599.9

SPM 1 81 SPM 2 82 FLOW RATE 817

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	47	71	156	LAMINAR	1	70	11.3
HWDP/OH	0.398	33	49	157	LAMINAR	0	49	2.7
DP/OH	0.398	220	49	157	LAMINAR	0	49	17.9
DP/CSG	0.427	307	46	157	LAMINAR	0	45	21.6
DP/RIS	1.325	98	15	157	LAMINAR	0	15	0.7
TOTAL VOLUME		705	TOTAL PRESSURE DROP			54.2		

LAG: 36.2 MINUTES 2940 STROKES #1 AND 2989 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1362.1 HHP 650 IMPACT FORCE 1575
% SURFACE PRESSURE 46.1 HHP/sqin 5.51 JET VELOCITY 124

PRESSURE BREAKDOWN:

SURFACE 55.3
STRING 957.1
BIT 1362.1
ANNULUS 54.2
TOTAL 2428.7 PUMP PRESSURE 2953.4 % DIFFERENCE 17.8

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.10	HYDROSTATIC PRESSURE 2483.9
CIRCULATING:	ECD 9.30	CIRCULATING PRESSURE 2538.0
PULLING OUT:	TRIP MARGIN 0.40	ESTIMATED SWAB 108.3
	EFFECTIVE MUD WEIGHT 8.70	BOTTOM HOLE PRESSURE 2375.5

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1700.0 AND TVD 1699.9

SPM 1 00 SPM 2 82 FLOW RATE 809

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	47	70	155	LAMINAR	1	70	11.3
HWDP/OH	0.398	33	48	156	LAMINAR	0	48	2.7
DP/OH	0.398	260	48	156	LAMINAR	0	48	21.1
DP/CSG	0.427	307	45	156	LAMINAR	0	45	21.5
DP/RIS	1.325	98	15	156	LAMINAR	0	14	0.7
TOTAL VOLUME		745	TOTAL PRESSURE DROP					57.3

LAG: 38.7 MINUTES 3097 STROKES #1 AND 3166 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1347.4 HHP 636 IMPACT FORCE 1558
 % SURFACE PRESSURE 45.9 HHP/sqin 5.39 JET VELOCITY 123

PRESSURE BREAKDOWN:

SURFACE 54.7
 STRING 978.3
 BIT 1347.4
 ANNULUS 57.3
 TOTAL 2437.7 PUMP PRESSURE 2936.8 % DIFFERENCE 17.0

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 2668.1
CIRCULATING:	ECD 9.40	CIRCULATING PRESSURE 2725.4
PULLING OUT:	TRIP MARGIN 0.40	ESTIMATED SWAB 114.6
	EFFECTIVE MUD WEIGHT 8.80	BOTTOM HOLE PRESSURE 2553.6

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1800.0 AND TVD 1799.9

SPM 1 78 SPM 2 77 FLOW RATE 777

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
DC/OH	0.274	47	67	155	LAMINAR	1	67	11.2
HWDP/OH	0.398	33	46	156	LAMINAR	0	46	2.7
DP/OH	0.398	300	46	156	LAMINAR	0	46	24.1
DP/CSG	0.427	307	43	156	LAMINAR	0	43	21.4
DP/RIS	1.325	98	14	156	LAMINAR	0	14	0.7
TOTAL VOLUME		785	TOTAL PRESSURE DROP					60.1

LAG: 42.4 MINUTES 3332 STROKES #1 AND 3265 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1473.4	HHP	668	IMPACT FORCE	1566
% SURFACE PRESSURE	49.9	HHP/sqin	5.67	JET VELOCITY	129

PRESSURE BREAKDOWN:

SURFACE	50.9		
STRING	940.7		
BIT	1473.4		
ANNULUS	60.1		
TOTAL	2525.1	PUMP PRESSURE	2951.0
		% DIFFERENCE	14.4

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 2825.0
CIRCULATING:	ECD 9.40	CIRCULATING PRESSURE 2885.1
PULLING OUT:	TRIP MARGIN 0.39	ESTIMATED SWAB 120.1
	EFFECTIVE MUD WEIGHT 8.81	BOTTOM HOLE PRESSURE 2704.9

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1840.0 AND TVD 1839.9

SPM 1 0 SPM 2 42 FLOW RATE 209

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.107	16	47	120	LAMINAR	1	45	14.8
HWDP/OH	0.231	19	22	103	LAMINAR	0	21	1.5
DP/OH	0.231	188	22	103	LAMINAR	0	21	14.7
DP/CSG	0.427	307	12	96	LAMINAR	0	12	5.4
DP/RIS	1.325	98	4	86	LAMINAR	0	4	0.1
TOTAL VOLUME		628			TOTAL PRESSURE DROP		36.5	

LAG: 126.1 MINUTES 0 STROKES #1 AND 5277 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	150.9	HHP	18	IMPACT FORCE	135
% SURFACE PRESSURE	32.1	HHP/sqin	0.24	JET VELOCITY	41

PRESSURE BREAKDOWN:

SURFACE	5.4		
STRING	96.4		
BIT	150.9		
ANNULUS	36.5		
TOTAL	289.2	PUMP PRESSURE	470.8
		% DIFFERENCE	38.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 2887.8
CIRCULATING:	ECD 9.32	CIRCULATING PRESSURE 2924.3
PULLING OUT:	TRIP MARGIN 0.23	ESTIMATED SWAB 73.0
	EFFECTIVE MUD WEIGHT 8.97	BOTTOM HOLE PRESSURE 2814.9

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1850.0 AND TVD 1849.9

SPM 1 64 SPM 2 0 FLOW RATE 318

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.107	16	71	120	LAMINAR	2	69	17.6
HWDP/OH	0.231	19	33	103	LAMINAR	0	32	1.8
DP/OH	0.231	190	33	103	LAMINAR	0	32	17.7
DP/CSG	0.427	307	18	96	LAMINAR	0	18	6.4
DP/RIS	1.325	98	6	86	LAMINAR	0	6	0.1

TOTAL VOLUME 630 TOTAL PRESSURE DROP 43.6

LAG: 83.2 MINUTES 5297 STROKES #1 AND 0 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 349.2 HHP 65 IMPACT FORCE 312
 % SURFACE PRESSURE 41.3 HHP/sqin 0.85 JET VELOCITY 63

PRESSURE BREAKDOWN:

SURFACE 11.4
 STRING 205.9
 BIT 349.2
 ANNULUS 43.6
 TOTAL 610.2 PUMP PRESSURE 845.8 % DIFFERENCE 27.9

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	9.20	HYDROSTATIC PRESSURE 2903.5
CIRCULATING: ECD	9.34	CIRCULATING PRESSURE 2947.1
PULLING OUT: TRIP MARGIN	0.28	ESTIMATED SWAB 87.3
EFFECTIVE MUD WEIGHT	8.92	BOTTOM HOLE PRESSURE 2816.2

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1860.0 AND TVD 1859.9

SPM 1 0 SPM 2 54 FLOW RATE 270

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.107	16	60	114	LAMINAR	2	58	15.1
HWDP/OH	0.231	19	28	100	LAMINAR	0	27	1.6
DP/OH	0.231	192	28	100	LAMINAR	0	27	15.9
DP/CSG	0.427	307	15	94	LAMINAR	0	15	5.8
DP/RIS	1.325	98	5	85	LAMINAR	0	5	0.1
TOTAL VOLUME		633			TOTAL PRESSURE DROP		38.5	

LAG: 98.5 MINUTES 0 STROKES #1 AND 5316 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	251.3	HHP	40	IMPACT FORCE	225
% SURFACE PRESSURE	37.6	HHP/sqin	0.52	JET VELOCITY	53

PRESSURE BREAKDOWN:

SURFACE	8.2		
STRING	148.9		
BIT	251.3		
ANNULUS	38.5		
TOTAL	447.0	PUMP PRESSURE	668.1 % DIFFERENCE 33.1

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 2919.2
CIRCULATING:	ECD 9.32	CIRCULATING PRESSURE 2957.7
PULLING OUT:	TRIP MARGIN 0.24	ESTIMATED SWAB 77.1
	EFFECTIVE MUD WEIGHT 8.96	BOTTOM HOLE PRESSURE 2842.1

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1900.0 AND TVD 1899.9

SPM 1 73 SPM 2 68 FLOW RATE 706

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	61	102	LAMINAR	1	60	5.5
HWDP/OH	0.398	33	42	95	LAMINAR	0	42	1.1
DP/OH	0.398	340	42	95	LAMINAR	0	42	11.1
DP/CSG	0.427	307	39	94	LAMINAR	0	39	8.5
DP/RIS	1.325	98	13	85	LAMINAR	0	13	0.2
TOTAL VOLUME		825	TOTAL PRESSURE DROP					26.3

LAG: 49.1 MINUTES 3572 STROKES #1 AND 3360 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1577.1 HHP 650 IMPACT FORCE 1473
 % SURFACE PRESSURE 53.1 HHP/sqin 5.51 JET VELOCITY 133

PRESSURE BREAKDOWN:

SURFACE 46.5
 STRING 886.5
 BIT 1577.1
 ANNULUS 26.3
 TOTAL 2536.4 PUMP PRESSURE 2970.0 % DIFFERENCE 14.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	9.20	HYDROSTATIC PRESSURE 2982.0
CIRCULATING: ECD	9.28	CIRCULATING PRESSURE 3008.3
PULLING OUT: TRIP MARGIN	0.16	ESTIMATED SWAB 52.6
EFFECTIVE MUD WEIGHT	9.04	BOTTOM HOLE PRESSURE 2929.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2000.0 AND TVD 1999.9

SPM 1 72 SPM 2 68 FLOW RATE 700

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	61	102	LAMINAR	1	60	5.5
HWDP/OH	0.398	33	42	95	LAMINAR	0	41	1.1
DP/OH	0.398	379	42	95	LAMINAR	0	41	12.3
DP/CSG	0.427	307	39	94	LAMINAR	0	39	8.4
DP/RIS	1.325	98	13	85	LAMINAR	0	13	0.2
TOTAL VOLUME		865			TOTAL PRESSURE DROP		27.5	

LAG: 51.9 MINUTES 3734 STROKES #1 AND 3533 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1550.6 HHP 634 IMPACT FORCE 1448
 % SURFACE PRESSURE 53.4 HHP/sqin 5.38 JET VELOCITY 132

PRESSURE BREAKDOWN:

SURFACE 45.8
 STRING 899.6
 BIT 1550.6
 ANNULUS 27.5
 TOTAL 2523.5 PUMP PRESSURE 2904.5 % DIFFERENCE 13.1

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 3138.9
CIRCULATING:	ECD 9.28	CIRCULATING PRESSURE 3166.4
PULLING OUT:	TRIP MARGIN 0.16	ESTIMATED SWAB 55.0
	EFFECTIVE MUD WEIGHT 9.04	BOTTOM HOLE PRESSURE 3083.9

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2100.0 AND TVD 2099.9

SPM 1 73 SPM 2 68 FLOW RATE 706

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	61	115	LAMINAR	1	61	6.8
HWDP/OH	0.398	33	42	108	LAMINAR	0	42	1.4
DP/OH	0.398	419	42	108	LAMINAR	0	42	17.1
DP/CSG	0.427	307	39	107	LAMINAR	0	39	10.6
DP/RIS	1.325	98	13	97	LAMINAR	0	13	0.3
TOTAL VOLUME		905			TOTAL PRESSURE DROP			36.1

LAG: 53.8 MINUTES 3927 STROKES #1 AND 3675 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1576.9	HHP	650	IMPACT FORCE	1473
% SURFACE PRESSURE	53.2	HHP/sqin	5.51	JET VELOCITY	133

PRESSURE BREAKDOWN:

SURFACE	48.0		
STRING	969.5		
BIT	1576.9		
ANNULUS	36.1		
TOTAL	2630.5	PUMP PRESSURE	2963.6
		% DIFFERENCE	11.2

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 3295.9
CIRCULATING:	ECD 9.30	CIRCULATING PRESSURE 3331.9
PULLING OUT:	TRIP MARGIN 0.20	ESTIMATED SWAB 72.1
	EFFECTIVE MUD WEIGHT 9.00	BOTTOM HOLE PRESSURE 3223.7

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2200.0 AND TVD 2199.9

SPM 1 72 SPM 2 68 FLOW RATE 701

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	61	104	LAMINAR	1	60	5.8
HWDP/OH	0.398	33	42	95	LAMINAR	0	42	1.1
DP/OH	0.398	459	42	95	LAMINAR	0	42	15.1
DP/CSG	0.427	307	39	94	LAMINAR	0	39	8.5
DP/RIS	1.325	98	13	82	LAMINAR	0	13	0.2
TOTAL VOLUME		944			TOTAL PRESSURE DROP		30.7	

LAG: 56.6 MINUTES 4091 STROKES #1 AND 3845 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1552.3 MHP 635 IMPACT FORCE 1450
 % SURFACE PRESSURE 53.1 MHP/sqin 5.38 JET VELOCITY 132

PRESSURE BREAKDOWN:

SURFACE 48.6
 STRING 1009.8
 BIT 1552.3
 ANNULUS 30.7
 TOTAL 2641.4 PUMP PRESSURE 2923.3 % DIFFERENCE 9.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 3452.8
CIRCULATING:	ECD 9.28	CIRCULATING PRESSURE 3483.5
PULLING OUT:	TRIP MARGIN 0.16	ESTIMATED SWAB 61.4
	EFFECTIVE MUD WEIGHT 9.04	BOTTOM HOLE PRESSURE 3391.4

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2300.0 AND TVD 2299.8

SPM 1 73 SPM 2 67 FLOW RATE 700

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	61	104	LAMINAR	1	60	5.8
HWDP/OH	0.398	33	42	95	LAMINAR	0	41	1.1
DP/OH	0.398	499	42	95	LAMINAR	0	41	16.4
DP/CSG	0.427	307	39	94	LAMINAR	0	39	8.5
DP/RIS	1.325	98	13	82	LAMINAR	0	13	0.2
TOTAL VOLUME		984			TOTAL PRESSURE DROP		32.0	

LAG: 59.1 MINUTES 4297 STROKES #1 AND 3974 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1547.1 HHP 631 IMPACT FORCE 1445
 % SURFACE PRESSURE 52.3 HHP/sqin 5.36 JET VELOCITY 132

PRESSURE BREAKDOWN:

SURFACE 48.4
 STRING 1034.6
 BIT 1547.1
 ANNULUS 32.0
 TOTAL 2662.1 PUMP PRESSURE 2958.9 % DIFFERENCE 10.0

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 3609.7
CIRCULATING:	ECD 9.28	CIRCULATING PRESSURE 3641.7
PULLING OUT:	TRIP MARGIN 0.16	ESTIMATED SWAB 64.0
	EFFECTIVE MUD WEIGHT 9.04	BOTTOM HOLE PRESSURE 3545.7

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2400.0 AND TVD 2399.8

SPM 1 72 SPM 2 66 FLOW RATE 693

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	60	104	LAMINAR	1	59	5.8
HWDP/OH	0.398	33	41	95	LAMINAR	0	41	1.1
DP/OH	0.398	539	41	95	LAMINAR	0	41	17.7
DP/CSG	0.427	307	39	94	LAMINAR	0	38	8.5
DP/RIS	1.325	98	12	82	LAMINAR	0	12	0.2
TOTAL VOLUME		1024	TOTAL PRESSURE DROP					33.2

LAG: 62.0 MINUTES 4482 STROKES #1 AND 4124 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1519.1	HHP	614	IMPACT FORCE	1419
% SURFACE PRESSURE	51.4	HHP/sqin	5.21	JET VELOCITY	131

PRESSURE BREAKDOWN:

SURFACE	47.6		
STRING	1045.2		
BIT	1519.1		
ANNULUS	33.2		
TOTAL	2645.1	PUMP PRESSURE	2955.0
		% DIFFERENCE	10.5

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 3766.6
CIRCULATING:	ECD 9.28	CIRCULATING PRESSURE 3799.7
PULLING OUT:	TRIP MARGIN 0.16	ESTIMATED SWAB 66.3
	EFFECTIVE MUD WEIGHT 9.04	BOTTOM HOLE PRESSURE 3700.2

CORE LAB

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2500.0 AND TVD 2499.8

SPM 1 66 SPM 2 70 FLOW RATE 683

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	59	107	LAMINAR	1	59	5.9
HWDP/OH	0.398	33	41	100	LAMINAR	0	40	1.2
DP/OH	0.398	579	41	100	LAMINAR	0	40	20.5
DP/CSG	0.427	307	38	100	LAMINAR	0	38	9.2
DP/RIS	1.325	98	12	91	LAMINAR	0	12	0.2
TOTAL VOLUME		1064			TOTAL PRESSURE DROP		37.0	

LAG: 65.4 MINUTES 4346 STROKES #1 AND 4595 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1475.1 HHP 588 IMPACT FORCE 1377
 % SURFACE PRESSURE 51.3 HHP/sqin 4.99 JET VELOCITY 129

PRESSURE BREAKDOWN:

SURFACE 43.8
 STRING 986.2
 BIT 1475.1
 ANNULUS 37.0
 TOTAL 2542.1 PUMP PRESSURE 2876.4 % DIFFERENCE 11.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 3923.6
CIRCULATING:	ECD 9.29	CIRCULATING PRESSURE 3960.5
PULLING OUT:	TRIP MARGIN 0.17	ESTIMATED SWAB 74.0
	EFFECTIVE MUD WEIGHT 9.03	BOTTOM HOLE PRESSURE 3849.6

CORE LAB

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2600.0 AND TVD 2599.8

SPM 1 69 SPM 2 69 FLOW RATE 689

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	60	107	LAMINAR	1	59	5.9
HWDP/OH	0.398	33	41	100	LAMINAR	0	41	1.2
DP/OH	0.398	618	41	100	LAMINAR	0	41	22.0
DP/CSG	0.427	307	38	100	LAMINAR	0	38	9.3
DP/RIS	1.325	98	12	91	LAMINAR	0	12	0.2
TOTAL VOLUME		1104			TOTAL PRESSURE DROP			38.5

LAG: 67.3 MINUTES 4619 STROKES #1 AND 4657 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP	1500.7	HHP	603	IMPACT FORCE	1401
% SURFACE PRESSURE	51.7	HHP/sqin	5.12	JET VELOCITY	130

PRESSURE BREAKDOWN:

SURFACE	44.5		
STRING	1027.3		
BIT	1500.7		
ANNULUS	38.5		
TOTAL	2611.0	PUMP PRESSURE	2900.9
		% DIFFERENCE	10.0

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 4080.5
CIRCULATING:	ECD 9.29	CIRCULATING PRESSURE 4119.0
PULLING OUT:	TRIP MARGIN 0.17	ESTIMATED SWAB 77.0
	EFFECTIVE MUD WEIGHT 9.03	BOTTOM HOLE PRESSURE 4003.5

CORE LAB

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2700.0 AND TVD 2699.8

SPM 1 69 SPM 2 68 FLOW RATE 687

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	60	111	LAMINAR	1	59	6.2
HWDP/OH	0.398	33	41	103	LAMINAR	0	41	1.2
DP/OH	0.398	658	41	103	LAMINAR	0	41	24.4
DP/CSG	0.427	307	38	102	LAMINAR	0	38	9.6
DP/RIS	1.325	98	12	92	LAMINAR	0	12	0.2
TOTAL VOLUME		1144			TOTAL PRESSURE DROP		41.7	

LAG: 69.9 MINUTES 4825 STROKES #1 AND 4785 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1490.7 HHP 597 IMPACT FORCE 1392
 % SURFACE PRESSURE 49.1 HHP/sqin 5.07 JET VELOCITY 129

PRESSURE BREAKDOWN:

SURFACE 45.6
 STRING 1079.4
 BIT 1490.7
 ANNULUS 41.7
 TOTAL 2657.5 PUMP PRESSURE 3035.0 % DIFFERENCE 12.4

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 4237.5
CIRCULATING:	ECD 9.29	CIRCULATING PRESSURE 4279.2
PULLING OUT:	TRIP MARGIN 0.18	ESTIMATED SWAB 83.5
	EFFECTIVE MUD WEIGHT 9.02	BOTTOM HOLE PRESSURE 4154.0

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2800.0 AND TVD 2799.8

SPM 1 68 SPM 2 68 FLOW RATE. 680

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	59	131	LAMINAR	1	59	8.3
HWDP/OH	0.398	33	41	122	LAMINAR	0	40	1.6
DP/OH	0.398	698	41	122	LAMINAR	0	40	34.8
DP/CSG	0.427	307	38	121	LAMINAR	0	38	12.9
DP/RIS	1.325	98	12	109	LAMINAR	0	12	0.3
TOTAL VOLUME		1183			TOTAL PRESSURE DROP			58.0

LAG: 73.1 MINUTES 4963 STROKES #1 AND 4982 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1459.8 HHP 579 IMPACT FORCE 1363
 % SURFACE PRESSURE 48.2 HHP/sqin 4.91 JET VELOCITY 128

PRESSURE BREAKDOWN:

SURFACE 47.1
 STRING 1140.9
 BIT 1459.8
 ANNULUS 58.0
 TOTAL 2705.8 PUMP PRESSURE 3026.4 % DIFFERENCE 10.6

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING:	MUD WEIGHT 9.20	HYDROSTATIC PRESSURE 4394.4
CIRCULATING:	ECD 9.32	CIRCULATING PRESSURE 4452.3
PULLING OUT:	TRIP MARGIN 0.24	ESTIMATED SWAB 115.9
	EFFECTIVE MUD WEIGHT 8.96	BOTTOM HOLE PRESSURE 4278.5

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 2900.0 AND TVD 2899.8

SPM 1 69 SPM 2 68 FLOW RATE 683

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	59	123	LAMINAR	1	59	7.5
HWDP/OH	0.398	33	41	115	LAMINAR	0	41	1.5
DP/OH	0.398	738	41	115	LAMINAR	0	41	33.3
DP/CSG	0.427	307	38	114	LAMINAR	0	38	11.7
DP/RIS	1.325	98	12	103	LAMINAR	0	12	0.3
TOTAL VOLUME		1223	TOTAL PRESSURE DROP			54.3		

LAG: 75.2 MINUTES 5172 STROKES #1 AND 5108 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1475.5 HHP 588 IMPACT FORCE 1378
 % SURFACE PRESSURE 49.6 HHP/sqin 4.99 JET VELOCITY 129

PRESSURE BREAKDOWN:

SURFACE 46.4
 STRING 1151.9
 BIT 1475.5
 ANNULUS 54.3
 TOTAL 2728.1 PUMP PRESSURE 2974.9 % DIFFERENCE 8.3

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	9.20	HYDROSTATIC PRESSURE 4551.3
CIRCULATING: ECD	9.31	CIRCULATING PRESSURE 4605.6
PULLING OUT: TRIP MARGIN	0.22	ESTIMATED SWAB 108.5
EFFECTIVE MUD WEIGHT	8.98	BOTTOM HOLE PRESSURE 4442.8

CORE LAB

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 3000.0 AND TVD 2999.7

SPM 1 67 SPM 2 67 FLOW RATE 670

ANNULAR HYDRAULICS:

ANNULUS TYPE	VOL/UNIT	VOL	ANN VEL	CRIT VEL	TYPE OF FLOW	SLIP VEL	ASCEND VEL	PRESSURE DROP
HWDC/OH	0.274	47	58	149	LAMINAR	0	58	10.4
HWDP/OH	0.398	33	40	140	LAMINAR	0	40	2.1
DP/OH	0.398	778	40	140	LAMINAR	0	40	49.9
DP/CSG	0.427	307	37	140	LAMINAR	0	37	16.7
DP/RIS	1.325	98	12	128	LAMINAR	0	12	0.4
TOTAL VOLUME		1263			TOTAL PRESSURE DROP			79.6

LAG: 79.1 MINUTES 5337 STROKES #1 AND 5277 STROKES #2

BIT HYDRAULICS:

PRESSURE DROP 1420.8 HHP 556 IMPACT FORCE 1327
 % SURFACE PRESSURE 47.0 HHP/sqin 4.72 JET VELOCITY 126

PRESSURE BREAKDOWN:

SURFACE 46.9
 STRING 1191.3
 BIT 1420.8
 ANNULUS 79.6
 TOTAL 2738.7 PUMP PRESSURE 3022.7 % DIFFERENCE 9.4

BOTTOM HOLE PRESSURES:

	DENSITY UNITS	PRESSURE UNITS
NOT CIRCULATING: MUD WEIGHT	9.20	HYDROSTATIC PRESSURE 4708.1
CIRCULATING: ECD	9.36	CIRCULATING PRESSURE 4787.8
PULLING OUT: TRIP MARGIN	0.31	ESTIMATED SWAB 159.3
EFFECTIVE MUD WEIGHT	8.89	BOTTOM HOLE PRESSURE 4548.9

(c). 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 Australian 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 dependent 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	74.0-	209.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	18	18 18
COST	0.00	TRIP TIME	2.4	BIT RUN		135.0
TOTAL HOURS	3.28	TOTAL TURNS	13555	CONDITION	T2	R5 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
75.0	5.1	8.6	72	8.9	1.13	0.14	85	831	11424	8.4	14.2
80.0	21.7	1.0	38	8.6	0.53	0.37	618	196	2067	8.4	14.2
85.0	42.8	1.0	48	8.6	0.46	0.49	955	99	1173	8.4	14.2
90.0	21.3	1.0	53	8.6	0.58	0.72	1706	198.86	868.33	8.4	14.2
95.0	23.8	1.0	61	8.6	0.58	0.93	2480	178.36	704.05	8.4	14.3
100.0	35.9	1.0	61	8.6	0.52	1.07	2987	118.28	591.40	8.4	14.3
105.0	50.5	1.0	63	8.6	0.47	1.17	3364	83.98	509.56	8.4	14.3
110.0	63.8	1.0	82	8.6	0.48	1.25	3747	66.44	448.02	8.4	14.3
115.0	53.9	1.0	82	8.6	0.50	1.34	4202	78.69	402.98	8.4	14.3
120.0	30.1	1.0	83	8.6	0.59	1.51	5033	140.90	374.49	8.4	14.4
125.0	18.2	1.0	82	8.6	0.67	1.78	6385	232.44	360.56	8.4	14.4
130.0	15.1	1.9	83	8.6	0.76	2.11	8030	280.61	353.42	8.4	14.4
135.0	74.7	3.2	79	8.6	0.53	2.18	8349	56.78	329.11	8.4	14.4
140.0	87.0	1.8	84	8.6	0.47	2.24	8639	48.77	307.87	8.4	14.4
145.0	90.0	2.0	78	8.6	0.46	2.29	8899	47.12	289.51	8.4	14.5
150.0	32.7	2.1	79	8.6	0.64	2.45	9627	129.59	278.99	8.4	14.5
155.0	65.7	2.0	82	8.6	0.52	2.52	10002	64.56	265.75	8.4	14.5
160.0	94.3	2.1	50	8.6	0.38	2.58	10162	44.97	252.92	8.4	14.5
165.0	51.7	2.3	81	8.6	0.57	2.67	10630	81.99	243.52	8.4	14.6
170.0	78.6	2.9	80	8.6	0.52	2.74	10936	53.95	233.65	8.4	14.6
175.0	72.0	2.8	81	8.6	0.53	2.81	11272	58.90	225.00	8.4	14.6
180.0	87.0	2.4	78	8.6	0.48	2.86	11542	48.77	216.69	8.4	14.6
185.0	46.9	1.7	85	8.6	0.57	2.97	12084	90.47	211.00	8.4	14.6
190.0	93.8	1.7	75	8.6	0.44	3.02	12325	45.24	203.86	8.4	14.7
195.0	104.7	3.0	71	8.6	0.45	3.07	12530	40.53	197.11	8.4	14.7
200.0	57.4	3.1	79	8.6	0.57	3.16	12940	73.93	192.22	8.4	14.7
205.0	60.4	2.5	83	8.6	0.55	3.24	13354	70.21	187.56	8.4	14.7
209.0	95.7	3.0	80	8.6	0.48	3.28	13555	44.32	183.32	8.4	14.7

BIT NUMBER	2	IADC CODE	111	INTERVAL	209.0-	806.0
HTC OSC3AJ		SIZE	17.500	NOZZLES	20	20 20
COST	4442.00	TRIP TIME	3.7	BIT RUN		597.0
TOTAL HOURS	12.77	TOTAL TURNS	106641	CONDITION	T2	R2 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
210.0	94.7	3.0	84	8.6	0.52	0.01	53	45	20178	8.4	14.7
215.0	165.1	3.1	81	8.6	0.41	0.04	200	26	3384	8.4	14.8
220.0	236.8	2.1	81	8.6	0.33	0.06	302	18	1854	8.4	14.8
225.0	189.5	2.9	78	8.6	0.38	0.09	425	22	1282	8.4	14.8
230.0	174.7	3.7	83	8.6	0.42	0.12	568	24.28	982.37	8.4	14.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
235.0	98.4	4.9	78	8.6	0.55	0.17	807	43.12	801.74	8.4	14.8
240.0	37.0	2.5	84	8.6	0.68	0.30	1490	114.74	690.94	8.4	14.9
245.0	88.2	3.5	85	8.6	0.55	0.36	1778	48.06	601.65	8.4	14.9
250.0	68.4	6.2	125	8.6	0.75	0.43	2325	61.97	535.83	8.4	14.9
255.0	110.2	5.6	150	8.6	0.67	0.48	2733	38.48	481.77	8.4	14.9
260.0	214.3	8.0	150	8.6	0.57	0.50	2943	19.79	436.48	8.4	14.9
265.0	58.8	6.1	150	8.6	0.82	0.59	3708	72.10	403.95	8.4	15.0
270.0	195.7	7.6	150	8.6	0.58	0.61	3938	21.68	372.61	8.4	15.0
275.0	168.2	4.8	148	8.6	0.57	0.64	4203	25.21	346.29	8.4	15.0
280.0	139.7	5.4	140	8.6	0.60	0.68	4503	30.36	324.05	8.4	15.0
285.0	191.5	6.5	140	8.6	0.56	0.70	4723	22.15	304.18	8.4	15.0
290.0	107.8	4.8	140	8.6	0.64	0.75	5112	39.35	287.84	8.4	15.1
295.0	136.4	7.2	140	8.6	0.64	0.79	5420	31.10	272.91	8.4	15.1
300.0	176.5	7.8	140	8.6	0.59	0.82	5658	24.03	259.23	8.4	15.1
305.0	183.7	8.8	140	8.6	0.60	0.84	5887	23.09	246.94	8.4	15.1
310.0	160.7	8.2	140	8.6	0.62	0.87	6148	26.39	236.02	8.4	15.1
315.0	125.0	4.3	140	8.6	0.60	0.91	6484	33.93	226.49	8.4	15.2
320.0	181.8	7.8	140	8.6	0.59	0.94	6715	23.33	217.33	8.4	15.2
325.0	180.0	8.2	140	8.6	0.60	0.97	6949	23.56	208.98	8.4	15.2
330.0	110.9	7.4	140	8.6	0.69	1.01	7328	38.25	201.93	8.4	15.2
335.0	117.3	8.5	140	8.6	0.70	1.06	7686	36.17	195.35	8.4	15.2
340.0	134.3	6.8	140	8.6	0.64	1.09	7998	31.57	189.10	8.4	15.3
345.0	75.6	5.2	140	8.6	0.73	1.16	8554	56.08	184.21	8.4	15.3
350.0	33.0	3.9	140	8.6	0.85	1.31	9828	128.64	182.24	8.4	15.3
355.0	31.9	4.6	140	8.6	0.89	1.47	11143	132.77	180.54	8.4	15.3
360.0	81.1	5.8	140	8.6	0.73	1.53	11661	52.31	176.30	8.4	15.3
365.0	77.3	6.0	140	8.6	0.74	1.59	12204	54.90	172.41	8.4	15.4
370.0	63.8	8.8	140	8.6	0.84	1.67	12862	66.44	169.11	8.4	15.4
375.0	79.6	9.0	140	8.6	0.79	1.74	13390	53.25	165.62	8.4	15.4
380.0	84.1	12.5	140	8.6	0.84	1.79	13889	50.42	162.26	8.4	15.4
385.0	75.6	11.6	140	8.6	0.85	1.86	14444	56.08	159.24	8.4	15.4
390.0	73.5	12.1	140	8.6	0.86	1.93	15016	57.72	156.44	8.4	15.5
395.0	76.6	10.7	140	8.6	0.83	1.99	15564	55.37	153.72	8.4	15.5
400.0	56.6	11.4	140	8.6	0.91	2.08	16307	74.96	151.66	8.4	15.5
405.0	17.8	13.8	140	8.6	1.24	2.36	18665	238.16	153.86	8.4	15.5
410.0	76.3	11.3	140	8.6	0.84	2.43	19216	55.60	151.42	8.4	15.5
415.0	43.4	10.4	140	8.6	0.96	2.54	20184	97.78	150.12	8.4	15.5
420.0	102.3	10.0	140	8.6	0.75	2.59	20595	41.47	147.54	8.4	15.6
425.0	91.4	8.8	140	8.6	0.76	2.65	21055	46.42	145.20	8.4	15.6
430.0	82.2	11.2	140	8.6	0.82	2.71	21566	51.60	143.08	8.4	15.6
435.0	72.0	13.6	140	8.6	0.89	2.78	22149	58.90	141.22	8.4	15.6
440.0	92.8	13.7	140	8.6	0.83	2.83	22602	45.71	139.15	8.4	15.6
445.0	75.2	11.8	140	8.6	0.85	2.90	23160	56.43	137.40	8.4	15.7
450.0	52.0	11.7	140	8.6	0.94	2.99	23968	81.52	136.24	8.4	15.7
455.0	43.2	9.5	140	8.6	0.94	3.11	24941	98.25	135.47	8.4	15.7
460.0	66.7	11.6	140	8.6	0.88	3.19	25571	63.62	134.04	8.4	15.7
465.0	50.3	13.2	140	8.6	0.97	3.29	26406	84.35	133.07	8.4	15.7
470.0	101.7	10.5	140	8.6	0.76	3.33	26819	41.70	131.32	8.4	15.7
475.0	55.9	13.6	140	8.6	0.95	3.42	27570	75.87	130.28	8.4	15.8
480.0	62.7	15.4	140	8.6	0.95	3.50	28240	67.62	129.12	8.4	15.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
485.0	60.0	14.3	140	8.6	0.94	3.59	28940	70.68	128.06	8.4	15.8
490.0	56.4	15.4	140	8.6	0.97	3.68	29684	75.16	127.12	8.4	15.8
495.0	33.5	11.3	140	8.6	1.04	3.82	30937	126.52	127.11	8.4	15.8
500.0	48.8	16.6	140	8.7	1.02	3.93	31797	86.82	126.42	8.4	15.8
505.0	71.1	14.3	140	8.7	0.89	4.00	32388	59.61	125.29	8.4	15.9
510.0	54.4	12.1	140	8.7	0.92	4.09	33160	77.99	124.50	8.4	15.9
515.0	59.2	13.5	140	8.7	0.92	4.17	33869	71.63	123.64	8.4	15.9
520.0	51.6	14.5	140	8.8	0.96	4.27	34684	82.23	122.97	8.4	15.9
525.0	48.8	13.1	140	8.8	0.95	4.37	35545	86.94	122.40	8.4	15.9
530.0	46.6	15.2	140	8.9	0.99	4.48	36445	90.95	121.91	8.4	16.0
535.0	63.4	16.5	140	8.9	0.93	4.56	37108	66.91	121.07	8.4	16.0
540.0	76.6	15.7	140	8.9	0.87	4.62	37656	55.37	120.08	8.4	16.0
545.0	78.3	15.6	140	8.9	0.86	4.69	38193	54.19	119.10	8.4	16.0
550.0	84.8	18.3	140	8.9	0.87	4.75	38688	50.03	118.08	8.4	16.0
555.0	43.5	18.1	140	8.9	1.04	4.86	39654	97.47	117.79	8.4	16.0
560.0	56.1	16.3	140	8.9	0.95	4.95	40403	75.63	117.19	8.4	16.1
565.0	38.4	15.8	140	8.9	1.04	5.08	41497	110.50	117.09	8.4	16.1
570.0	33.5	14.9	140	8.9	1.06	5.23	42750	126.52	117.22	8.4	16.1
575.0	32.2	14.9	140	8.9	1.07	5.39	44054	131.71	117.42	8.4	16.1
580.0	39.6	16.7	140	8.9	1.05	5.51	45116	107.20	117.28	8.4	16.1
585.0	55.7	14.8	140	8.9	0.94	5.60	45870	76.10	116.73	8.4	16.1
590.0	52.9	16.9	140	8.9	0.98	5.70	46664	80.21	116.26	8.4	16.2
595.0	42.5	16.0	140	8.9	1.02	5.81	47653	99.90	116.04	8.4	16.2
600.0	37.9	16.5	140	8.9	1.06	5.95	48762	111.92	115.99	8.4	16.2
605.0	32.7	18.1	140	8.9	1.12	6.10	50045	129.59	116.16	8.4	16.2
610.0	40.4	20.4	140	8.9	1.09	6.22	51083	104.85	116.02	8.4	16.2
615.0	35.9	21.6	140	8.9	1.14	6.36	52252	118.04	116.05	8.4	16.2
620.0	37.7	19.4	140	8.9	1.10	6.49	53365	112.39	116.00	8.4	16.2
625.0	43.6	19.0	140	8.9	1.05	6.61	54329	97.31	115.78	8.4	16.3
630.0	45.9	21.3	140	8.9	1.07	6.72	55244	92.36	115.50	8.4	16.3
635.0	51.4	20.2	140	8.9	1.03	6.82	56060	82.46	115.11	8.4	16.3
640.0	53.7	21.6	140	8.9	1.03	6.91	56842	78.91	114.69	8.4	16.3
645.0	37.9	25.9	140	9.0	1.17	7.04	57949	111.84	114.66	8.4	16.3
650.0	32.0	26.6	140	9.0	1.22	7.20	59263	132.65	114.86	8.4	16.3
655.0	31.7	27.2	140	9.0	1.22	7.35	60586	133.59	115.07	8.4	16.4
660.0	35.8	27.5	140	9.0	1.19	7.49	61760	118.51	115.11	8.4	16.4
665.0	26.5	28.6	140	9.0	1.29	7.68	63346	160.22	115.61	8.4	16.4
670.0	24.0	31.6	140	9.0	1.35	7.89	65099	176.94	116.27	8.4	16.4
675.0	22.8	31.3	140	9.0	1.37	8.11	66940	185.90	117.02	8.4	16.4
680.0	25.3	28.7	140	9.0	1.31	8.31	68601	167.76	117.56	8.4	16.4
685.0	24.4	29.7	140	9.0	1.33	8.51	70323	173.88	118.15	8.4	16.5
690.0	33.9	29.5	140	9.0	1.23	8.66	71562	125.11	118.22	8.4	16.5
695.0	27.8	29.8	140	9.0	1.29	8.84	73074	152.68	118.57	8.4	16.5
700.0	35.0	30.6	140	9.0	1.23	8.98	74276	121.34	118.60	8.4	16.5
710.0	31.1	32.6	140	9.0	1.29	9.31	76980	136.54	118.96	8.4	16.5
715.0	28.0	32.6	140	9.0	1.32	9.48	78482	151.67	119.28	8.4	16.5
720.0	27.0	36.7	140	9.0	1.37	9.67	80038	157.15	119.65	8.4	16.6
725.0	29.6	36.9	140	9.0	1.35	9.84	81457	143.25	119.88	8.4	16.6
730.0	28.4	35.8	140	9.0	1.35	10.01	82934	149.14	120.16	8.4	16.6
735.0	27.2	36.3	140	9.0	1.37	10.20	84476	155.74	120.50	8.4	16.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
740.0	27.1	34.9	140	9.0	1.35	10.38	86026	156.45	120.84	8.4	16.6
745.0	30.4	34.6	140	9.0	1.32	10.55	87406	139.32	121.01	8.4	16.6
750.0	25.5	35.8	140	9.0	1.38	10.74	89051	166.13	121.43	8.4	16.7
755.0	23.2	34.4	142	9.0	1.40	10.96	90889	182.78	121.99	8.4	16.7
760.0	30.7	34.0	145	9.0	1.32	11.12	92308	138.30	122.14	8.4	16.7
765.0	27.6	35.0	145	9.0	1.36	11.30	93887	153.93	122.43	8.4	16.7
770.0	28.8	39.7	145	9.0	1.39	11.48	95395	147.02	122.64	8.4	16.7
775.0	30.8	38.9	145	9.0	1.37	11.64	96805	137.52	122.78	8.4	16.7
780.0	26.1	38.5	145	9.0	1.41	11.83	98473	162.57	123.12	8.4	16.7
785.0	29.5	38.1	145	9.0	1.37	12.00	99949	143.96	123.31	8.4	16.8
790.0	28.7	38.2	145	9.0	1.38	12.17	101465	147.73	123.52	8.4	16.8
795.0	26.7	38.8	145	9.0	1.41	12.36	103091	158.57	123.81	8.4	16.8
800.0	23.0	38.3	145	9.0	1.45	12.58	104983	184.48	124.33	8.4	16.8
805.0	31.9	37.0	145	9.0	1.34	12.74	106349	133.12	124.40	8.4	16.8
806.0	29.8	37.1	145	9.0	1.36	12.77	106641	142.54	124.43	8.4	16.8

BIT NUMBER	3	IADC CODE	114	INTERVAL	806.0- 1751.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 18
COST	2201.00	TRIP TIME	5.7	BIT RUN	945.0
TOTAL HOURS	22.01	TOTAL TURNS	196061	CONDITION	T4 R6 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
807.0	24.0	29.3	107	9.1	1.36	0.06	283	177	26728	8.4	16.8
808.0	24.8	27.6	83	9.2	1.24	0.10	484	171	13449	8.4	16.8
809.0	12.7	29.2	87	9.2	1.48	0.17	897	335	9078	8.4	16.8
810.0	20.4	28.1	103	9.2	1.37	0.22	1200	208	6860	8.4	16.8
811.0	16.7	28.5	108	9.2	1.45	0.28	1586	253	5539	8.4	16.8
812.0	17.2	29.6	106	9.2	1.45	0.34	1956	246	4657	8.4	16.8
813.0	19.7	28.7	110	9.2	1.41	0.39	2290	216	4022	8.4	16.8
814.0	20.5	24.1	120	9.0	1.39	0.44	2642	207	3545	8.4	16.8
815.0	22.4	30.5	130	9.0	1.48	0.49	2990	190	3173	8.4	16.8
816.0	20.9	31.0	130	9.0	1.50	0.53	3363	203	2876	8.4	16.8
817.0	16.4	27.5	130	9.0	1.53	0.59	3838	258	2638	8.4	16.8
818.0	23.2	29.4	130	9.0	1.45	0.64	4173	183	2433	8.4	16.8
819.0	25.2	31.7	130	9.0	1.46	0.68	4483	168	2259	8.4	16.9
820.0	26.3	31.8	130	9.0	1.44	0.72	4780	161	2109	8.4	16.9
821.0	28.3	33.4	130	9.0	1.44	0.75	5055	150	1978	8.4	16.9
822.0	30.3	33.2	130	9.0	1.42	0.78	5313	140	1864	8.4	16.9
823.0	25.9	32.6	120	9.0	1.43	0.82	5591	164	1764	8.4	16.9
824.0	25.4	33.2	120	9.0	1.45	0.86	5875	167	1675	8.4	16.9
825.0	30.3	33.1	120	9.0	1.39	0.89	6113	140	1594	8.4	16.9
826.0	22.6	34.5	120	9.0	1.50	0.94	6431	187	1524	8.4	16.9
827.0	33.6	33.9	150	9.0	1.44	0.97	6699	126	1457	8.4	16.9
828.0	22.8	32.3	150	9.0	1.54	1.01	7094	186	1399	8.4	16.9
829.0	31.6	32.0	150	9.0	1.43	1.04	7379	134	1344	8.4	16.9
830.0	29.0	31.4	150	9.0	1.45	1.08	7689	146	1294	8.4	16.9
831.0	28.3	32.4	150	9.0	1.47	1.11	8006	150	1249	8.4	16.9
832.0	25.9	33.3	150	9.0	1.51	1.15	8354	164	1207	8.4	16.9
833.0	33.3	34.8	150	9.0	1.45	1.18	8624	127	1167	8.4	16.9
834.0	26.7	33.5	150	9.0	1.51	1.22	8961	159	1131	8.4	16.9
835.0	30.3	33.3	150	9.0	1.46	1.25	9259	140	1097	8.4	16.9
836.0	29.3	33.7	150	9.0	1.48	1.29	9566	145	1065	8.4	16.9
837.0	26.9	34.8	150	9.0	1.52	1.32	9901	158	1036	8.4	16.9
838.0	30.0	33.5	150	9.0	1.47	1.36	10201	141	1008	8.4	16.9
839.0	25.0	33.5	150	9.0	1.53	1.40	10561	169.64	982.45	8.4	16.9
840.0	37.9	32.4	150	9.0	1.38	1.42	10799	111.92	956.84	8.4	16.9
841.0	46.2	32.9	150	9.0	1.32	1.45	10994	91.89	932.13	8.4	16.9
842.0	38.3	32.3	150	9.0	1.37	1.47	11229	110.74	909.31	8.4	16.9
843.0	37.1	32.8	150	9.0	1.39	1.50	11471	114.27	887.83	8.4	16.9
844.0	35.3	33.3	150	9.0	1.41	1.53	11726	120.16	867.62	8.4	16.9
845.0	32.4	33.4	150	9.0	1.44	1.56	12004	130.76	848.73	8.4	16.9
846.0	38.7	33.6	150	9.0	1.39	1.58	12236	109.56	830.25	8.4	16.9
847.0	33.0	33.0	150	9.0	1.43	1.61	12509	128.41	813.13	8.4	16.9
848.0	30.5	32.8	150	9.0	1.45	1.65	12804	139.01	797.08	8.4	16.9
849.0	31.6	32.1	150	9.0	1.43	1.68	13089	134.30	781.67	8.4	16.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
850.0	38.3	31.9	150	9.0	1.37	1.70	13324	110.74	766.42	8.4	16.9
851.0	41.9	31.5	150	9.0	1.34	1.73	13539	101.31	751.64	8.4	16.9
852.0	46.2	29.8	150	9.0	1.28	1.75	13734	91.89	737.30	8.4	16.9
853.0	47.4	29.6	150	9.0	1.27	1.77	13924	89.53	723.52	8.4	16.9
854.0	25.2	31.2	150	9.0	1.49	1.81	14281	168.46	711.95	8.4	17.0
855.0	20.7	27.6	150	9.0	1.50	1.86	14716	204.98	701.61	8.4	17.0
856.0	35.3	31.9	150	9.0	1.40	1.89	14971	120.16	689.98	8.4	17.0
857.0	41.9	29.5	150	9.0	1.31	1.91	15186	101.31	678.43	8.4	17.0
858.0	52.9	30.8	150	9.0	1.25	1.93	15356	80.11	666.93	8.4	17.0
859.0	40.4	33.2	150	9.0	1.37	1.96	15579	104.85	656.32	8.4	17.0
860.0	48.0	32.6	150	9.0	1.31	1.98	15766	88.35	645.80	8.4	17.0
861.0	45.6	31.4	150	9.0	1.31	2.00	15964	93.07	635.75	8.4	17.0
862.0	49.3	33.1	150	9.0	1.30	2.02	16146	86.00	625.94	8.4	17.0
863.0	46.8	30.4	150	9.0	1.29	2.04	16339	90.71	616.55	8.4	17.0
864.0	45.0	29.2	150	9.0	1.28	2.06	16539	94.24	607.54	8.4	17.0
865.0	46.2	32.4	150	9.0	1.32	2.08	16734	91.89	598.80	8.4	17.0
866.0	47.4	33.3	150	9.0	1.32	2.10	16924	89.53	590.31	8.4	17.0
867.0	39.6	34.0	150	9.0	1.38	2.13	17151	107.20	582.40	8.4	17.0
868.0	50.0	33.4	150	9.0	1.30	2.15	17331	84.82	574.37	8.4	17.0
869.0	54.5	33.1	150	9.0	1.27	2.17	17496	77.75	566.49	8.4	17.0
870.0	54.5	34.1	150	9.0	1.28	2.19	17661	77.75	558.85	8.4	17.0
871.0	44.4	31.9	150	9.0	1.32	2.21	17864	95.42	551.72	8.4	17.0
872.0	75.0	31.6	150	9.0	1.15	2.22	17984	56.55	544.22	8.4	17.0
873.0	34.6	32.4	150	9.0	1.41	2.25	18244	122.52	537.92	8.4	17.0
874.0	40.0	32.4	150	9.0	1.36	2.28	18469	106.03	531.57	8.4	17.0
875.0	48.6	35.0	150	9.0	1.33	2.30	18654	87.18	525.13	8.4	17.0
876.0	51.4	32.7	150	9.0	1.28	2.32	18829	82.46	518.81	8.4	17.0
877.0	57.1	34.5	150	9.0	1.27	2.33	18986	74.22	512.55	8.4	17.0
878.0	52.2	34.1	150	9.0	1.30	2.35	19159	81.29	506.56	8.4	17.0
879.0	46.8	33.4	150	9.0	1.32	2.37	19351	90.71	500.86	8.4	17.0
880.0	46.2	32.8	150	9.0	1.32	2.40	19546	91.89	495.33	8.4	17.0
881.0	40.4	33.7	150	9.0	1.37	2.42	19769	104.85	490.13	8.4	17.0
882.0	48.0	33.6	150	9.0	1.32	2.44	19956	88.35	484.84	8.4	17.0
883.0	63.2	35.4	150	9.0	1.25	2.46	20099	67.15	479.42	8.4	17.0
884.0	54.5	36.0	150	9.0	1.30	2.48	20264	77.75	474.27	8.4	17.0
885.0	53.7	34.8	150	9.0	1.29	2.49	20431	78.93	469.26	8.4	17.0
886.0	52.9	32.8	150	9.0	1.28	2.51	20601	80.11	464.40	8.4	17.0
887.0	38.7	35.2	150	9.0	1.41	2.54	20834	109.56	460.02	8.4	17.0
888.0	50.0	34.9	150	9.0	1.32	2.56	21014	84.82	455.44	8.4	17.0
889.0	41.4	33.8	150	9.0	1.37	2.58	21231	102.49	451.19	8.4	17.0
890.0	42.4	33.9	150	9.0	1.36	2.61	21444	100.13	447.01	8.4	17.0
891.0	42.4	33.9	150	9.0	1.36	2.63	21656	100.13	442.93	8.4	17.1
892.0	47.4	34.0	150	9.0	1.33	2.65	21846	89.53	438.82	8.4	17.1
893.0	42.4	32.1	150	9.0	1.34	2.68	22059	100.13	434.93	8.4	17.1
894.0	50.7	32.2	150	9.0	1.28	2.69	22236	83.64	430.93	8.4	17.1
895.0	59.0	30.5	150	9.0	1.22	2.71	22389	71.86	426.90	8.4	17.1
896.0	39.1	31.9	150	9.0	1.36	2.74	22619	108.38	423.36	8.4	17.1
897.0	46.2	33.7	150	9.0	1.33	2.76	22814	91.89	419.72	8.4	17.1
898.0	40.0	34.1	150	9.0	1.38	2.78	23039	106.03	416.31	8.4	17.1
899.0	43.9	33.7	150	9.0	1.35	2.81	23244	96.60	412.87	8.4	17.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
900.0	40.9	33.3	150	9.0	1.37	2.83	23464	103.67	409.58	8.4	17.1
901.0	46.8	33.3	150	9.0	1.32	2.85	23656	90.71	406.23	8.4	17.1
902.0	43.9	34.8	150	9.0	1.36	2.88	23861	96.60	403.00	8.4	17.1
903.0	44.4	31.1	150	9.0	1.31	2.90	24064	95.42	399.83	8.4	17.1
904.0	50.7	32.9	150	9.0	1.29	2.92	24241	83.64	396.60	8.4	17.1
905.0	59.0	34.0	150	9.0	1.25	2.93	24394	71.86	393.32	8.4	17.1
906.0	52.9	34.4	150	9.0	1.29	2.95	24564	80.11	390.19	8.4	17.1
907.0	48.0	33.7	150	9.0	1.32	2.97	24751	88.35	387.20	8.4	17.1
908.0	46.2	35.8	150	9.0	1.35	3.00	24946	91.89	384.31	8.4	17.1
909.0	47.4	34.4	150	9.0	1.33	3.02	25136	89.53	381.44	8.4	17.1
910.0	52.2	33.6	150	9.0	1.29	3.04	25309	81.29	378.56	8.4	17.1
911.0	36.7	35.5	150	9.0	1.43	3.06	25554	115.45	376.05	8.4	17.1
912.0	45.0	32.0	150	9.0	1.32	3.09	25754	94.24	373.39	8.4	17.1
913.0	54.5	32.6	150	9.0	1.26	3.10	25919	77.75	370.63	8.4	17.1
914.0	60.0	32.9	150	9.0	1.24	3.12	26069	70.68	367.85	8.4	17.1
915.0	57.1	34.6	150	9.0	1.27	3.14	26226	74.22	365.16	8.4	17.1
916.0	42.4	35.0	150	9.0	1.37	3.16	26439	100.13	362.75	8.4	17.1
917.0	34.6	33.5	150	9.0	1.42	3.19	26699	122.52	360.59	8.4	17.1
918.0	43.9	31.4	150	9.0	1.32	3.21	26904	96.60	358.23	8.4	17.1
919.0	41.9	31.9	150	9.0	1.34	3.24	27119	101.31	355.96	8.4	17.1
920.0	47.4	30.5	150	9.0	1.28	3.26	27309	89.53	353.62	8.4	17.1
921.0	38.3	29.3	150	9.0	1.34	3.28	27544	110.74	351.51	8.4	17.1
922.0	46.2	30.2	150	9.0	1.29	3.31	27739	91.89	349.27	8.4	17.1
923.0	36.7	29.9	150	9.0	1.36	3.33	27984	115.45	347.27	8.4	17.1
924.0	52.2	29.0	150	9.0	1.24	3.35	28156	81.29	345.02	8.4	17.1
925.0	56.2	28.6	150	9.0	1.21	3.37	28316	75.40	342.75	8.4	17.1
926.0	42.4	29.3	150	9.0	1.30	3.39	28529	100.13	340.73	8.4	17.1
927.0	24.8	31.0	150	9.0	1.50	3.43	28891	170.82	339.32	8.4	17.1
928.0	30.0	31.3	150	9.0	1.44	3.47	29191	141.37	337.70	8.4	17.2
929.0	34.3	28.8	150	9.0	1.36	3.50	29454	123.70	335.96	8.4	17.2
930.0	49.2	29.5	150	9.0	1.26	3.52	29637	86.20	333.95	8.4	17.2
931.0	50.0	30.6	150	9.0	1.27	3.54	29817	84.82	331.95	8.4	17.2
932.0	52.2	29.6	150	9.0	1.24	3.56	29989	81.29	329.97	8.4	17.2
933.0	60.0	29.8	150	9.0	1.20	3.57	30139	70.68	327.92	8.4	17.2
934.0	53.7	31.1	150	9.0	1.25	3.59	30307	78.93	325.98	8.4	17.2
935.0	58.1	32.1	150	9.0	1.24	3.61	30462	73.04	324.02	8.4	17.2
936.0	35.0	32.6	150	9.0	1.41	3.64	30719	121.34	322.46	8.4	17.2
937.0	42.9	34.0	150	9.0	1.36	3.66	30929	98.96	320.75	8.4	17.2
938.0	37.9	33.2	150	9.0	1.39	3.69	31167	111.92	319.17	8.4	17.2
939.0	49.3	33.0	150	9.0	1.30	3.71	31349	86.00	317.42	8.4	17.2
940.0	41.9	30.4	150	9.0	1.32	3.73	31564	101.31	315.80	8.4	17.2
941.0	50.7	30.1	150	9.0	1.26	3.75	31742	83.64	314.08	8.4	17.2
942.0	50.7	31.6	150	9.0	1.28	3.77	31919	83.64	312.39	8.4	17.2
943.0	60.0	32.3	150	9.0	1.23	3.79	32069	70.68	310.63	8.4	17.2
944.0	47.4	30.7	150	9.0	1.29	3.81	32259	89.53	309.02	8.4	17.2
945.0	49.3	32.6	150	9.0	1.30	3.83	32442	86.00	307.42	8.4	17.2
946.0	33.6	30.9	150	9.0	1.40	3.86	32709	126.05	306.12	8.4	17.2
947.0	34.6	30.3	150	9.0	1.38	3.89	32969	122.52	304.82	8.4	17.2
948.0	41.9	31.2	150	9.0	1.33	3.91	33184	101.31	303.39	8.4	17.2
949.0	37.9	30.9	150	9.0	1.36	3.94	33422	111.92	302.05	8.4	17.2

DEPTH	ROP	WOB	RPM	MW	"d"e	HOURS	TURNS	ICOST	CCOST	PP	FG
950.0	38.9	29.1	150	9.0	1.33	3.96	33653	108.97	300.71	8.4	17.2
951.0	40.4	30.6	150	9.0	1.34	3.99	33875	104.85	299.36	8.4	17.2
952.0	41.9	30.8	150	9.0	1.33	4.01	34090	101.31	298.00	8.4	17.2
953.0	37.1	30.9	150	9.0	1.37	4.04	34333	114.27	296.75	8.4	17.2
954.0	50.0	32.5	150	9.0	1.29	4.06	34513	84.82	295.32	8.4	17.2
955.0	49.3	32.2	150	9.0	1.29	4.08	34695	86.00	293.91	8.4	17.2
956.0	52.9	32.6	150	9.0	1.27	4.10	34865	80.11	292.49	8.4	17.2
957.0	50.0	29.6	150	9.0	1.26	4.12	35045	84.82	291.11	8.4	17.2
958.0	42.9	31.3	150	9.0	1.33	4.14	35255	98.96	289.85	8.4	17.2
959.0	53.3	28.4	150	9.0	1.22	4.16	35424	79.52	288.48	8.4	17.2
960.0	50.0	30.0	150	9.0	1.26	4.18	35604	84.82	287.15	8.4	17.2
961.0	52.9	31.0	150	9.0	1.26	4.20	35774	80.11	285.82	8.4	17.2
962.0	45.6	32.2	150	9.0	1.32	4.22	35972	93.07	284.58	8.4	17.2
963.0	40.0	32.6	150	9.0	1.36	4.25	36197	106.03	283.44	8.4	17.2
964.0	45.0	33.0	150	9.0	1.33	4.27	36397	94.24	282.25	8.4	17.2
965.0	47.4	31.8	150	9.0	1.30	4.29	36587	89.53	281.03	8.4	17.2
966.0	39.6	32.4	150	9.0	1.36	4.31	36814	107.20	279.95	8.4	17.3
967.0	54.5	31.5	150	9.0	1.25	4.33	36979	77.75	278.69	8.4	17.3
968.0	39.1	30.9	150	9.0	1.35	4.36	37209	108.38	277.64	8.4	17.3
969.0	52.9	26.9	150	9.0	1.21	4.38	37379	80.11	276.43	8.4	17.3
970.0	39.6	31.5	150	9.0	1.35	4.40	37607	107.20	275.40	8.4	17.3
971.0	52.9	30.1	150	9.0	1.25	4.42	37777	80.11	274.21	8.4	17.3
972.0	54.5	30.7	150	9.0	1.24	4.44	37942	77.75	273.03	8.4	17.3
973.0	36.7	31.5	150	9.0	1.38	4.47	38187	115.45	272.09	8.4	17.3
974.0	41.9	31.5	150	9.0	1.34	4.49	38402	101.31	271.07	8.4	17.3
975.0	40.4	33.5	150	9.0	1.37	4.52	38624	104.85	270.09	8.4	17.3
976.0	47.4	34.7	150	9.0	1.33	4.54	38814	89.53	269.02	8.4	17.3
977.0	52.9	33.8	150	9.0	1.29	4.56	38984	80.11	267.92	8.4	17.3
978.0	48.0	32.4	150	9.0	1.30	4.58	39172	88.35	266.88	8.4	17.3
979.0	30.8	35.5	150	9.0	1.49	4.61	39464	137.83	266.13	8.4	17.3
980.0	42.9	32.6	150	9.0	1.34	4.63	39674	98.96	265.17	8.4	17.3
981.0	46.2	31.4	150	9.0	1.30	4.65	39869	91.89	264.18	8.4	17.3
982.0	54.5	28.9	150	9.0	1.22	4.67	40034	77.75	263.12	8.4	17.3
983.0	54.5	31.4	150	9.0	1.25	4.69	40199	77.75	262.07	8.4	17.3
984.0	50.7	32.0	150	9.0	1.28	4.71	40377	83.64	261.07	8.4	17.3
985.0	38.3	33.7	150	9.0	1.39	4.74	40612	110.74	260.23	8.4	17.3
986.0	52.9	33.6	150	9.0	1.29	4.76	40782	80.11	259.23	8.4	17.3
987.0	67.5	33.0	150	9.0	1.20	4.77	40915	62.83	258.14	8.4	17.3
988.0	42.4	32.6	150	9.0	1.35	4.79	41127	100.13	257.28	8.4	17.3
989.0	56.2	32.9	150	9.0	1.26	4.81	41287	75.40	256.28	8.4	17.3
990.0	60.0	31.8	150	9.0	1.22	4.83	41437	70.68	255.27	8.4	17.3
991.0	46.8	32.1	150	9.0	1.31	4.85	41630	90.71	254.38	8.4	17.3
992.0	40.4	32.4	150	9.0	1.36	4.87	41852	104.85	253.58	8.4	17.3
993.0	44.4	32.6	150	9.0	1.33	4.90	42055	95.42	252.73	8.4	17.3
994.0	42.4	32.5	150	9.0	1.34	4.92	42267	100.13	251.92	8.4	17.3
995.0	39.1	32.1	150	9.0	1.37	4.95	42497	108.38	251.16	8.4	17.3
996.0	52.9	29.8	150	9.0	1.24	4.96	42667	80.11	250.26	8.4	17.3
997.0	37.1	30.0	150	9.0	1.36	4.99	42910	114.44	249.55	8.4	17.3
998.0	46.8	32.2	150	9.0	1.31	5.01	43103	90.71	248.72	8.4	17.3
999.0	48.0	32.0	150	9.0	1.30	5.03	43290	88.35	247.89	8.4	17.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1000.0	40.9	31.5	150	9.0	1.34	5.06	43510	103.67	247.15	8.4	17.3
1001.0	53.6	31.6	150	9.0	1.26	5.08	43678	79.12	246.29	8.4	17.3
1002.0	58.6	31.5	150	9.0	1.23	5.09	43832	72.37	245.40	8.4	17.3
1003.0	56.2	31.8	150	9.0	1.25	5.11	43992	75.46	244.54	8.4	17.3
1004.0	40.0	32.9	150	9.0	1.37	5.14	44217	106.03	243.84	8.4	17.3
1005.0	52.2	29.7	150	9.0	1.25	5.16	44389	81.29	243.02	8.4	17.4
1006.0	45.6	29.4	150	9.0	1.28	5.18	44587	93.07	242.27	8.4	17.4
1007.0	52.9	29.5	150	9.0	1.24	5.20	44757	80.11	241.47	8.4	17.4
1008.0	53.7	31.6	150	9.0	1.26	5.22	44924	78.93	240.66	8.4	17.4
1009.0	42.9	29.3	150	9.0	1.30	5.24	45134	98.96	239.96	8.4	17.4
1010.0	35.6	32.1	150	9.0	1.40	5.27	45387	118.98	239.37	8.4	17.4
1011.0	37.5	27.8	150	9.0	1.32	5.29	45627	113.09	238.75	8.4	17.4
1012.0	55.4	30.5	150	9.0	1.24	5.31	45789	76.57	237.97	8.4	17.4
1013.0	60.0	30.9	150	9.0	1.21	5.33	45939	70.68	237.16	8.4	17.4
1014.0	61.0	30.4	150	9.0	1.20	5.34	46087	69.51	236.35	8.4	17.4
1015.0	36.4	26.0	150	9.0	1.31	5.37	46334	116.63	235.78	8.4	17.4
1016.0	55.4	31.2	150	9.0	1.24	5.39	46497	76.57	235.02	8.4	17.4
1017.0	50.0	31.4	150	9.0	1.28	5.41	46677	84.82	234.31	8.4	17.4
1018.0	46.8	30.2	150	9.0	1.29	5.43	46869	90.71	233.63	8.4	17.4
1019.0	41.9	31.1	150	9.0	1.33	5.46	47084	101.31	233.01	8.4	17.4
1020.0	46.2	30.6	150	9.0	1.29	5.48	47279	91.89	232.35	8.4	17.4
1021.0	45.6	31.0	150	9.0	1.30	5.50	47477	93.07	231.70	8.4	17.4
1022.0	40.9	31.5	150	9.0	1.34	5.52	47697	103.67	231.11	8.4	17.4
1023.0	53.7	30.4	150	9.0	1.24	5.54	47864	78.93	230.41	8.4	17.4
1024.0	54.5	29.7	150	9.0	1.23	5.56	48029	77.75	229.71	8.4	17.4
1025.0	41.9	29.6	150	9.0	1.31	5.58	48244	101.31	229.12	8.4	17.4
1026.0	45.0	30.2	150	9.0	1.30	5.61	48444	94.24	228.51	8.4	17.4
1027.0	45.0	29.7	150	9.0	1.29	5.63	48644	94.24	227.90	8.4	17.4
1028.0	59.0	29.4	150	9.0	1.20	5.65	48797	71.86	227.20	8.4	17.4
1029.0	56.2	29.5	150	9.0	1.22	5.66	48957	75.40	226.52	8.4	17.4
1030.0	56.2	31.1	150	9.0	1.24	5.68	49117	75.40	225.84	8.4	17.4
1031.0	72.0	28.7	150	9.0	1.13	5.70	49242	58.90	225.10	8.4	17.4
1032.0	48.6	30.1	150	9.0	1.27	5.72	49427	87.18	224.49	8.4	17.4
1033.0	53.7	29.8	150	9.0	1.24	5.73	49594	78.93	223.85	8.4	17.4
1034.0	52.2	29.5	150	9.0	1.24	5.75	49767	81.29	223.23	8.4	17.4
1035.0	54.5	30.8	150	9.0	1.24	5.77	49932	77.75	222.59	8.4	17.4
1036.0	45.6	31.0	150	9.0	1.30	5.79	50129	93.07	222.03	8.4	17.4
1037.0	47.4	32.4	150	9.0	1.31	5.82	50319	89.53	221.45	8.4	17.4
1038.0	52.9	31.1	150	9.0	1.26	5.83	50489	80.11	220.84	8.4	17.4
1039.0	56.2	31.3	150	9.0	1.24	5.85	50649	75.40	220.22	8.4	17.4
1040.0	39.1	31.8	150	9.0	1.36	5.88	50879	108.38	219.74	8.4	17.4
1041.0	33.6	31.8	150	9.0	1.41	5.91	51147	126.05	219.34	8.4	17.4
1042.0	38.7	30.3	150	9.0	1.35	5.93	51379	109.56	218.88	8.4	17.4
1043.0	41.9	30.5	150	9.0	1.32	5.96	51594	101.31	218.38	8.4	17.4
1044.0	52.9	28.2	150	9.0	1.22	5.98	51764	80.11	217.80	8.4	17.4
1045.0	57.1	29.5	150	9.0	1.21	5.99	51922	74.22	217.20	8.4	17.5
1046.0	52.2	30.9	150	9.0	1.26	6.01	52094	81.29	216.63	8.4	17.5
1047.0	52.9	30.9	150	9.0	1.25	6.03	52264	80.11	216.07	8.4	17.5
1048.0	54.5	30.6	150	9.0	1.24	6.05	52429	77.75	215.50	8.4	17.5
1049.0	54.5	31.0	150	9.0	1.25	6.07	52594	77.75	214.93	8.4	17.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1050.0	56.2	31.5	150	9.0	1.24	6.09	52754	75.40	214.36	8.4	17.5
1051.0	46.2	30.0	150	9.0	1.29	6.11	52949	91.89	213.86	8.4	17.5
1052.0	56.2	29.7	150	9.0	1.22	6.13	53109	75.40	213.29	8.4	17.5
1053.0	51.4	31.4	150	9.0	1.27	6.14	53284	82.46	212.76	8.4	17.5
1054.0	43.9	29.1	150	9.0	1.29	6.17	53489	96.60	212.30	8.4	17.5
1055.0	48.6	30.2	150	9.0	1.27	6.19	53674	87.18	211.79	8.4	17.5
1056.0	57.1	35.3	150	9.0	1.28	6.21	53832	74.22	211.24	8.4	17.5
1057.0	54.5	34.8	150	9.0	1.29	6.22	53997	77.75	210.71	8.4	17.5
1058.0	57.1	34.2	150	9.0	1.27	6.24	54154	74.22	210.17	8.4	17.5
1059.0	54.5	34.3	150	9.0	1.28	6.26	54319	77.75	209.65	8.4	17.5
1060.0	57.1	35.9	150	9.0	1.29	6.28	54477	74.22	209.11	8.4	17.5
1061.0	50.7	35.2	150	9.0	1.32	6.30	54654	83.64	208.62	8.4	17.5
1062.0	56.2	36.2	150	9.0	1.29	6.31	54814	75.40	208.10	8.4	17.5
1063.0	51.4	34.0	150	9.0	1.30	6.33	54989	82.46	207.61	8.4	17.5
1064.0	53.7	32.8	150	9.0	1.27	6.35	55157	78.93	207.11	8.4	17.5
1065.0	54.5	32.9	150	9.0	1.27	6.37	55322	77.75	206.61	8.4	17.5
1066.0	52.2	33.4	150	9.0	1.29	6.39	55494	81.29	206.13	8.4	17.5
1067.0	52.9	32.1	150	9.0	1.27	6.41	55664	80.11	205.65	8.4	17.5
1068.0	56.2	33.3	150	9.0	1.26	6.43	55824	75.40	205.15	8.4	17.5
1069.0	48.0	33.1	150	9.0	1.31	6.45	56012	88.35	204.71	8.4	17.5
1070.0	45.6	34.0	150	9.0	1.34	6.47	56209	93.07	204.28	8.4	17.5
1071.0	48.0	35.7	150	9.0	1.34	6.49	56397	88.35	203.85	8.4	17.5
1072.0	43.4	31.6	150	9.0	1.33	6.51	56604	97.78	203.45	8.4	17.5
1073.0	45.6	33.1	150	9.0	1.33	6.54	56802	93.07	203.04	8.4	17.5
1074.0	58.1	31.7	150	9.0	1.23	6.55	56957	73.04	202.55	8.4	17.5
1075.0	42.4	29.4	150	9.0	1.31	6.58	57169	100.13	202.17	8.4	17.5
1076.0	45.0	30.4	150	9.0	1.30	6.60	57369	94.24	201.77	8.4	17.5
1077.0	40.4	31.2	150	9.0	1.34	6.62	57592	104.85	201.41	8.4	17.5
1078.0	45.6	33.8	150	9.0	1.34	6.65	57789	93.07	201.01	8.4	17.5
1079.0	44.4	36.5	150	9.0	1.37	6.67	57992	95.42	200.63	8.4	17.5
1080.0	38.7	36.1	150	9.0	1.42	6.69	58224	109.56	200.29	8.4	17.5
1081.0	40.9	35.7	150	9.0	1.39	6.72	58444	103.67	199.94	8.4	17.5
1082.0	47.0	30.8	150	9.0	1.29	6.74	58636	90.32	199.55	8.4	17.5
1083.0	55.4	32.2	150	9.0	1.25	6.76	58799	76.57	199.10	8.4	17.5
1084.0	52.2	32.0	150	9.0	1.27	6.78	58971	81.29	198.68	8.4	17.5
1085.0	51.4	33.3	150	9.0	1.29	6.80	59146	82.46	198.26	8.4	17.6
1086.0	53.7	32.5	150	9.0	1.27	6.81	59314	78.93	197.84	8.4	17.6
1087.0	48.6	32.2	150	9.0	1.30	6.84	59499	87.18	197.44	8.4	17.6
1088.0	51.4	31.8	150	9.0	1.27	6.85	59674	82.46	197.03	8.4	17.6
1089.0	51.4	31.7	150	9.0	1.27	6.87	59849	82.46	196.63	8.4	17.6
1090.0	57.1	30.2	150	9.0	1.22	6.89	60006	74.22	196.20	8.4	17.6
1091.0	56.2	30.8	150	9.0	1.23	6.91	60166	75.40	195.77	8.4	17.6
1092.0	49.3	32.6	150	9.0	1.30	6.93	60349	86.00	195.39	8.4	17.6
1093.0	52.9	33.6	150	9.0	1.29	6.95	60519	80.11	194.99	8.4	17.6
1094.0	53.7	33.7	150	9.0	1.28	6.97	60686	78.93	194.59	8.4	17.6
1095.0	67.9	33.8	150	9.0	1.21	6.98	60819	62.44	194.13	8.4	17.6
1096.0	45.6	32.9	150	9.0	1.33	7.00	61016	93.07	193.78	8.4	17.6
1097.0	46.2	32.7	150	9.0	1.32	7.03	61211	91.89	193.43	8.4	17.6
1098.0	54.5	33.6	150	9.0	1.27	7.04	61376	77.75	193.03	8.4	17.6
1099.0	58.1	33.4	150	9.0	1.25	7.06	61531	73.04	192.62	8.4	17.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1100.0	46.2	33.5	150	9.0	1.33	7.08	61726	91.89	192.28	8.4	17.6
1101.0	59.0	32.3	150	9.0	1.24	7.10	61879	71.86	191.87	8.4	17.6
1102.0	54.5	31.5	150	9.0	1.25	7.12	62044	77.75	191.49	8.4	17.6
1103.0	52.2	32.1	150	9.0	1.27	7.14	62216	81.29	191.12	8.4	17.6
1104.0	50.0	32.6	150	9.0	1.29	7.16	62396	84.82	190.76	8.4	17.6
1105.0	50.7	32.2	150	9.0	1.28	7.18	62574	83.64	190.40	8.4	17.6
1106.0	46.8	32.1	150	9.0	1.31	7.20	62766	90.71	190.07	8.4	17.6
1107.0	47.4	31.3	150	9.0	1.29	7.22	62956	89.53	189.74	8.4	17.6
1108.0	48.6	30.7	150	9.0	1.28	7.24	63141	87.18	189.40	8.4	17.6
1109.0	51.4	32.8	150	9.0	1.29	7.26	63316	82.46	189.04	8.4	17.6
1110.0	48.0	32.5	150	9.0	1.30	7.28	63504	88.35	188.71	8.4	17.6
1111.0	52.9	31.3	150	9.0	1.26	7.30	63674	80.11	188.36	8.4	17.6
1112.0	47.4	30.4	150	9.0	1.28	7.32	63864	89.53	188.03	8.4	17.6
1113.0	52.9	33.8	150	9.0	1.29	7.34	64034	80.11	187.68	8.4	17.6
1114.0	59.0	34.2	150	9.0	1.26	7.36	64186	71.86	187.31	8.4	17.6
1115.0	56.2	33.0	150	9.0	1.26	7.37	64346	75.40	186.94	8.4	17.6
1116.0	51.4	32.4	150	9.0	1.28	7.39	64521	82.46	186.61	8.4	17.6
1117.0	58.1	34.1	150	9.0	1.26	7.41	64676	73.04	186.24	8.4	17.6
1118.0	56.2	33.5	150	9.0	1.26	7.43	64836	75.40	185.89	8.4	17.6
1119.0	52.2	34.0	150	9.0	1.29	7.45	65009	81.29	185.55	8.4	17.6
1120.0	48.6	33.4	150	9.0	1.31	7.47	65194	87.18	185.24	8.4	17.6
1121.0	50.0	32.0	150	9.0	1.28	7.49	65374	84.82	184.92	8.4	17.6
1122.0	59.0	33.7	150	9.0	1.25	7.50	65526	71.86	184.56	8.4	17.6
1123.0	53.7	32.3	150	9.0	1.27	7.52	65694	78.93	184.23	8.4	17.6
1124.0	52.2	30.9	150	9.0	1.26	7.54	65866	81.29	183.90	8.4	17.6
1125.0	53.7	32.0	150	9.0	1.26	7.56	66034	78.93	183.58	8.4	17.6
1126.0	56.2	32.7	150	9.0	1.26	7.58	66194	75.40	183.24	8.4	17.6
1127.0	49.3	34.4	150	9.0	1.32	7.60	66376	86.00	182.93	8.4	17.7
1128.0	56.2	33.6	150	9.0	1.27	7.62	66536	75.40	182.60	8.4	17.7
1129.0	61.0	29.6	150	9.0	1.19	7.63	66684	69.51	182.25	8.4	17.7
1130.0	37.5	27.2	150	9.0	1.32	7.66	66924	113.09	182.04	8.4	17.7
1131.0	48.6	30.9	150	9.0	1.28	7.68	67109	87.18	181.75	8.4	17.7
1132.0	45.0	32.8	150	9.0	1.33	7.70	67309	94.24	181.48	8.4	17.7
1133.0	40.9	29.7	150	9.0	1.32	7.73	67529	103.67	181.24	8.4	17.7
1134.0	47.4	32.2	150	9.0	1.30	7.75	67719	89.53	180.96	8.4	17.7
1135.0	42.9	32.0	150	9.0	1.33	7.77	67929	98.96	180.71	8.4	17.7
1136.0	48.0	30.6	150	9.0	1.28	7.79	68116	88.35	180.43	8.4	17.7
1137.0	47.4	30.4	150	9.0	1.28	7.81	68306	89.53	180.16	8.4	17.7
1138.0	46.8	32.9	150	9.0	1.32	7.84	68499	90.71	179.89	8.4	17.7
1139.0	36.4	32.7	150	9.0	1.40	7.86	68746	116.63	179.70	8.4	17.7
1140.0	41.9	32.1	150	9.0	1.34	7.89	68961	101.22	179.46	8.4	17.7
1141.0	47.0	31.9	150	9.0	1.30	7.91	69152	90.23	179.19	8.4	17.7
1142.0	44.3	33.2	150	9.0	1.34	7.93	69355	95.73	178.95	8.4	17.7
1143.0	49.0	29.7	150	9.0	1.26	7.95	69539	86.55	178.67	8.4	17.7
1144.0	49.3	30.1	150	9.0	1.27	7.97	69722	86.02	178.40	8.4	17.7
1145.0	48.0	32.3	150	9.0	1.30	7.99	69909	88.35	178.13	8.4	17.7
1146.0	47.0	32.0	150	9.0	1.30	8.01	70101	90.23	177.87	8.4	17.7
1147.0	45.0	31.8	150	9.0	1.32	8.04	70301	94.24	177.63	8.4	17.7
1148.0	45.6	33.2	150	9.0	1.33	8.06	70498	93.07	177.38	8.4	17.7
1149.0	50.6	28.3	150	9.0	1.24	8.08	70676	83.77	177.11	8.4	17.7

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1150.0	47.4	29.7	150	9.0	1.28	8.10	70866	89.53	176.85	8.4	17.7
1151.0	50.0	29.9	150	9.0	1.26	8.12	71046	84.82	176.59	8.4	17.7
1152.0	50.7	29.6	150	9.0	1.25	8.14	71223	83.64	176.32	8.4	17.7
1153.0	48.0	28.3	150	9.0	1.25	8.16	71411	88.35	176.06	8.4	17.7
1154.0	55.4	29.8	150	9.0	1.23	8.18	71573	76.57	175.78	8.4	17.7
1155.0	51.4	29.3	150	9.0	1.24	8.20	71748	82.46	175.51	8.4	17.7
1156.0	46.8	29.8	150	9.0	1.28	8.22	71941	90.71	175.27	8.4	17.7
1157.0	50.7	28.8	150	9.0	1.24	8.24	72118	83.64	175.01	8.4	17.7
1158.0	51.4	30.1	150	9.0	1.25	8.26	72293	82.46	174.75	8.4	17.7
1159.0	52.9	29.2	150	9.0	1.23	8.28	72463	80.11	174.48	8.4	17.7
1160.0	36.7	29.4	150	9.0	1.35	8.30	72708	115.45	174.31	8.4	17.7
1161.0	37.9	29.6	150	9.0	1.34	8.33	72946	111.92	174.13	8.4	17.7
1162.0	49.3	27.7	150	9.0	1.24	8.35	73128	86.00	173.89	8.4	17.7
1163.0	52.2	29.9	150	9.0	1.25	8.37	73301	81.29	173.63	8.4	17.7
1164.0	52.2	27.9	150	9.0	1.22	8.39	73473	81.29	173.37	8.4	17.7
1165.0	51.4	28.1	150	9.0	1.23	8.41	73648	82.46	173.12	8.4	17.7
1166.0	52.9	28.8	150	9.0	1.23	8.43	73818	80.11	172.86	8.4	17.7
1167.0	52.7	30.2	150	9.0	1.25	8.45	73989	80.50	172.60	8.4	17.7
1168.0	50.7	32.7	150	9.0	1.29	8.46	74167	83.64	172.36	8.4	17.7
1169.0	50.7	31.6	150	9.0	1.28	8.48	74344	83.64	172.11	8.4	17.7
1170.0	53.7	31.9	150	9.0	1.26	8.50	74512	78.93	171.86	8.4	17.8
1171.0	49.3	33.3	150	9.0	1.30	8.52	74694	86.00	171.62	8.4	17.8
1172.0	50.7	32.1	150	9.0	1.28	8.54	74872	83.64	171.38	8.4	17.8
1173.0	52.9	32.9	150	9.0	1.28	8.56	75042	80.11	171.13	8.4	17.8
1174.0	55.4	32.5	150	9.0	1.26	8.58	75204	76.57	170.88	8.4	17.8
1175.0	53.7	33.1	150	9.0	1.27	8.60	75372	78.93	170.63	8.4	17.8
1176.0	52.9	31.9	150	9.0	1.27	8.62	75542	80.11	170.38	8.4	17.8
1177.0	55.4	32.0	150	9.0	1.25	8.64	75704	76.57	170.13	8.4	17.8
1178.0	46.8	33.6	150	9.0	1.33	8.66	75897	90.71	169.91	8.4	17.8
1179.0	52.9	32.7	150	9.0	1.27	8.68	76067	80.11	169.67	8.4	17.8
1180.0	52.9	34.4	150	9.0	1.29	8.69	76237	80.11	169.43	8.4	17.8
1181.0	46.2	34.0	150	9.0	1.33	8.72	76432	91.89	169.23	8.4	17.8
1182.0	46.2	32.8	150	9.0	1.32	8.74	76627	91.89	169.02	8.4	17.8
1183.0	39.1	29.1	150	9.0	1.33	8.76	76857	108.38	168.86	8.4	17.8
1184.0	35.0	28.2	150	9.0	1.35	8.79	77114	121.34	168.74	8.4	17.8
1185.0	54.5	34.2	150	9.0	1.28	8.81	77279	77.75	168.50	8.4	17.8
1186.0	46.2	26.1	150	9.0	1.24	8.83	77474	91.89	168.29	8.4	17.8
1187.0	40.0	29.2	150	9.0	1.32	8.86	77699	106.03	168.13	8.4	17.8
1188.0	34.3	30.4	150	9.0	1.39	8.89	77962	123.70	168.01	8.4	17.8
1189.0	50.0	29.6	150	9.0	1.26	8.91	78142	84.82	167.80	8.4	17.8
1190.0	31.3	29.4	150	9.0	1.40	8.94	78429	135.48	167.71	8.4	17.8
1191.0	38.7	30.3	150	9.0	1.35	8.96	78662	109.56	167.56	8.4	17.8
1192.0	39.6	31.6	150	9.0	1.36	8.99	78889	107.20	167.41	8.4	17.8
1193.0	47.4	31.2	150	9.0	1.29	9.01	79079	89.53	167.20	8.4	17.8
1194.0	46.8	32.5	150	9.0	1.31	9.03	79272	90.71	167.01	8.4	17.8
1195.0	42.4	30.9	150	9.0	1.33	9.06	79484	100.13	166.84	8.4	17.8
1196.0	40.0	27.5	150	9.0	1.30	9.08	79709	106.03	166.68	8.4	17.8
1197.0	44.4	28.0	150	9.0	1.27	9.10	79912	95.42	166.50	8.4	17.8
1198.0	38.7	28.2	150	9.0	1.32	9.13	80144	109.56	166.35	8.4	17.8
1199.0	44.4	28.9	150	9.0	1.29	9.15	80347	95.42	166.17	8.4	17.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1200.0	40.9	30.5	150	9.0	1.33	9.18	80567	103.67	166.01	8.4	17.8
1201.0	43.5	31.0	150	9.0	1.32	9.20	80774	97.49	165.84	8.4	17.8
1202.0	42.1	32.2	150	9.0	1.34	9.22	80988	100.79	165.67	8.4	17.8
1203.0	39.1	31.8	150	9.0	1.36	9.25	81218	108.38	165.53	8.4	17.8
1204.0	42.9	33.3	150	9.0	1.35	9.27	81428	98.96	165.36	8.4	17.8
1205.0	42.4	32.9	150	9.0	1.35	9.30	81640	100.13	165.20	8.4	17.8
1206.0	36.0	31.9	150	9.0	1.39	9.32	81890	117.81	165.08	8.4	17.8
1207.0	43.4	32.3	150	9.0	1.33	9.35	82098	97.78	164.91	8.4	17.8
1208.0	40.0	33.3	150	9.0	1.37	9.37	82323	106.03	164.77	8.4	17.8
1209.0	45.0	34.6	150	9.0	1.35	9.39	82523	94.24	164.59	8.4	17.8
1210.0	45.0	34.4	150	9.0	1.35	9.42	82723	94.24	164.42	8.4	17.8
1211.0	42.9	34.3	150	9.0	1.36	9.44	82933	98.96	164.26	8.4	17.8
1212.0	45.6	33.7	150	9.0	1.33	9.46	83130	93.07	164.08	8.4	17.8
1213.0	43.4	34.0	150	9.0	1.35	9.48	83338	97.78	163.92	8.4	17.8
1214.0	41.5	31.3	150	9.0	1.34	9.51	83554	102.10	163.77	8.4	17.9
1215.0	52.2	30.8	150	9.0	1.26	9.53	83727	81.29	163.56	8.4	17.9
1216.0	46.2	30.9	150	9.0	1.30	9.55	83922	91.89	163.39	8.4	17.9
1217.0	40.0	31.9	150	9.0	1.35	9.57	84147	106.03	163.25	8.4	17.9
1218.0	29.8	31.1	150	9.0	1.44	9.61	84449	142.54	163.20	8.4	17.9
1219.0	50.0	32.2	150	9.0	1.29	9.63	84629	84.82	163.01	8.4	17.9
1220.0	40.0	30.3	150	9.0	1.34	9.65	84854	106.03	162.87	8.4	17.9
1221.0	51.4	30.4	150	9.0	1.26	9.67	85029	82.46	162.68	8.4	17.9
1222.0	48.0	31.6	150	9.0	1.29	9.69	85217	88.35	162.50	8.4	17.9
1223.0	50.0	32.2	150	9.0	1.29	9.71	85397	84.82	162.31	8.4	17.9
1224.0	52.7	32.7	150	9.0	1.28	9.73	85568	80.50	162.12	8.4	17.9
1225.0	53.7	31.8	150	9.0	1.26	9.75	85735	78.93	161.92	8.4	17.9
1226.0	44.4	31.2	150	9.0	1.31	9.77	85938	95.42	161.76	8.4	17.9
1227.0	49.3	32.6	150	9.0	1.30	9.79	86120	86.00	161.58	8.4	17.9
1228.0	31.6	32.2	150	9.0	1.44	9.82	86405	134.30	161.52	8.4	17.9
1229.0	50.7	31.5	150	9.0	1.27	9.84	86583	83.64	161.33	8.4	17.9
1230.0	39.1	31.8	150	9.0	1.36	9.87	86813	108.38	161.21	8.4	17.9
1231.0	42.9	32.4	150	9.0	1.34	9.89	87023	98.96	161.06	8.4	17.9
1232.0	40.9	33.2	150	9.0	1.36	9.92	87243	103.67	160.93	8.4	17.9
1233.0	35.3	31.8	150	9.0	1.39	9.95	87498	120.16	160.83	8.4	17.9
1234.0	51.4	30.9	150	9.0	1.26	9.97	87673	82.46	160.65	8.4	17.9
1235.0	53.7	31.8	150	9.0	1.26	9.98	87840	78.93	160.46	8.4	17.9
1236.0	43.4	31.5	150	9.0	1.32	10.01	88048	97.78	160.31	8.4	17.9
1237.0	41.4	33.1	150	9.0	1.36	10.03	88265	102.49	160.18	8.4	17.9
1238.0	43.9	32.7	150	9.0	1.34	10.05	88470	96.60	160.03	8.4	17.9
1239.0	45.6	29.6	150	9.0	1.29	10.08	88668	93.07	159.88	8.4	17.9
1240.0	46.2	29.2	150	9.0	1.28	10.10	88863	91.89	159.72	8.4	17.9
1241.0	36.7	31.6	150	9.0	1.38	10.12	89108	115.45	159.62	8.4	17.9
1242.0	41.9	30.2	150	9.0	1.32	10.15	89323	101.31	159.48	8.4	17.9
1243.0	48.0	33.2	150	9.0	1.31	10.17	89510	88.35	159.32	8.4	17.9
1244.0	41.4	30.9	150	9.0	1.33	10.19	89728	102.49	159.19	8.4	17.9
1245.0	41.4	31.7	150	9.0	1.34	10.22	89945	102.49	159.06	8.4	17.9
1246.0	47.4	33.8	150	9.0	1.32	10.24	90135	89.53	158.90	8.4	17.9
1247.0	43.9	33.2	150	9.0	1.34	10.26	90340	96.60	158.76	8.4	17.9
1248.0	55.4	32.7	150	9.0	1.26	10.28	90503	76.57	158.58	8.4	17.9
1249.0	54.5	33.7	150	9.0	1.28	10.30	90668	77.75	158.39	8.4	17.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1250.0	55.4	33.5	150	9.0	1.27	10.32	90830	76.57	158.21	8.4	17.9
1251.0	48.6	33.2	150	9.0	1.31	10.34	91015	87.18	158.05	8.4	17.9
1252.0	52.2	33.9	150	9.0	1.29	10.36	91188	81.29	157.88	8.4	17.9
1253.0	41.3	30.7	150	9.0	1.33	10.38	91405	102.66	157.75	8.4	17.9
1254.0	47.4	29.3	150	9.0	1.27	10.40	91595	89.53	157.60	8.4	17.9
1255.0	48.6	29.9	150	9.0	1.27	10.42	91780	87.18	157.45	8.4	17.9
1256.0	52.2	29.4	150	9.0	1.24	10.44	91953	81.29	157.28	8.4	17.9
1257.0	54.5	29.3	150	9.0	1.23	10.46	92118	77.75	157.10	8.4	17.9
1258.0	52.9	29.3	150	9.0	1.23	10.48	92288	80.11	156.93	8.4	17.9
1259.0	47.4	30.7	150	9.0	1.29	10.50	92478	89.53	156.78	8.4	17.9
1260.0	52.2	29.7	150	9.0	1.24	10.52	92650	81.29	156.61	8.4	18.0
1261.0	56.2	29.4	150	9.0	1.22	10.54	92810	75.40	156.44	8.4	18.0
1262.0	51.4	28.8	150	9.0	1.24	10.56	92985	82.46	156.27	8.4	18.0
1263.0	31.0	30.2	150	9.0	1.41	10.59	93275	136.65	156.23	8.4	18.0
1264.0	51.4	31.6	150	9.0	1.27	10.61	93450	82.46	156.07	8.4	18.0
1265.0	53.7	31.0	150	9.0	1.25	10.63	93618	78.93	155.90	8.4	18.0
1266.0	55.4	29.1	150	9.0	1.22	10.64	93780	76.57	155.73	8.4	18.0
1267.0	54.5	30.8	150	9.0	1.24	10.66	93945	77.75	155.56	8.4	18.0
1268.0	53.7	31.2	150	9.0	1.25	10.68	94113	78.93	155.39	8.4	18.0
1269.0	60.0	30.5	150	9.0	1.21	10.70	94263	70.68	155.21	8.4	18.0
1270.0	49.3	31.6	150	9.0	1.28	10.72	94445	86.00	155.06	8.4	18.0
1271.0	45.6	29.9	150	9.0	1.29	10.74	94643	93.07	154.93	8.4	18.0
1272.0	43.4	32.2	150	9.0	1.33	10.76	94850	97.78	154.81	8.4	18.0
1273.0	40.4	29.1	150	9.0	1.32	10.79	95073	104.85	154.70	8.4	18.0
1274.0	47.4	31.1	150	9.0	1.29	10.81	95263	89.53	154.56	8.4	18.0
1275.0	49.3	31.8	150	9.0	1.29	10.83	95445	86.00	154.41	8.4	18.0
1276.0	62.1	30.8	150	9.0	1.20	10.85	95590	68.33	154.23	8.4	18.0
1277.0	52.9	32.6	150	9.0	1.27	10.86	95760	80.11	154.07	8.4	18.0
1278.0	59.0	33.5	150	9.0	1.25	10.88	95913	71.86	153.90	8.4	18.0
1279.0	60.0	33.0	150	9.0	1.24	10.90	96063	70.68	153.72	8.4	18.0
1280.0	64.3	32.7	150	9.0	1.21	10.91	96203	65.97	153.54	8.4	18.0
1281.0	54.5	30.6	150	9.0	1.24	10.93	96368	77.75	153.38	8.4	18.0
1282.0	73.5	29.6	150	9.0	1.14	10.95	96490	57.72	153.18	8.4	18.0
1283.0	35.0	30.6	150	9.0	1.38	10.97	96748	121.34	153.11	8.4	18.0
1284.0	52.2	30.9	150	9.0	1.26	10.99	96920	81.29	152.96	8.4	18.0
1285.0	63.2	30.9	150	9.0	1.20	11.01	97063	67.15	152.78	8.4	18.0
1286.0	73.5	29.0	150	9.0	1.13	11.02	97185	57.72	152.58	8.4	18.0
1287.0	47.4	30.6	150	9.0	1.29	11.04	97375	89.53	152.45	8.4	18.0
1288.0	51.4	29.5	150	9.0	1.25	11.06	97550	82.46	152.31	8.4	18.0
1289.0	52.9	34.5	150	9.0	1.29	11.08	97720	80.11	152.16	8.4	18.0
1290.0	52.9	33.4	150	9.0	1.28	11.10	97890	80.11	152.01	8.4	18.0
1291.0	52.2	35.8	150	9.0	1.31	11.12	98063	81.29	151.86	8.4	18.0
1292.0	45.0	39.5	150	9.0	1.40	11.14	98263	94.24	151.74	8.4	18.0
1293.0	64.3	38.0	150	9.0	1.27	11.16	98403	65.97	151.57	8.4	18.0
1294.0	62.1	39.8	150	9.0	1.30	11.17	98548	68.33	151.40	8.4	18.0
1295.0	63.2	38.8	150	9.0	1.28	11.19	98690	67.15	151.23	8.4	18.0
1296.0	64.3	39.8	150	9.0	1.29	11.21	98830	65.97	151.05	8.4	18.0
1297.0	63.2	38.7	150	9.0	1.28	11.22	98973	67.15	150.88	8.4	18.0
1298.0	60.0	38.3	150	9.0	1.29	11.24	99123	70.68	150.72	8.4	18.0
1299.0	65.5	36.7	150	9.0	1.25	11.25	99260	64.79	150.54	8.4	18.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1300.0	64.0	39.0	150	9.0	1.28	11.27	99401	66.27	150.37	8.4	18.0
1301.0	61.0	37.8	150	9.0	1.28	11.29	99549	69.51	150.21	8.4	18.0
1302.0	62.1	40.9	150	9.0	1.31	11.30	99694	68.33	150.04	8.4	18.0
1303.0	69.2	41.4	150	9.0	1.28	11.32	99824	61.26	149.87	8.4	18.0
1304.0	58.1	41.1	150	9.0	1.33	11.33	99979	73.04	149.71	8.4	18.0
1305.0	61.0	42.2	150	9.0	1.33	11.35	100126	69.51	149.55	8.4	18.0
1306.0	56.2	41.4	150	9.0	1.35	11.37	100286	75.40	149.40	8.4	18.1
1307.0	61.0	40.8	150	9.0	1.31	11.38	100434	69.51	149.24	8.4	18.1
1308.0	75.0	39.6	150	9.0	1.23	11.40	100554	56.55	149.06	8.4	18.1
1309.0	38.7	41.4	150	9.0	1.48	11.42	100786	109.56	148.98	8.4	18.1
1310.0	76.6	38.4	150	9.0	1.21	11.44	100904	55.37	148.79	8.4	18.1
1311.0	59.0	40.8	150	9.0	1.32	11.45	101056	71.86	148.64	8.4	18.1
1312.0	65.5	40.6	150	9.0	1.29	11.47	101194	64.79	148.48	8.4	18.1
1313.0	65.5	41.3	150	9.0	1.29	11.48	101331	64.79	148.31	8.4	18.1
1314.0	66.7	38.8	150	9.0	1.26	11.50	101466	63.62	148.14	8.4	18.1
1315.0	59.0	40.9	150	9.0	1.33	11.52	101619	71.86	147.99	8.4	18.1
1316.0	72.0	42.1	150	9.0	1.27	11.53	101744	58.90	147.82	8.4	18.1
1317.0	66.7	41.3	150	9.0	1.29	11.54	101879	63.62	147.65	8.4	18.1
1318.0	62.1	42.0	150	9.0	1.32	11.56	102024	68.33	147.50	8.4	18.1
1319.0	80.0	31.9	150	9.0	1.13	11.57	102136	53.01	147.32	8.4	18.1
1320.0	70.6	39.1	150	9.0	1.25	11.59	102264	60.08	147.15	8.4	18.1
1321.0	64.3	38.5	150	9.0	1.27	11.60	102404	65.97	146.99	8.4	18.1
1322.0	66.7	38.5	150	9.0	1.26	11.62	102539	63.62	146.83	8.4	18.1
1323.0	73.5	40.0	150	9.0	1.24	11.63	102661	57.72	146.65	8.4	18.1
1324.0	58.1	40.7	150	9.0	1.33	11.65	102816	73.04	146.51	8.4	18.1
1325.0	69.2	40.5	150	9.0	1.27	11.66	102946	61.26	146.35	8.4	18.1
1326.0	59.0	41.3	150	9.0	1.33	11.68	103099	71.86	146.20	8.4	18.1
1327.0	76.6	42.6	150	9.0	1.25	11.69	103216	55.37	146.03	8.4	18.1
1328.0	55.4	43.5	150	9.0	1.37	11.71	103379	76.57	145.90	8.4	18.1
1329.0	39.1	42.6	150	9.0	1.49	11.74	103609	108.38	145.83	8.4	18.1
1330.0	51.4	44.8	150	9.0	1.41	11.76	103784	82.46	145.70	8.4	18.1
1331.0	59.0	42.6	150	9.0	1.34	11.77	103936	71.86	145.56	8.4	18.1
1332.0	61.0	42.9	150	9.0	1.33	11.79	104084	69.51	145.42	8.4	18.1
1333.0	66.7	41.8	150	9.0	1.29	11.80	104219	63.62	145.26	8.4	18.1
1334.0	64.3	40.0	150	9.0	1.29	11.82	104359	65.97	145.11	8.4	18.1
1335.0	56.2	40.0	150	9.0	1.33	11.84	104519	75.40	144.98	8.4	18.1
1336.0	66.7	40.9	150	9.0	1.28	11.85	104654	63.62	144.83	8.4	18.1
1337.0	55.4	40.7	150	9.0	1.35	11.87	104816	76.57	144.70	8.4	18.1
1338.0	76.6	42.2	150	9.0	1.25	11.88	104934	55.37	144.53	8.4	18.1
1339.0	41.4	41.5	150	9.0	1.45	11.91	105151	102.49	144.45	8.4	18.1
1340.0	61.0	40.5	150	9.0	1.31	11.92	105299	69.51	144.31	8.4	18.1
1341.0	58.1	39.1	150	9.0	1.31	11.94	105454	73.04	144.18	8.4	18.1
1342.0	66.7	39.4	150	9.0	1.27	11.96	105589	63.62	144.03	8.4	18.1
1343.0	59.0	39.5	150	9.0	1.31	11.97	105741	71.86	143.90	8.4	18.1
1344.0	67.9	39.7	150	9.0	1.27	11.99	105874	62.44	143.74	8.4	18.1
1345.0	66.7	39.7	150	9.0	1.27	12.00	106009	63.62	143.60	8.4	18.1
1346.0	49.3	39.8	150	9.0	1.38	12.02	106191	86.00	143.49	8.4	18.1
1347.0	50.7	40.5	150	9.0	1.37	12.04	106369	83.64	143.38	8.4	18.1
1348.0	51.4	36.5	150	9.0	1.33	12.06	106544	82.46	143.27	8.4	18.1
1349.0	70.6	37.7	150	9.0	1.23	12.08	106671	60.08	143.11	8.4	18.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1350.0	50.0	36.6	150	9.0	1.34	12.10	106851	84.82	143.00	8.4	18.1
1351.0	56.2	38.1	150	9.0	1.31	12.11	107011	75.40	142.88	8.4	18.1
1352.0	62.1	37.3	150	9.0	1.27	12.13	107156	68.33	142.74	8.4	18.1
1353.0	45.0	37.2	150	9.0	1.38	12.15	107356	94.24	142.66	8.4	18.1
1354.0	58.1	37.6	150	9.0	1.30	12.17	107511	73.04	142.53	8.4	18.2
1355.0	61.0	36.1	150	9.0	1.26	12.19	107659	69.51	142.40	8.4	18.2
1356.0	60.0	38.1	150	9.0	1.29	12.20	107809	70.68	142.27	8.4	18.2
1357.0	75.0	35.9	150	9.0	1.19	12.22	107929	56.55	142.11	8.4	18.2
1358.0	52.9	38.4	150	9.0	1.34	12.24	108099	80.11	142.00	8.4	18.2
1359.0	45.6	35.9	150	9.0	1.36	12.26	108296	93.07	141.91	8.4	18.2
1360.0	51.4	37.4	150	9.0	1.34	12.28	108471	82.46	141.80	8.4	18.2
1361.0	55.4	37.8	150	9.0	1.32	12.29	108634	76.57	141.68	8.4	18.2
1362.0	59.0	37.4	150	9.0	1.29	12.31	108786	71.86	141.56	8.4	18.2
1363.0	51.4	37.1	150	9.0	1.33	12.33	108961	82.46	141.45	8.4	18.2
1364.0	55.4	37.7	150	9.0	1.31	12.35	109124	76.57	141.34	8.4	18.2
1365.0	56.2	36.8	150	9.0	1.30	12.37	109284	75.40	141.22	8.4	18.2
1366.0	58.1	36.9	150	9.0	1.29	12.38	109439	73.04	141.10	8.4	18.2
1367.0	40.9	40.4	150	9.0	1.45	12.41	109659	103.67	141.03	8.4	18.2
1368.0	51.4	40.1	150	9.0	1.37	12.43	109834	82.46	140.93	8.4	18.2
1369.0	60.0	39.2	150	9.0	1.30	12.44	109984	70.68	140.80	8.4	18.2
1370.0	67.9	39.1	150	9.0	1.26	12.46	110116	62.44	140.66	8.4	18.2
1371.0	51.4	38.6	150	9.0	1.35	12.48	110291	82.46	140.56	8.4	18.2
1372.0	61.0	39.3	150	9.0	1.30	12.50	110439	69.51	140.43	8.4	18.2
1373.0	54.5	38.9	150	9.0	1.33	12.51	110604	77.75	140.32	8.4	18.2
1374.0	54.5	38.3	150	9.0	1.33	12.53	110769	77.75	140.21	8.4	18.2
1375.0	51.4	38.4	150	9.0	1.35	12.55	110944	82.46	140.11	8.4	18.2
1376.0	50.7	40.4	150	9.0	1.37	12.57	111121	83.64	140.01	8.4	18.2
1377.0	53.7	40.4	150	9.0	1.35	12.59	111289	78.93	139.91	8.4	18.2
1378.0	59.0	39.8	150	9.0	1.31	12.61	111441	71.86	139.79	8.4	18.2
1379.0	60.0	38.5	150	9.0	1.30	12.62	111591	70.68	139.67	8.4	18.2
1380.0	56.2	38.4	150	9.0	1.32	12.64	111751	75.40	139.55	8.4	18.2
1381.0	52.2	37.5	150	9.0	1.33	12.66	111924	81.29	139.45	8.4	18.2
1382.0	61.0	39.0	150	9.0	1.30	12.68	112071	69.51	139.33	8.4	18.2
1383.0	45.6	39.3	150	9.0	1.40	12.70	112269	93.07	139.25	8.4	18.2
1384.0	49.3	40.3	150	9.0	1.38	12.72	112451	86.00	139.16	8.4	18.2
1385.0	45.6	38.5	150	9.0	1.39	12.74	112649	93.07	139.08	8.4	18.2
1386.0	51.4	36.9	150	9.0	1.33	12.76	112824	82.46	138.98	8.4	18.2
1387.0	53.7	38.7	150	9.0	1.34	12.78	112991	78.93	138.88	8.4	18.2
1388.0	61.0	39.4	150	9.0	1.30	12.80	113139	69.51	138.76	8.4	18.2
1389.0	43.9	40.5	150	9.0	1.42	12.82	113344	96.60	138.69	8.4	18.2
1390.0	48.0	39.7	150	9.0	1.38	12.84	113531	88.35	138.60	8.4	18.2
1391.0	50.7	37.9	150	9.0	1.35	12.86	113709	83.64	138.51	8.4	18.2
1392.0	48.0	37.6	150	9.0	1.36	12.88	113896	88.35	138.42	8.4	18.2
1393.0	53.7	37.5	150	9.0	1.32	12.90	114064	78.93	138.32	8.4	18.2
1394.0	45.6	36.8	150	9.0	1.37	12.92	114261	93.07	138.24	8.4	18.2
1395.0	58.1	34.0	150	9.0	1.26	12.94	114416	73.04	138.13	8.4	18.2
1396.0	47.4	35.0	150	9.0	1.34	12.96	114606	89.53	138.05	8.4	18.2
1397.0	46.2	37.3	150	9.0	1.37	12.98	114801	91.89	137.97	8.4	18.2
1398.0	43.4	36.8	150	9.0	1.39	13.00	115009	97.78	137.90	8.4	18.2
1399.0	51.4	34.7	150	9.0	1.31	13.02	115184	82.46	137.81	8.4	18.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1400.0	48.0	33.0	150	9.0	1.31	13.04	115371	88.35	137.73	8.4	18.2
1401.0	50.1	35.3	150	9.0	1.32	13.06	115551	84.65	137.64	8.4	18.2
1402.0	42.7	44.0	150	9.0	1.47	13.09	115761	99.32	137.57	8.4	18.2
1403.0	47.0	42.5	150	9.0	1.42	13.11	115953	90.23	137.49	8.4	18.3
1404.0	51.4	43.8	150	9.0	1.40	13.13	116128	82.46	137.40	8.4	18.3
1405.0	69.2	38.4	150	9.0	1.25	13.14	116258	61.26	137.27	8.4	18.3
1406.0	50.7	38.4	150	9.0	1.35	13.16	116435	83.64	137.19	8.4	18.3
1407.0	49.3	38.8	150	9.0	1.37	13.18	116618	86.00	137.10	8.4	18.3
1408.0	76.6	37.8	150	9.0	1.21	13.19	116735	55.37	136.96	8.4	18.3
1409.0	56.2	36.7	150	9.0	1.30	13.21	116895	75.40	136.86	8.4	18.3
1410.0	53.7	38.9	150	9.0	1.34	13.23	117063	78.93	136.77	8.4	18.3
1411.0	54.5	38.6	150	9.0	1.33	13.25	117228	77.75	136.67	8.4	18.3
1412.0	69.2	38.2	150	9.0	1.24	13.26	117358	61.26	136.54	8.4	18.3
1413.0	46.8	37.9	150	9.0	1.37	13.29	117550	90.71	136.47	8.4	18.3
1414.0	61.0	35.6	150	9.0	1.26	13.30	117698	69.51	136.36	8.4	18.3
1415.0	61.0	33.5	150	9.0	1.24	13.32	117845	69.51	136.25	8.4	18.3
1416.0	59.0	34.2	150	9.0	1.26	13.33	117998	71.86	136.14	8.4	18.3
1417.0	59.0	35.6	150	9.0	1.27	13.35	118150	71.86	136.04	8.4	18.3
1418.0	70.6	34.1	150	9.0	1.20	13.37	118278	60.08	135.91	8.4	18.3
1419.0	50.0	34.2	150	9.0	1.31	13.39	118458	84.82	135.83	8.4	18.3
1420.0	67.9	34.8	150	9.0	1.22	13.40	118590	62.44	135.71	8.4	18.3
1421.0	58.1	35.0	150	9.0	1.27	13.42	118745	73.04	135.61	8.4	18.3
1422.0	50.7	35.1	150	9.0	1.32	13.44	118923	83.64	135.52	8.4	18.3
1423.0	67.9	35.2	150	9.0	1.22	13.45	119055	62.44	135.41	8.4	18.3
1424.0	50.0	35.6	150	9.0	1.33	13.47	119235	84.82	135.32	8.4	18.3
1425.0	53.7	36.5	150	9.0	1.31	13.49	119403	78.93	135.23	8.4	18.3
1426.0	64.3	37.6	150	9.0	1.26	13.51	119543	65.97	135.12	8.4	18.3
1427.0	60.0	37.2	150	9.0	1.28	13.52	119693	70.68	135.02	8.4	18.3
1428.0	58.1	36.6	150	9.0	1.29	13.54	119848	73.04	134.92	8.4	18.3
1429.0	46.2	36.6	150	9.0	1.36	13.56	120043	91.89	134.85	8.4	18.3
1430.0	53.7	37.7	150	9.0	1.32	13.58	120210	78.93	134.76	8.4	18.3
1431.0	58.1	37.0	150	9.0	1.29	13.60	120365	73.04	134.66	8.4	18.3
1432.0	48.0	36.6	150	9.0	1.35	13.62	120553	88.35	134.59	8.4	18.3
1433.0	46.8	36.1	150	9.0	1.35	13.64	120745	90.71	134.52	8.4	18.3
1434.0	61.0	34.5	150	9.0	1.25	13.66	120893	69.51	134.41	8.4	18.3
1435.0	30.0	35.7	150	9.0	1.50	13.69	121193	141.37	134.42	8.4	18.3
1436.0	49.3	37.9	150	9.0	1.36	13.71	121375	86.00	134.35	8.4	18.3
1437.0	52.9	35.9	150	9.0	1.31	13.73	121545	80.11	134.26	8.4	18.3
1438.0	47.4	36.3	150	9.0	1.35	13.75	121735	89.53	134.19	8.4	18.3
1439.0	47.4	36.8	150	9.0	1.36	13.77	121925	89.53	134.12	8.4	18.3
1440.0	42.4	36.9	150	9.0	1.40	13.79	122138	100.13	134.07	8.4	18.3
1441.0	46.8	37.8	150	9.0	1.37	13.82	122330	90.71	134.00	8.4	18.3
1442.0	41.9	35.0	150	9.0	1.38	13.84	122545	101.31	133.95	8.4	18.3
1443.0	47.4	35.0	150	9.0	1.34	13.86	122735	89.53	133.88	8.4	18.3
1444.0	43.4	35.7	150	9.0	1.37	13.88	122943	97.78	133.82	8.4	18.3
1445.0	42.4	36.2	150	9.0	1.39	13.91	123155	100.13	133.77	8.4	18.3
1446.0	46.8	36.1	150	9.0	1.35	13.93	123348	90.71	133.70	8.4	18.3
1447.0	39.1	37.0	150	9.0	1.42	13.95	123578	108.38	133.66	8.4	18.3
1448.0	40.5	38.0	150	9.0	1.42	13.98	123800	104.72	133.62	8.4	18.3
1449.0	68.8	37.2	150	9.0	1.24	13.99	123931	61.64	133.50	8.4	18.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1450.0	51.2	37.3	150	9.0	1.34	14.01	124107	82.83	133.43	8.4	18.3
1451.0	36.0	38.5	150	9.0	1.47	14.04	124357	117.81	133.40	8.4	18.3
1452.0	54.5	36.9	150	9.0	1.31	14.06	124522	77.75	133.32	8.4	18.3
1453.0	33.6	38.8	150	9.0	1.50	14.09	124789	126.05	133.30	8.4	18.3
1454.0	37.9	38.2	150	9.0	1.45	14.12	125027	111.92	133.27	8.4	18.4
1455.0	41.9	37.9	150	9.0	1.41	14.14	125242	101.31	133.22	8.4	18.4
1456.0	51.4	38.1	150	9.0	1.34	14.16	125417	82.46	133.14	8.4	18.4
1457.0	40.4	37.1	150	9.0	1.41	14.18	125639	104.85	133.10	8.4	18.4
1458.0	52.2	37.4	150	9.0	1.33	14.20	125812	81.29	133.02	8.4	18.4
1459.0	51.4	37.2	150	9.0	1.33	14.22	125987	82.46	132.94	8.4	18.4
1460.0	43.9	37.0	150	9.0	1.39	14.25	126192	96.60	132.89	8.4	18.4
1461.0	40.4	33.2	150	9.0	1.37	14.27	126414	104.85	132.84	8.4	18.4
1462.0	38.7	35.2	150	9.0	1.41	14.30	126647	109.56	132.81	8.4	18.4
1463.0	40.4	31.4	150	9.0	1.35	14.32	126869	104.85	132.77	8.4	18.4
1464.0	38.3	29.8	150	9.0	1.34	14.35	127104	110.74	132.73	8.4	18.4
1465.0	54.5	30.4	150	9.0	1.24	14.37	127269	77.75	132.65	8.4	18.4
1466.0	51.4	28.6	150	9.0	1.24	14.38	127444	82.46	132.57	8.4	18.4
1467.0	37.9	29.0	150	9.0	1.34	14.41	127682	111.92	132.54	8.4	18.4
1468.0	46.8	29.3	150	9.0	1.27	14.43	127874	90.71	132.48	8.4	18.4
1469.0	40.4	30.2	150	9.0	1.33	14.46	128097	104.85	132.44	8.4	18.4
1470.0	32.1	29.8	150	9.0	1.40	14.49	128377	131.94	132.44	8.4	18.4
1471.0	52.9	30.2	150	9.0	1.25	14.51	128547	80.11	132.36	8.4	18.4
1472.0	50.7	28.7	150	9.0	1.24	14.53	128724	83.64	132.29	8.4	18.4
1473.0	47.4	28.5	150	9.0	1.26	14.55	128914	89.53	132.22	8.4	18.4
1474.0	49.3	29.3	150	9.0	1.26	14.57	129097	86.00	132.15	8.4	18.4
1475.0	44.4	28.5	150	9.0	1.28	14.59	129299	95.42	132.10	8.4	18.4
1476.0	43.5	32.1	150	9.0	1.33	14.61	129506	97.49	132.05	8.4	18.4
1477.0	46.1	29.2	150	9.0	1.28	14.64	129701	92.00	131.99	8.4	18.4
1478.0	39.1	29.3	150	9.0	1.33	14.66	129931	108.38	131.95	8.4	18.4
1479.0	34.0	30.7	150	9.0	1.39	14.69	130196	124.87	131.94	8.4	18.4
1480.0	51.4	27.9	150	9.0	1.23	14.71	130371	82.46	131.87	8.4	18.4
1481.0	43.4	28.5	150	9.0	1.29	14.73	130579	97.78	131.82	8.4	18.4
1482.0	40.9	29.3	150	9.0	1.32	14.76	130799	103.67	131.77	8.4	18.4
1483.0	57.1	31.8	150	9.0	1.24	14.77	130956	74.22	131.69	8.4	18.4
1484.0	35.0	34.5	150	9.0	1.43	14.80	131214	121.34	131.67	8.4	18.4
1485.0	45.6	32.4	150	9.0	1.32	14.83	131411	93.07	131.62	8.4	18.4
1486.0	44.4	32.8	150	9.0	1.33	14.85	131614	95.42	131.56	8.4	18.4
1487.0	43.4	32.9	150	9.0	1.34	14.87	131821	97.78	131.51	8.4	18.4
1488.0	49.3	32.3	150	9.0	1.29	14.89	132004	86.00	131.45	8.4	18.4
1489.0	42.4	35.2	150	9.0	1.38	14.91	132216	100.13	131.40	8.4	18.4
1490.0	43.4	32.9	150	9.0	1.34	14.94	132424	97.78	131.35	8.4	18.4
1491.0	41.9	32.9	150	9.0	1.35	14.96	132639	101.31	131.31	8.4	18.4
1492.0	40.9	32.7	150	9.0	1.36	14.99	132859	103.67	131.27	8.4	18.4
1493.0	52.2	32.0	150	9.0	1.27	15.01	133031	81.29	131.20	8.4	18.4
1494.0	37.5	33.0	150	9.0	1.39	15.03	133271	113.09	131.17	8.4	18.4
1495.0	48.0	33.5	150	9.0	1.32	15.05	133459	88.35	131.11	8.4	18.4
1496.0	52.9	32.2	150	9.0	1.27	15.07	133629	80.11	131.03	8.4	18.4
1497.0	48.6	32.0	150	9.0	1.29	15.09	133814	87.18	130.97	8.4	18.4
1498.0	42.4	32.2	150	9.0	1.34	15.12	134026	100.13	130.93	8.4	18.4
1499.0	41.9	33.9	150	9.0	1.36	15.14	134241	101.31	130.88	8.4	18.4

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1500.0	58.1	31.2	150	9.0	1.23	15.16	134396	73.04	130.80	8.4	18.4
1501.0	39.1	33.6	150	9.0	1.38	15.18	134626	108.38	130.77	8.4	18.4
1502.0	48.6	35.7	150	9.0	1.34	15.20	134811	87.18	130.70	8.4	18.4
1503.0	44.4	35.6	150	9.0	1.37	15.23	135014	95.42	130.65	8.4	18.4
1504.0	37.9	36.4	150	9.0	1.43	15.25	135251	111.92	130.63	8.4	18.4
1505.0	58.1	34.9	150	9.0	1.27	15.27	135406	73.04	130.54	8.4	18.4
1506.0	35.0	36.1	150	9.0	1.45	15.30	135664	121.34	130.53	8.4	18.5
1507.0	50.0	35.8	150	9.0	1.33	15.32	135844	84.82	130.47	8.4	18.5
1508.0	52.2	35.6	150	9.0	1.31	15.34	136016	81.29	130.40	8.4	18.5
1509.0	35.3	35.0	150	9.0	1.43	15.37	136271	120.16	130.38	8.4	18.5
1510.0	39.1	35.1	150	9.0	1.40	15.39	136501	108.38	130.35	8.4	18.5
1511.0	53.7	34.2	150	9.0	1.29	15.41	136669	78.93	130.28	8.4	18.5
1512.0	36.4	36.3	150	9.0	1.44	15.44	136916	116.63	130.26	8.4	18.5
1513.0	59.0	35.3	150	9.0	1.27	15.45	137069	71.86	130.18	8.4	18.5
1514.0	47.4	34.6	150	9.0	1.33	15.48	137259	89.53	130.12	8.4	18.5
1515.0	42.9	37.1	150	9.0	1.39	15.50	137469	98.96	130.07	8.4	18.5
1516.0	54.5	35.8	150	9.0	1.30	15.52	137634	77.75	130.00	8.4	18.5
1517.0	31.3	37.3	150	9.0	1.50	15.55	137921	135.48	130.01	8.4	18.5
1518.0	62.1	36.1	150	9.0	1.26	15.56	138066	68.33	129.92	8.4	18.5
1519.0	58.1	35.1	150	9.0	1.27	15.58	138221	73.04	129.84	8.4	18.5
1520.0	46.8	35.8	150	9.0	1.35	15.60	138414	90.71	129.79	8.4	18.5
1521.0	53.7	35.4	150	9.0	1.30	15.62	138581	78.93	129.72	8.4	18.5
1522.0	51.4	36.5	150	9.0	1.33	15.64	138756	82.46	129.65	8.4	18.5
1523.0	50.0	35.6	150	9.0	1.33	15.66	138936	84.82	129.59	8.4	18.5
1524.0	59.0	36.1	150	9.0	1.28	15.68	139089	71.86	129.51	8.4	18.5
1525.0	57.1	34.6	150	9.0	1.27	15.70	139246	74.22	129.43	8.4	18.5
1526.0	91.1	37.0	150	9.0	1.14	15.71	139345	46.55	129.31	8.4	18.5
1527.0	43.0	36.8	150	9.0	1.39	15.73	139555	98.66	129.27	8.4	18.5
1528.0	50.0	36.0	150	9.0	1.33	15.75	139735	84.82	129.21	8.4	18.5
1529.0	46.2	36.0	150	9.0	1.36	15.77	139930	91.89	129.16	8.4	18.5
1530.0	53.7	35.5	150	9.0	1.30	15.79	140097	78.93	129.09	8.4	18.5
1531.0	46.8	36.7	150	9.0	1.36	15.81	140290	90.71	129.04	8.4	18.5
1532.0	46.2	34.4	150	9.0	1.34	15.83	140485	91.89	128.99	8.4	18.5
1533.0	45.6	34.8	150	9.0	1.35	15.86	140682	93.07	128.94	8.4	18.5
1534.0	42.9	35.4	150	9.0	1.37	15.88	140892	98.96	128.90	8.4	18.5
1535.0	56.2	35.4	150	9.0	1.29	15.90	141052	75.40	128.82	8.4	18.5
1536.0	56.2	33.8	150	9.0	1.27	15.91	141212	75.40	128.75	8.4	18.5
1537.0	39.6	35.9	150	9.1	1.39	15.94	141440	107.20	128.72	8.4	18.5
1538.0	47.4	35.0	150	9.1	1.32	15.96	141630	89.53	128.67	8.4	18.5
1539.0	38.7	39.3	150	9.1	1.44	15.99	141862	109.56	128.64	8.4	18.5
1540.0	53.7	41.7	150	9.1	1.35	16.01	142030	78.93	128.57	8.4	18.5
1541.0	43.9	40.7	150	9.1	1.41	16.03	142235	96.60	128.53	8.4	18.5
1542.0	48.6	42.0	150	9.1	1.39	16.05	142420	87.18	128.47	8.4	18.5
1543.0	46.8	43.1	150	9.1	1.41	16.07	142612	90.71	128.42	8.4	18.5
1544.0	45.0	41.8	150	9.1	1.41	16.09	142812	94.24	128.37	8.4	18.5
1545.0	49.3	41.4	150	9.1	1.38	16.11	142995	86.00	128.32	8.4	18.5
1546.0	52.2	41.7	150	9.1	1.36	16.13	143167	81.29	128.25	8.4	18.5
1547.0	35.0	40.1	150	9.1	1.48	16.16	143425	121.34	128.24	8.4	18.5
1548.0	41.9	41.3	150	9.1	1.43	16.18	143640	101.31	128.21	8.4	18.5
1549.0	48.6	41.8	150	9.1	1.39	16.20	143825	87.18	128.15	8.4	18.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1550.0	36.4	41.5	150	9.1	1.48	16.23	144072	116.63	128.14	8.4	18.5
1551.0	45.6	41.9	150	9.1	1.41	16.25	144270	93.07	128.09	8.4	18.5
1552.0	49.3	42.2	150	9.1	1.39	16.27	144452	86.00	128.03	8.4	18.5
1553.0	41.9	42.0	150	9.1	1.44	16.30	144667	101.31	128.00	8.4	18.5
1554.0	45.6	41.7	150	9.1	1.41	16.32	144865	93.07	127.95	8.4	18.5
1555.0	50.0	42.7	150	9.1	1.39	16.34	145045	84.82	127.89	8.4	18.5
1556.0	28.3	42.5	150	9.1	1.58	16.38	145362	149.61	127.92	8.4	18.5
1557.0	47.4	42.0	150	9.1	1.40	16.40	145552	89.53	127.87	8.4	18.5
1558.0	50.7	42.3	150	9.1	1.38	16.42	145730	83.64	127.81	8.4	18.5
1559.0	48.0	42.2	150	9.1	1.40	16.44	145917	88.35	127.76	8.4	18.6
1560.0	42.4	41.9	150	9.1	1.44	16.46	146130	100.13	127.72	8.4	18.6
1561.0	39.1	43.0	150	9.1	1.47	16.49	146360	108.38	127.70	8.4	18.6
1562.0	50.0	41.9	150	9.1	1.38	16.51	146540	84.82	127.64	8.4	18.6
1563.0	49.3	41.6	150	9.1	1.38	16.53	146722	86.00	127.59	8.4	18.6
1564.0	46.2	42.8	150	9.1	1.42	16.55	146917	91.89	127.54	8.4	18.6
1565.0	42.9	42.9	150	9.1	1.44	16.57	147127	98.96	127.50	8.4	18.6
1566.0	33.3	41.2	150	9.1	1.51	16.60	147397	127.23	127.50	8.4	18.6
1567.0	41.9	41.3	150	9.1	1.43	16.63	147612	101.31	127.47	8.4	18.6
1568.0	38.7	42.5	150	9.1	1.47	16.65	147845	109.56	127.44	8.4	18.6
1569.0	53.7	41.6	150	9.1	1.35	16.67	148012	78.93	127.38	8.4	18.6
1570.0	38.3	42.1	150	9.1	1.47	16.70	148247	110.74	127.36	8.4	18.6
1571.0	46.8	42.8	150	9.1	1.41	16.72	148440	90.71	127.31	8.4	18.6
1572.0	45.6	41.5	150	9.1	1.41	16.74	148637	93.07	127.27	8.4	18.6
1573.0	38.3	44.0	150	9.1	1.49	16.77	148872	110.74	127.24	8.4	18.6
1574.0	42.4	43.8	150	9.1	1.46	16.79	149085	100.13	127.21	8.4	18.6
1575.0	45.6	43.1	150	9.1	1.42	16.81	149282	93.07	127.16	8.4	18.6
1576.0	36.7	43.4	150	9.1	1.50	16.84	149527	115.45	127.15	8.4	18.6
1577.0	41.9	44.3	150	9.1	1.46	16.86	149742	101.31	127.12	8.4	18.6
1578.0	51.4	43.3	150	9.1	1.38	16.88	149917	82.46	127.06	8.4	18.6
1579.0	39.1	43.9	150	9.1	1.48	16.91	150147	108.38	127.03	8.4	18.6
1580.0	40.0	43.4	150	9.1	1.47	16.93	150372	106.03	127.01	8.4	18.6
1581.0	41.9	43.4	150	9.1	1.46	16.96	150587	101.31	126.97	8.4	18.6
1582.0	45.6	44.2	150	9.1	1.43	16.98	150785	93.07	126.93	8.4	18.6
1583.0	36.0	44.3	150	9.1	1.52	17.01	151035	117.81	126.92	8.4	18.6
1584.0	42.9	43.1	150	9.1	1.44	17.03	151245	98.96	126.88	8.4	18.6
1585.0	38.7	42.9	150	9.1	1.48	17.05	151477	109.56	126.86	8.4	18.6
1586.0	45.0	41.3	150	9.1	1.41	17.08	151677	94.24	126.82	8.4	18.6
1587.0	45.6	42.1	150	9.1	1.41	17.10	151875	93.07	126.77	8.4	18.6
1588.0	42.4	41.6	150	9.1	1.43	17.12	152087	100.13	126.74	8.4	18.6
1589.0	43.4	42.0	150	9.1	1.43	17.15	152295	97.78	126.70	8.4	18.6
1590.0	48.6	40.0	150	9.1	1.37	17.17	152480	87.18	126.65	8.4	18.6
1591.0	45.6	41.8	150	9.1	1.41	17.19	152677	93.07	126.61	8.4	18.6
1592.0	47.4	41.4	150	9.1	1.39	17.21	152867	89.53	126.56	8.4	18.6
1593.0	42.9	42.2	150	9.1	1.43	17.23	153077	98.96	126.53	8.4	18.6
1594.0	34.8	41.4	150	9.1	1.50	17.26	153335	121.73	126.52	8.4	18.6
1595.0	42.4	43.0	150	9.1	1.45	17.28	153548	100.13	126.49	8.4	18.6
1596.0	48.6	43.7	150	9.1	1.41	17.31	153733	87.18	126.44	8.4	18.6
1597.0	33.6	44.4	150	9.1	1.54	17.34	154000	126.05	126.44	8.4	18.6
1598.0	31.3	45.1	150	9.1	1.58	17.37	154288	135.48	126.45	8.4	18.6
1599.0	29.0	44.1	150	9.1	1.59	17.40	154598	146.08	126.47	8.4	18.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1600.0	32.1	44.1	150	9.1	1.56	17.43	154878	131.94	126.48	8.4	18.6
1601.0	32.1	43.8	150	9.1	1.55	17.46	155158	132.12	126.49	8.4	18.6
1602.0	37.2	45.3	150	9.1	1.52	17.49	155400	113.88	126.47	8.4	18.6
1603.0	41.1	44.3	150	9.1	1.47	17.52	155619	103.08	126.44	8.4	18.6
1604.0	30.3	44.1	150	9.1	1.58	17.55	155916	140.19	126.46	8.4	18.6
1605.0	32.4	43.8	150	9.1	1.55	17.58	156194	130.76	126.47	8.4	18.6
1606.0	34.3	44.5	150	9.1	1.54	17.61	156456	123.70	126.46	8.4	18.6
1607.0	33.6	43.6	150	9.1	1.53	17.64	156724	126.05	126.46	8.4	18.6
1608.0	43.4	43.0	150	9.1	1.44	17.66	156931	97.78	126.43	8.4	18.6
1609.0	43.4	42.9	150	9.1	1.44	17.68	157139	97.78	126.39	8.4	18.6
1610.0	35.3	42.5	150	9.1	1.50	17.71	157394	120.16	126.38	8.4	18.6
1611.0	40.9	42.7	150	9.1	1.46	17.74	157614	103.67	126.35	8.4	18.6
1612.0	57.1	42.7	150	9.1	1.34	17.75	157771	74.22	126.29	8.4	18.6
1613.0	35.6	42.6	150	9.1	1.50	17.78	158024	118.98	126.28	8.4	18.6
1614.0	37.8	43.0	150	9.1	1.49	17.81	158262	112.20	126.26	8.4	18.6
1615.0	26.7	43.6	150	9.1	1.61	17.85	158599	159.04	126.30	8.4	18.7
1616.0	50.7	41.5	150	9.1	1.37	17.87	158777	83.64	126.25	8.4	18.7
1617.0	31.3	43.1	150	9.1	1.55	17.90	159064	135.48	126.26	8.4	18.7
1618.0	44.4	43.4	150	9.1	1.43	17.92	159267	95.42	126.22	8.4	18.7
1619.0	43.9	43.0	150	9.1	1.43	17.94	159472	96.60	126.19	8.4	18.7
1620.0	28.3	43.4	150	9.1	1.59	17.98	159789	149.61	126.22	8.4	18.7
1621.0	29.5	43.9	150	9.1	1.58	18.01	160094	143.72	126.24	8.4	18.7
1622.0	52.4	40.0	150	9.1	1.34	18.03	160266	80.94	126.18	8.4	18.7
1623.0	44.4	42.7	150	9.1	1.43	18.05	160469	95.42	126.15	8.4	18.7
1624.0	35.6	42.9	150	9.1	1.51	18.08	160721	118.98	126.14	8.4	18.7
1625.0	28.6	43.3	150	9.1	1.59	18.12	161036	148.44	126.16	8.4	18.7
1626.0	28.1	42.2	150	9.1	1.58	18.15	161356	150.79	126.19	8.4	18.7
1627.0	45.0	42.4	150	9.1	1.42	18.17	161556	94.24	126.15	8.4	18.7
1628.0	40.9	43.8	150	9.1	1.47	18.20	161776	103.67	126.13	8.4	18.7
1629.0	43.4	43.7	150	9.1	1.45	18.22	161984	97.78	126.09	8.4	18.7
1630.0	45.6	42.7	150	9.1	1.42	18.24	162181	93.07	126.05	8.4	18.7
1631.0	34.3	43.4	150	9.1	1.52	18.27	162444	123.70	126.05	8.4	18.7
1632.0	46.2	41.2	150	9.1	1.40	18.30	162639	91.89	126.01	8.4	18.7
1633.0	40.9	43.0	150	9.2	1.44	18.32	162859	103.67	125.98	8.4	18.7
1634.0	42.9	43.0	150	9.2	1.43	18.34	163069	98.96	125.95	8.4	18.7
1635.0	34.6	44.1	150	9.2	1.51	18.37	163329	122.52	125.94	8.4	18.7
1636.0	41.9	43.5	150	9.2	1.44	18.40	163544	101.31	125.92	8.4	18.7
1637.0	42.4	43.7	150	9.2	1.44	18.42	163756	100.13	125.88	8.4	18.7
1638.0	43.4	45.1	150	9.2	1.44	18.44	163964	97.78	125.85	8.4	18.7
1639.0	47.4	43.8	150	9.2	1.40	18.46	164154	89.53	125.81	8.4	18.7
1640.0	35.6	45.1	150	9.2	1.51	18.49	164406	118.98	125.80	8.4	18.7
1641.0	35.6	42.9	150	9.2	1.49	18.52	164659	118.98	125.79	8.4	18.7
1642.0	32.7	44.0	150	9.2	1.53	18.55	164934	129.59	125.79	8.4	18.7
1643.0	34.6	42.8	150	9.2	1.50	18.58	165194	122.52	125.79	8.4	18.7
1644.0	34.6	42.7	150	9.2	1.50	18.61	165454	122.52	125.79	8.4	18.7
1645.0	33.3	43.5	150	9.2	1.52	18.64	165724	127.23	125.79	8.4	18.7
1646.0	27.7	43.1	150	9.2	1.58	18.67	166049	153.15	125.82	8.4	18.7
1647.0	33.0	43.6	150	9.2	1.52	18.70	166321	128.41	125.82	8.4	18.7
1648.0	33.3	44.7	150	9.2	1.53	18.73	166591	127.23	125.83	8.4	18.7
1649.0	38.3	43.7	150	9.2	1.47	18.76	166826	110.74	125.81	8.4	18.7

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1650.0	33.3	42.4	150	9.2	1.51	18.79	167096	127.23	125.81	8.4	18.7
1651.0	34.0	42.6	150	9.2	1.50	18.82	167361	124.87	125.81	8.4	18.7
1652.0	35.0	43.7	150	9.2	1.51	18.85	167619	121.34	125.80	8.4	18.7
1653.0	27.7	44.1	150	9.2	1.59	18.88	167944	153.15	125.84	8.4	18.7
1654.0	31.0	43.9	150	9.2	1.55	18.92	168234	136.65	125.85	8.4	18.7
1655.0	34.0	43.2	150	9.2	1.51	18.95	168499	124.87	125.85	8.4	18.7
1656.0	37.9	43.1	150	9.2	1.47	18.97	168736	111.92	125.83	8.4	18.7
1657.0	31.0	43.3	150	9.2	1.54	19.00	169026	136.65	125.84	8.4	18.7
1658.0	35.3	43.3	150	9.2	1.50	19.03	169281	120.16	125.84	8.4	18.7
1659.0	32.7	44.0	150	9.2	1.53	19.06	169556	129.59	125.84	8.4	18.7
1660.0	30.8	43.4	150	9.2	1.55	19.10	169849	137.83	125.86	8.4	18.7
1661.0	28.6	43.8	150	9.2	1.58	19.13	170164	148.44	125.88	8.4	18.7
1662.0	29.0	42.7	150	9.2	1.56	19.17	170474	146.08	125.91	8.4	18.7
1663.0	35.0	43.3	150	9.2	1.50	19.19	170731	121.34	125.90	8.4	18.7
1664.0	33.0	42.6	150	9.2	1.51	19.22	171004	128.41	125.90	8.4	18.7
1665.0	35.6	43.4	150	9.2	1.50	19.25	171256	118.98	125.89	8.4	18.7
1666.0	36.4	43.2	150	9.2	1.49	19.28	171504	116.63	125.88	8.4	18.7
1667.0	39.6	43.3	150	9.2	1.46	19.31	171731	107.20	125.86	8.4	18.7
1668.0	33.6	42.9	150	9.2	1.51	19.34	171999	126.05	125.86	8.4	18.7
1669.0	31.9	42.4	150	9.2	1.52	19.37	172281	133.12	125.87	8.4	18.7
1670.0	33.6	43.1	150	9.2	1.51	19.40	172549	126.05	125.87	8.4	18.7
1671.0	33.0	43.7	150	9.2	1.52	19.43	172821	128.41	125.87	8.4	18.8
1672.0	32.7	44.1	150	9.2	1.53	19.46	173096	129.59	125.88	8.4	18.8
1673.0	38.7	42.6	150	9.2	1.46	19.48	173329	109.56	125.86	8.4	18.8
1674.0	33.3	43.9	150	9.2	1.52	19.51	173599	127.23	125.86	8.4	18.8
1675.0	40.4	44.3	150	9.2	1.46	19.54	173821	104.85	125.84	8.4	18.8
1676.0	36.4	44.2	150	9.2	1.50	19.57	174069	116.63	125.83	8.4	18.8
1677.0	34.0	44.0	150	9.2	1.52	19.59	174334	124.87	125.83	8.4	18.8
1678.0	39.1	44.1	150	9.2	1.47	19.62	174564	108.38	125.81	8.4	18.8
1679.0	34.0	43.7	150	9.2	1.52	19.65	174829	124.87	125.80	8.4	18.8
1680.0	39.6	45.2	150	9.2	1.48	19.67	175056	107.20	125.78	8.4	18.8
1681.0	37.9	44.5	150	9.2	1.49	19.70	175294	111.92	125.77	8.4	18.8
1682.0	37.9	44.1	150	9.2	1.48	19.73	175531	111.92	125.75	8.4	18.8
1683.0	38.7	42.6	150	9.2	1.46	19.75	175764	109.56	125.73	8.4	18.8
1684.0	40.9	43.0	150	9.2	1.44	19.78	175984	103.67	125.71	8.4	18.8
1685.0	36.7	42.9	150	9.2	1.48	19.81	176229	115.45	125.70	8.4	18.8
1686.0	36.7	43.1	150	9.2	1.48	19.83	176474	115.45	125.68	8.4	18.8
1687.0	30.3	44.5	150	9.2	1.56	19.87	176771	140.19	125.70	8.4	18.8
1688.0	32.7	44.3	150	9.2	1.53	19.90	177046	129.59	125.71	8.4	18.8
1689.0	40.9	43.9	150	9.2	1.45	19.92	177266	103.67	125.68	8.4	18.8
1690.0	41.4	44.0	150	9.2	1.45	19.94	177484	102.49	125.65	8.4	18.8
1691.0	34.0	44.8	150	9.2	1.53	19.97	177749	124.87	125.65	8.4	18.8
1692.0	31.0	44.6	150	9.2	1.56	20.01	178039	136.65	125.67	8.4	18.8
1693.0	31.9	44.7	150	9.2	1.55	20.04	178321	133.12	125.67	8.4	18.8
1694.0	35.3	43.5	150	9.2	1.50	20.07	178576	120.16	125.67	8.4	18.8
1695.0	36.4	43.9	150	9.2	1.49	20.09	178824	116.63	125.66	8.4	18.8
1696.0	33.3	44.0	150	9.2	1.53	20.12	179094	127.23	125.66	8.4	18.8
1697.0	28.8	42.0	150	9.2	1.55	20.16	179406	147.26	125.68	8.4	18.8
1698.0	35.6	43.1	150	9.2	1.49	20.19	179659	118.98	125.68	8.4	18.8
1699.0	30.5	44.5	150	9.2	1.56	20.22	179954	139.01	125.69	8.4	18.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1700.0	43.9	43.1	150	9.2	1.42	20.24	180159	96.60	125.66	8.4	18.8
1701.0	28.3	42.8	150	9.2	1.57	20.28	180476	149.61	125.69	8.4	18.8
1702.0	31.3	43.8	150	9.2	1.54	20.31	180764	135.48	125.70	8.4	18.8
1703.0	32.7	43.1	150	9.2	1.52	20.34	181039	129.59	125.70	8.4	18.8
1704.0	30.8	44.7	150	9.2	1.56	20.37	181331	137.83	125.71	8.4	18.8
1705.0	37.9	43.9	150	9.2	1.48	20.40	181569	111.92	125.70	8.4	18.8
1706.0	47.4	43.0	150	9.2	1.39	20.42	181759	89.53	125.66	8.4	18.8
1707.0	32.7	45.7	150	9.2	1.55	20.45	182034	129.59	125.66	8.4	18.8
1708.0	29.3	47.1	150	9.2	1.60	20.48	182341	144.90	125.68	8.4	18.8
1709.0	29.8	47.1	150	9.2	1.60	20.52	182644	142.54	125.70	8.4	18.8
1710.0	32.4	46.2	150	9.2	1.56	20.55	182921	130.76	125.71	8.4	18.8
1711.0	33.6	46.8	150	9.2	1.55	20.58	183189	126.05	125.71	8.4	18.8
1712.0	31.0	46.4	150	9.2	1.58	20.61	183479	136.65	125.72	8.4	18.8
1713.0	29.8	46.9	150	9.2	1.60	20.64	183781	142.54	125.74	8.4	18.8
1714.0	33.6	46.5	150	9.2	1.55	20.67	184049	126.05	125.74	8.4	18.8
1715.0	30.0	46.3	150	9.2	1.59	20.71	184349	141.37	125.76	8.4	18.8
1716.0	30.8	45.2	150	9.2	1.57	20.74	184641	137.83	125.77	8.4	18.8
1717.0	30.3	46.7	150	9.2	1.59	20.77	184939	140.19	125.79	8.4	18.8
1718.0	30.0	47.0	150	9.2	1.59	20.81	185239	141.37	125.80	8.4	18.8
1719.0	30.3	46.0	150	9.2	1.58	20.84	185536	140.19	125.82	8.4	18.8
1720.0	29.8	45.8	150	9.2	1.58	20.87	185839	142.54	125.84	8.4	18.8
1721.0	29.5	46.6	150	9.2	1.60	20.91	186144	143.72	125.86	8.4	18.8
1722.0	27.5	46.5	150	9.2	1.62	20.94	186471	154.33	125.89	8.4	18.8
1723.0	29.0	46.7	150	9.2	1.60	20.98	186781	146.08	125.91	8.4	18.8
1724.0	24.8	46.9	150	9.2	1.66	21.02	187144	170.82	125.96	8.4	18.8
1725.0	32.7	45.9	150	9.2	1.55	21.05	187419	129.59	125.96	8.4	18.8
1726.0	31.9	45.6	150	9.2	1.56	21.08	187701	133.12	125.97	8.4	18.8
1727.0	31.0	46.1	150	9.2	1.57	21.11	187991	136.65	125.98	8.4	18.8
1728.0	32.7	44.6	150	9.2	1.54	21.14	188266	129.59	125.99	8.4	18.8
1729.0	32.7	46.1	150	9.2	1.55	21.17	188541	129.59	125.99	8.4	18.8
1730.0	28.3	45.5	150	9.2	1.60	21.21	188859	149.61	126.02	8.4	18.9
1731.0	26.1	44.8	150	9.2	1.62	21.25	189204	162.57	126.06	8.4	18.9
1732.0	25.5	42.4	150	9.2	1.60	21.29	189556	166.11	126.10	8.4	18.9
1733.0	29.3	43.4	150	9.2	1.56	21.32	189864	144.90	126.12	8.4	18.9
1734.0	30.8	42.2	150	9.2	1.53	21.35	190156	137.83	126.13	8.4	18.9
1735.0	34.3	42.0	150	9.2	1.49	21.38	190419	123.70	126.13	8.4	18.9
1736.0	31.0	42.2	150	9.2	1.53	21.41	190709	136.65	126.14	8.4	18.9
1737.0	23.8	44.8	150	9.2	1.65	21.46	191086	177.89	126.20	8.4	18.9
1738.0	31.9	43.2	150	9.2	1.53	21.49	191369	133.12	126.20	8.4	18.9
1739.0	31.3	43.6	150	9.2	1.54	21.52	191656	135.48	126.21	8.4	18.9
1740.0	27.1	45.5	150	9.2	1.61	21.56	191989	156.68	126.25	8.4	18.9
1741.0	36.4	46.0	150	9.2	1.52	21.58	192236	116.63	126.24	8.4	18.9
1742.0	30.8	46.5	150	9.2	1.58	21.62	192529	137.83	126.25	8.4	18.9
1743.0	29.0	45.1	150	9.2	1.58	21.65	192839	146.08	126.27	8.4	18.9
1744.0	30.0	42.7	150	9.2	1.55	21.68	193139	141.37	126.28	8.4	18.9
1745.0	34.6	43.8	150	9.2	1.51	21.71	193399	122.52	126.28	8.4	18.9
1746.0	30.5	44.8	150	9.2	1.56	21.75	193694	139.01	126.29	8.4	18.9
1747.0	39.1	46.3	150	9.2	1.49	21.77	193924	108.38	126.28	8.4	18.9
1748.0	27.9	46.2	150	9.2	1.61	21.81	194246	151.97	126.30	8.4	18.9
1749.0	21.7	46.8	150	9.2	1.71	21.85	194661	195.56	126.38	8.4	18.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1750.0	17.0	45.4	150	9.2	1.78	21.91	195191	249.75	126.51	8.4	18.9
1751.0	10.3	45.5	150	9.2	1.95	22.01	196061	409.96	126.81	8.4	18.9

BIT NUMBER	4	IADC CODE	437	INTERVAL	1751.0- 1837.0
HTC J11		SIZE	12.250	NOZZLES	16 16 16
COST	6788.00	TRIP TIME	5:9	BIT RUN	86.0
TOTAL HOURS	7.07	TOTAL TURNS	48632	CONDITION	T1 B1 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1752.0	4.9	31.4	130	9.2	1.93	0.20	1584	861	32671	8.4	18.9
1753.0	5.1	27.7	130	9.2	1.85	0.40	3101	825	16748	8.4	18.9
1754.0	5.3	25.9	130	9.2	1.81	0.59	4574	801	11432	8.4	18.9
1755.0	6.6	27.8	130	9.2	1.77	0.74	5751	640	8734	8.4	18.9
1756.0	8.2	31.3	130	9.2	1.77	0.86	6700	516	7091	8.4	18.9
1757.0	10.1	31.5	130	9.2	1.71	0.96	7475	422	5979	8.4	18.9
1758.0	12.5	31.9	130	9.2	1.65	1.04	8101	340	5174	8.4	18.9
1759.0	9.9	31.0	130	9.2	1.70	1.14	8888	428	4580	8.4	18.9
1760.0	9.9	30.7	130	9.2	1.70	1.24	9674	428	4119	8.4	18.9
1761.0	11.2	30.0	130	9.2	1.65	1.33	10372	379	3745	8.4	18.9
1762.0	12.2	31.7	130	9.2	1.65	1.41	11011	348	3436	8.4	18.9
1763.0	8.0	31.0	130	9.2	1.77	1.54	11986	530	3194	8.4	18.9
1764.0	10.1	33.0	130	9.2	1.73	1.64	12758	419	2980	8.4	18.9
1765.0	15.4	34.7	108	9.2	1.56	1.70	13179	276	2787	8.4	18.9
1766.0	10.9	36.3	111	9.2	1.70	1.79	13790	390	2627	8.4	18.9
1767.0	9.8	37.2	111	9.2	1.75	1.89	14469	431	2490	8.4	18.9
1768.0	10.6	38.0	108	9.2	1.73	1.99	15081	402	2367	8.4	18.9
1769.0	11.7	36.3	110	9.2	1.68	2.07	15643	362	2256	8.4	18.9
1770.0	12.2	36.1	110	9.2	1.66	2.16	16182	346	2155	8.4	18.9
1771.0	12.3	36.4	110	9.2	1.66	2.24	16720	345	2065	8.4	18.9
1772.0	10.8	34.6	110	9.2	1.68	2.33	17332	393	1985	8.4	18.9
1773.0	14.9	34.3	110	9.2	1.57	2.40	17776	285	1908	8.4	18.9
1774.0	7.4	32.8	110	9.2	1.77	2.53	18667	573	1850	8.4	18.9
1775.0	8.2	33.9	110	9.2	1.76	2.65	19471	517	1794	8.4	18.9
1776.0	8.2	33.9	110	9.2	1.76	2.78	20280	520	1743	8.4	18.9
1777.0	7.1	32.8	110	9.2	1.79	2.92	21208	596	1699	8.4	18.9
1778.0	6.4	32.9	110	9.2	1.82	3.07	22240	663	1661	8.4	18.9
1779.0	7.1	33.8	110	9.2	1.80	3.21	23169	597	1623	8.4	18.9
1780.0	6.3	40.0	110	9.2	1.93	3.37	24218	674	1590	8.4	18.9
1781.0	7.9	36.9	110	9.2	1.81	3.50	25050	535	1555	8.4	18.9
1782.0	5.8	35.3	110	9.2	1.89	3.67	26198	737	1529	8.4	18.9
1783.0	8.6	32.6	110	9.2	1.72	3.79	26970	496	1496	8.4	18.9
1784.0	10.1	31.9	110	9.2	1.66	3.89	27626	422	1464	8.4	18.9
1785.0	11.9	32.3	110	9.2	1.61	3.97	28180	356	1431	8.4	18.9
1786.0	14.1	32.3	110	9.2	1.56	4.04	28647	300	1399	8.4	18.9
1787.0	11.9	39.2	110	9.2	1.71	4.13	29203	357	1370	8.4	18.9
1788.0	12.8	40.7	110	9.2	1.71	4.21	29718	331	1342	8.4	18.9
1789.0	10.2	40.4	110	9.2	1.78	4.30	30365	416	1318	8.4	18.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1790.0	8.4	40.0	110	9.2	1.84	4.42	31152	505	1297	8.4	19.0
1791.0	14.0	39.1	110	9.2	1.66	4.50	31625	304	1272	8.4	19.0
1792.0	11.2	40.3	110	9.2	1.75	4.59	32215	379	1250	8.4	19.0
1793.0	15.5	40.2	110	9.2	1.63	4.65	32640	273	1227	8.4	19.0
1794.0	15.5	41.0	110	9.2	1.65	4.71	33067	274	1205	8.4	19.0
1795.0	16.9	41.1	110	9.2	1.62	4.77	33458	251	1183	8.4	19.0
1796.0	13.3	42.0	110	9.2	1.71	4.85	33955	319	1164	8.4	19.0
1797.0	12.9	41.4	110	9.2	1.71	4.93	34466	329	1146	8.4	19.0
1798.0	12.8	41.7	110	9.2	1.72	5.00	34981	331	1128	8.4	19.0
1799.0	10.4	41.9	110	9.2	1.79	5.10	35618	409	1113	8.4	19.0
1800.0	13.7	40.2	110	9.2	1.68	5.17	36100	310	1097	8.4	19.0
1801.0	10.3	39.7	110	9.2	1.77	5.27	36741	412	1083	8.4	19.0
1802.0	11.8	38.6	110	9.2	1.70	5.36	37299	358	1069	8.4	19.0
1803.0	11.9	38.8	110	9.2	1.71	5.44	37852	356	1055	8.4	19.0
1804.0	12.0	39.1	110	9.2	1.71	5.52	38404	355	1042	8.4	19.0
1805.0	12.7	40.3	110	9.2	1.70	5.60	38923	333	1029	8.4	19.0
1806.0	9.7	41.2	110	9.2	1.81	5.70	39603	437	1018	8.4	19.0
1807.0	16.7	39.8	110	9.2	1.60	5.76	39997	253	1005	8.4	19.0
1808.0	36.7	38.4	110	9.2	1.33	5.79	40177	115.45	988.97	8.4	19.0
1809.0	17.1	39.2	110	9.2	1.59	5.85	40562	247.39	976.18	8.4	19.0
1810.0	14.1	39.9	110	9.2	1.66	5.92	41030	300.40	964.73	8.4	19.0
1811.0	17.9	38.0	110	9.2	1.56	5.98	41398	236.79	952.60	8.4	19.0
1812.0	19.8	35.6	110	9.2	1.50	6.03	41732	214.41	940.50	8.4	19.0
1813.0	17.1	37.2	110	9.2	1.57	6.09	42119	248.57	929.34	8.4	19.0
1814.0	15.1	38.0	110	9.2	1.62	6.15	42555	280.38	919.04	8.4	19.0
1815.0	22.1	36.8	110	9.2	1.48	6.20	42854	192.02	907.68	8.4	19.0
1816.0	15.0	37.4	110	9.2	1.61	6.26	43294	282.73	898.06	8.4	19.0
1817.0	17.1	37.7	110	9.2	1.57	6.32	43679	247.39	888.20	8.4	19.0
1818.0	17.5	37.6	110	9.2	1.56	6.38	44056	242.68	878.57	8.4	19.0
1819.0	80.0	34.0	110	9.2	1.03	6.39	44139	53.01	866.43	8.4	19.0
1820.0	33.3	34.9	110	9.2	1.32	6.42	44337	127.23	855.71	8.4	19.0
1821.0	16.9	35.2	110	9.2	1.54	6.48	44727	250.93	847.07	8.4	19.0
1822.0	15.3	35.1	110	9.2	1.57	6.55	45160	278.02	839.06	8.4	19.0
1823.0	15.1	32.7	110	9.2	1.55	6.61	45598	281.56	831.32	8.4	19.0
1824.0	16.4	33.4	110	9.2	1.53	6.67	46002	259.17	823.48	8.4	19.0
1825.0	14.5	32.5	110	9.2	1.56	6.74	46456	292.16	816.30	8.4	19.0
1826.0	14.5	33.9	110	9.2	1.57	6.81	46913	293.34	809.33	8.4	19.0
1827.0	15.2	33.2	110	9.2	1.55	6.88	47347	279.20	802.35	8.4	19.0
1828.0	37.1	31.8	110	9.2	1.25	6.90	47525	114.27	793.42	8.4	19.0
1829.0	42.9	30.2	110	9.2	1.19	6.93	47679	98.96	784.51	8.4	19.0
1830.0	69.2	29.8	110	9.2	1.04	6.94	47774	61.26	775.36	8.4	19.0
1831.0	62.1	30.1	110	9.2	1.07	6.96	47881	68.33	766.52	8.4	19.0
1832.0	63.2	35.9	110	9.2	1.12	6.97	47985	67.15	757.88	8.4	19.0
1833.0	59.0	36.8	110	9.2	1.15	6.99	48097	71.86	749.52	8.4	19.0
1834.0	62.1	36.9	110	9.2	1.14	7.01	48203	68.33	741.31	8.4	19.0
1835.0	69.2	34.0	110	9.2	1.08	7.02	48299	61.26	733.22	8.4	19.0
1836.0	44.4	33.4	110	9.2	1.21	7.04	48447	95.42	725.71	8.4	19.0
1837.0	35.6	35.1	110	9.2	1.30	7.07	48632	118.98	718.66	8.4	19.0

BIT NUMBER	4	IADC CODE	4	INTERVAL	1837.9- 1847.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.6
TOTAL HOURS	2.38	TOTAL TURNS	17130	CONDITION	T0 B0 G0.250

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1838.0	90.0	5.4	130	9.2	0.71	0.00	9	47	250266	8.4	19.0
1839.0	12.8	8.9	130	9.2	1.25	0.08	618	331	23052	8.4	19.0
1840.0	18.7	11.3	130	9.2	1.23	0.13	1036	227	12183	8.4	19.0
1841.0	7.8	13.4	130	9.2	1.51	0.26	2037	544	8429	8.4	19.0
1842.0	4.6	15.7	130	9.2	1.72	0.48	3730	921	6598	8.4	19.0
1843.0	2.8	15.0	130	9.2	1.83	0.84	6543	1529	5604	8.4	19.0
1844.0	4.6	16.5	130	9.2	1.74	1.06	8242	924	4837	8.4	19.0
1845.0	5.2	19.2	124	9.2	1.76	1.25	9667	814	4270	8.4	19.0
1846.0	3.8	19.3	110	9.2	1.81	1.51	11394	1110	3880	8.4	19.0
1847.0	1.8	17.8	110	9.2	1.99	2.08	15123	2396	3717	8.4	19.0
1847.5	1.6	17.4	110	9.2	2.00	2.38	17130	2579	3658	8.4	19.0

BIT NUMBER	4	IADC CODE	4	INTERVAL	1847.5- 1856.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.0
TOTAL HOURS	3.07	TOTAL TURNS	22329	CONDITION	T0 B0 G0.300

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1848.0	12.0	4.5	125	9.2	1.10	2.42	17443	353	3494	8.4	19.0
1849.0	12.4	8.0	125	9.2	1.23	2.50	18049	343	3210	8.4	19.0
1850.0	8.3	12.2	125	9.2	1.45	2.62	18953	511	2987	8.4	19.0
1851.0	11.9	15.1	125	9.2	1.43	2.71	19582	356	2786	8.4	19.0
1852.0	15.9	15.9	125	9.2	1.37	2.77	20055	267	2608	8.4	19.1
1853.0	17.3	16.3	125	9.2	1.35	2.83	20488	245	2451	8.4	19.1
1854.0	19.4	17.0	125	9.2	1.34	2.88	20876	219	2313	8.4	19.1
1855.0	14.9	16.7	125	9.2	1.40	2.95	21380	285	2194	8.4	19.1
1856.0	13.1	16.9	125	9.2	1.45	3.02	21953	324	2091	8.4	19.1
1856.5	10.0	17.3	125	9.2	1.53	3.07	22329	426	2046	8.4	19.1

BIT NUMBER	4	IADC CODE	4	INTERVAL	1856.5- 1861.6
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	5.1
TOTAL HOURS	7.47	TOTAL TURNS	54023	CONDITION	T0 B0 G0.350

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1857.0	3.7	18.6	120	9.2	1.83	3.21	23307	1152	2022	8.4	19.1
1858.0	3.5	16.1	120	9.2	1.78	3.49	25347	1202	1981	8.4	19.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1859.0	1.1	15.6	120	9.2	2.08	4.40	31907	3864	2070	8.4	19.1
1860.0	0.7	20.8	120	9.2	2.37	5.79	41889	5880	2243	8.4	19.1
1861.0	1.0	19.4	120	9.2	2.24	6.82	49361	4401	2336	8.4	19.1
1861.6	0.9	18.7	120	9.2	2.23	7.47	54023	4577	2393	8.4	19.1

BIT NUMBER	5	IADC CODE	437	INTERVAL	1861.6- 2062.0
HTC J11		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	6.4	BIT RUN	200.4
TOTAL HOURS	22.32	TOTAL TURNS	147694	CONDITION	T8 B4 G0.125

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1862.0	12.7	25.8	120	9.2	1.52	0.03	227	334	85160	8.4	19.1
1863.0	11.1	26.1	120	9.2	1.57	0.12	875	382	24604	8.4	19.1
1864.0	54.5	23.8	120	9.2	1.07	0.14	1007	78	14385	8.4	19.1
1865.0	43.0	25.4	120	9.2	1.16	0.16	1174	99	10183	8.4	19.1
1866.0	64.0	25.0	120	9.2	1.04	0.18	1287	66	7884	8.4	19.1
1867.0	53.1	21.4	120	9.2	1.05	0.20	1422	80	6439	8.4	19.1
1868.0	39.6	22.1	120	9.2	1.14	0.22	1604	107	5449	8.4	19.1
1869.0	31.0	23.9	120	9.2	1.23	0.26	1836	137	4731	8.4	19.1
1870.0	35.3	24.4	120	9.2	1.20	0.28	2040	120	4182	8.4	19.1
1871.0	31.0	23.4	120	9.2	1.23	0.32	2272	137	3752	8.4	19.1
1872.0	10.4	24.9	120	9.2	1.57	0.41	2962	406	3430	8.4	19.1
1873.0	14.1	24.5	120	9.2	1.47	0.48	3474	302	3156	8.4	19.1
1874.0	27.1	24.4	120	9.2	1.28	0.52	3740	157	2914	8.4	19.1
1875.0	20.5	26.7	120	9.2	1.39	0.57	4092	207	2712	8.4	19.1
1876.0	10.1	27.2	120	9.2	1.61	0.67	4804	419	2553	8.4	19.1
1877.0	16.8	35.0	120	9.2	1.57	0.73	5232	252	2403	8.4	19.1
1878.0	20.8	31.2	120	9.2	1.45	0.77	5578	204	2269	8.4	19.1
1879.0	31.3	32.4	115	9.2	1.33	0.81	5799	135	2147	8.4	19.1
1880.0	48.6	34.6	115	9.2	1.21	0.83	5940	87	2035	8.4	19.1
1881.0	28.1	35.5	115	9.2	1.40	0.86	6186	151	1938	8.4	19.1
1882.0	90.0	31.3	115	9.2	0.98	0.87	6262	47	1845	8.4	19.1
1883.0	76.6	31.9	115	9.2	1.04	0.89	6352	55	1761	8.4	19.1
1884.0	64.3	32.8	115	9.2	1.10	0.90	6460	66	1686	8.4	19.1
1885.0	14.0	17.5	115	9.2	1.34	0.97	6954	304	1627	8.4	19.1
1886.0	69.2	13.8	115	9.2	0.86	0.99	7054	61	1562	8.4	19.1
1887.0	32.4	23.8	115	9.2	1.21	1.02	7267	131	1506	8.4	19.1
1888.0	25.9	34.2	115	9.2	1.41	1.06	7533	164	1455	8.4	19.1
1889.0	38.3	34.5	115	9.2	1.29	1.08	7713	111	1406	8.4	19.1
1890.0	13.1	37.3	115	9.2	1.67	1.16	8240	324	1368	8.4	19.1
1891.0	13.6	37.3	115	9.2	1.66	1.23	8748	312	1332	8.4	19.1
1892.0	9.0	37.5	115	9.2	1.79	1.34	9511	469	1304	8.4	19.1
1893.0	13.8	35.3	115	9.2	1.62	1.42	10011	307	1272	8.4	19.1
1894.0	14.1	28.6	115	9.2	1.52	1.49	10500	300	1242	8.4	19.1
1895.0	5.5	38.5	115	9.2	1.97	1.67	11757	773	1228	8.4	19.1
1896.0	4.5	37.8	115	9.2	2.03	1.89	13304	951	1220	8.4	19.1
1897.0	14.4	37.1	115	9.2	1.63	1.96	13783	295	1194	8.4	19.1

DEPTH	ROP	NOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1898.0	11.5	35.0	115	9.2	1.68	2.05	14381	368	1171	8.4	19.1
1899.0	24.0	34.6	115	9.2	1.44	2.09	14669	177	1144	8.4	19.1
1900.0	6.8	35.3	115	9.2	1.85	2.24	15685	624	1131	8.4	19.1
1901.0	8.8	37.5	115	9.2	1.80	2.35	16471	483	1114	8.4	19.1
1902.0	20.6	34.9	115	9.2	1.49	2.40	16806	206	1092	8.4	19.1
1903.0	17.8	34.3	115	9.2	1.53	2.46	17193	238	1071	8.4	19.1
1904.0	8.4	35.7	115	9.2	1.79	2.58	18015	505	1058	8.4	19.1
1905.0	32.7	36.3	115	9.2	1.36	2.61	18226	130	1037	8.4	19.1
1906.0	20.9	37.0	115	9.2	1.51	2.66	18556	203	1018	8.4	19.1
1907.0	12.1	36.2	115	9.2	1.68	2.74	19125	350	1003	8.4	19.1
1908.0	6.0	34.2	115	9.2	1.87	2.90	20271	704.48	996.70	8.4	19.1
1909.0	13.3	33.1	115	9.2	1.61	2.98	20791	319.25	982.41	8.4	19.1
1910.0	16.4	33.6	115	9.2	1.55	3.04	21212	259.17	967.47	8.4	19.1
1911.0	17.4	33.0	115	9.2	1.52	3.10	21609	243.86	952.82	8.4	19.1
1912.0	36.0	30.5	115	9.2	1.26	3.13	21801	117.81	936.25	8.4	19.1
1913.0	15.8	32.8	115	9.2	1.55	3.19	22238	268.60	923.26	8.4	19.1
1914.0	13.4	31.8	115	9.2	1.58	3.26	22751	315.72	911.67	8.4	19.1
1915.0	14.4	34.0	115	9.2	1.59	3.33	23231	294.51	900.11	8.4	19.1
1916.0	8.7	35.6	115	9.2	1.78	3.45	24024	487.72	892.53	8.4	19.2
1917.0	5.1	38.1	105	9.2	1.96	3.64	25258	830.53	891.41	8.4	19.2
1918.0	8.2	40.5	105	9.2	1.84	3.77	26028	518.34	884.80	8.4	19.2
1919.0	8.1	39.2	105	9.2	1.82	3.89	26807	524.23	878.52	8.4	19.2
1920.0	3.6	40.6	105	9.2	2.12	4.17	28560	1180	884	8.4	19.2
1921.0	5.5	42.6	105	9.2	2.01	4.35	29715	777.52	881.90	8.4	19.2
1922.0	4.2	42.8	105	9.2	2.10	4.59	31222	1014	884	8.4	19.2
1923.0	4.9	41.2	105	9.2	2.02	4.80	32513	869.41	883.85	8.4	19.2
1924.0	5.2	40.2	90	9.2	1.93	4.99	33550	812.86	882.71	8.4	19.2
1925.0	6.9	38.6	88	9.2	1.81	5.13	34310	612.59	878.45	8.4	19.2
1926.0	38.7	36.8	95	9.2	1.24	5.16	34457	109.56	866.51	8.4	19.2
1927.0	19.5	37.2	86	9.2	1.44	5.21	34723	217.94	856.60	8.4	19.2
1928.0	18.6	37.9	97	9.2	1.51	5.26	35036	228.54	847.14	8.4	19.2
1929.0	3.9	38.8	99	9.2	2.04	5.52	36551	1083	851	8.4	19.2
1930.0	2.8	39.9	120	9.2	2.23	5.88	39127	1517	860	8.4	19.2
1931.0	7.7	35.4	120	9.2	1.83	6.01	40065	552.51	855.94	8.4	19.2
1932.0	48.0	31.8	120	9.2	1.20	6.03	40215	88.35	845.04	8.4	19.2
1933.0	11.9	35.0	120	9.2	1.68	6.11	40819	355.77	838.19	8.4	19.2
1934.0	40.0	33.4	120	9.2	1.27	6.14	40999	106.03	828.07	8.4	19.2
1935.0	50.0	33.2	120	9.2	1.20	6.16	41143	84.82	817.95	8.4	19.2
1936.0	3.8	38.8	120	9.2	2.12	6.42	43043	1119	822	8.4	19.2
1937.0	3.8	37.5	120	9.2	2.10	6.69	44957	1127	826	8.4	19.2
1938.0	1.9	37.7	120	9.2	2.33	7.22	48809	2269	845	8.4	19.2
1939.0	2.6	33.6	120	9.2	2.14	7.60	51555	1617	855	8.4	19.2
1940.0	2.9	32.3	120	9.2	2.09	7.95	54049	1469	863	8.4	19.2
1941.0	3.9	35.5	120	9.2	2.05	8.20	55883	1080	865	8.4	19.2
1942.0	12.6	35.1	120	9.2	1.66	8.28	56455	336.92	858.91	8.4	19.2
1943.0	2.3	34.8	120	9.2	2.20	8.71	59521	1806	871	8.4	19.2
1944.0	3.7	35.7	120	9.2	2.07	8.98	61467	1146	874	8.4	19.2
1945.0	3.6	38.8	120	9.2	2.13	9.25	63455	1171	877	8.4	19.2
1946.0	27.9	36.9	120	9.2	1.43	9.29	63713	151.97	868.86	8.4	19.2
1947.0	3.3	40.6	120	9.2	2.19	9.59	65903	1290	874	8.4	19.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
1948.0	3.3	41.3	120	9.2	2.20	9.90	68079	1282	879	8.4	19.2
1949.0	11.1	38.9	120	9.2	1.76	9.99	68725	380.51	872.81	8.4	19.2
1950.0	36.7	35.7	120	9.2	1.33	10.01	68921	115.45	864.25	8.4	19.2
1951.0	38.3	32.7	120	9.2	1.28	10.04	69109	110.74	855.82	8.4	19.2
1952.0	45.6	31.1	120	9.2	1.21	10.06	69267	93.07	847.38	8.4	19.2
1953.0	46.8	32.6	120	9.2	1.22	10.08	69421	90.71	839.10	8.4	19.2
1954.0	42.9	32.6	120	9.2	1.24	10.11	69589	98.96	831.09	8.4	19.2
1955.0	22.8	35.8	120	9.2	1.48	10.15	69905	186.13	824.19	8.4	19.2
1956.0	46.2	33.5	120	9.2	1.23	10.17	70061	91.89	816.43	8.4	19.2
1957.0	40.9	30.7	120	9.2	1.24	10.20	70237	103.67	808.96	8.4	19.2
1958.0	38.7	34.4	120	9.2	1.29	10.22	70423	109.56	801.70	8.4	19.2
1959.0	17.1	33.1	110	9.2	1.51	10.28	70807	247.39	796.01	8.4	19.2
1960.0	28.1	30.9	97	9.2	1.29	10.32	71013	150.79	789.45	8.4	19.2
1961.0	32.7	31.6	120	9.2	1.32	10.35	71233	129.59	782.82	8.4	19.2
1962.0	44.4	28.5	120	9.2	1.18	10.37	71395	95.42	775.97	8.4	19.2
1963.0	37.5	29.3	120	9.2	1.25	10.40	71587	113.09	769.43	8.4	19.2
1964.0	37.9	29.6	120	9.2	1.25	10.42	71777	111.92	763.01	8.4	19.2
1965.0	53.7	31.9	120	9.2	1.16	10.44	71911	78.93	756.40	8.4	19.2
1966.0	28.1	33.7	120	9.2	1.39	10.48	72167	150.79	750.59	8.4	19.2
1967.0	48.6	31.2	120	9.2	1.19	10.50	72315	87.18	744.30	8.4	19.2
1968.0	40.4	31.7	120	9.2	1.25	10.52	72493	104.85	738.29	8.4	19.2
1969.0	50.0	31.8	120	9.2	1.18	10.54	72637	84.82	732.21	8.4	19.2
1970.0	42.4	31.9	120	9.2	1.24	10.57	72807	100.13	726.37	8.4	19.2
1971.0	27.1	32.3	120	9.2	1.38	10.60	73073	156.68	721.17	8.4	19.2
1972.0	52.9	31.1	120	9.2	1.16	10.62	73209	80.11	715.36	8.4	19.2
1973.0	46.8	30.6	120	9.2	1.19	10.64	73363	90.71	709.75	8.4	19.2
1974.0	51.4	31.7	120	9.2	1.17	10.66	73503	82.46	704.17	8.4	19.2
1975.0	48.0	31.3	120	9.2	1.19	10.68	73653	88.35	698.74	8.4	19.2
1976.0	49.3	31.4	120	9.2	1.19	10.70	73799	86.00	693.39	8.4	19.2
1977.0	43.9	31.4	120	9.2	1.22	10.73	73963	96.60	688.21	8.4	19.2
1978.0	35.3	31.7	120	9.2	1.29	10.75	74167	120.16	683.33	8.4	19.2
1979.0	20.9	32.7	120	9.2	1.47	10.80	74511	202.63	679.24	8.4	19.2
1980.0	3.9	35.5	120	9.2	2.05	11.06	76377	1099	683	8.4	19.2
1981.0	2.3	36.8	120	9.2	2.24	11.49	79487	1832	692	8.4	19.2
1982.0	3.1	38.6	120	9.2	2.18	11.82	81815	1371	698	8.4	19.3
1983.0	2.2	40.6	120	9.2	2.33	12.28	85157	1969	709	8.4	19.3
1984.0	1.7	32.7	120	9.2	2.26	12.86	89341	2464	723	8.4	19.3
1985.0	4.7	35.7	120	9.2	2.00	13.08	90889	911.82	724.39	8.4	19.3
1986.0	20.8	32.7	120	9.2	1.47	13.13	91235	203.80	720.21	8.4	19.3
1987.0	14.8	30.4	120	9.2	1.55	13.19	91721	286.27	716.75	8.4	19.3
1988.0	20.5	29.0	120	9.2	1.43	13.24	92073	207.34	712.72	8.4	19.3
1989.0	19.9	27.1	120	9.2	1.41	13.29	92435	213.23	708.79	8.4	19.3
1990.0	18.8	28.4	120	9.2	1.44	13.34	92817	225.01	705.03	8.4	19.3
1991.0	17.6	28.0	120	9.2	1.46	13.40	93225	240.32	701.44	8.4	19.3
1992.0	20.9	27.3	120	9.2	1.40	13.45	93569	202.63	697.61	8.4	19.3
1993.0	22.8	26.9	120	9.2	1.37	13.49	93885	186.13	693.72	8.4	19.3
1994.0	20.8	27.5	120	9.2	1.40	13.54	94231	203.80	690.02	8.4	19.3
1995.0	35.6	27.4	120	9.2	1.24	13.57	94433	118.98	685.74	8.4	19.3
1996.0	32.1	28.5	120	9.2	1.28	13.60	94657	131.94	681.62	8.4	19.3
1997.0	38.3	27.8	120	9.2	1.22	13.63	94845	110.74	677.40	8.4	19.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
1998.0	23.1	28.8	120	9.2	1.39	13.67	95157	183.78	673.78	8.4	19.3
1999.0	40.0	27.9	120	9.2	1.21	13.69	95337	106.03	669.65	8.4	19.3
2000.0	29.5	28.4	120	9.2	1.31	13.73	95581	143.72	665.85	8.4	19.3
2001.0	32.7	28.9	120	9.2	1.28	13.76	95801	129.59	662.00	8.4	19.3
2002.0	34.0	28.3	120	9.2	1.26	13.79	96013	124.87	658.18	8.4	19.3
2003.0	31.9	28.3	120	9.2	1.28	13.82	96239	133.12	654.46	8.4	19.3
2004.0	38.3	27.8	120	9.2	1.22	13.85	96427	110.74	650.65	8.4	19.3
2005.0	37.5	28.0	120	9.2	1.23	13.87	96619	113.09	646.90	8.4	19.3
2006.0	4.2	31.0	97	9.2	1.88	14.11	97996	1003	649	8.4	19.3
2007.0	3.4	39.2	90	9.2	2.06	14.40	99581	1240	653	8.4	19.3
2008.0	5.2	37.4	90	9.2	1.89	14.59	100618	812.86	654.51	8.4	19.3
2009.0	3.4	32.5	92	9.2	1.96	14.89	102259	1262	659	8.4	19.3
2010.0	13.3	33.4	86	9.2	1.52	14.97	102646	318.08	656.34	8.4	19.3
2011.0	14.5	32.0	86	9.2	1.47	15.03	103000	292.16	653.90	8.4	19.3
2012.0	4.4	31.0	120	9.2	1.93	15.26	104624	956.58	655.91	8.4	19.3
2013.0	19.7	26.1	120	9.2	1.40	15.31	104990	215.58	653.00	8.4	19.3
2014.0	7.5	28.4	120	9.2	1.73	15.45	105956	569.00	652.45	8.4	19.3
2015.0	10.9	27.4	120	9.2	1.59	15.54	106614	387.58	650.73	8.4	19.3
2016.0	28.3	28.5	120	9.2	1.32	15.57	106868	149.61	647.48	8.4	19.3
2017.0	15.6	34.3	120	9.2	1.58	15.64	107330	272.13	645.07	8.4	19.3
2018.0	3.7	33.1	120	9.2	2.02	15.90	109264	1139	648	8.4	19.3
2019.0	3.8	32.4	120	9.2	2.00	16.17	111168	1122	651	8.4	19.3
2020.0	3.7	34.8	90	9.2	1.96	16.44	112631	1149	654	8.4	19.3
2021.0	4.2	31.2	90	9.2	1.86	16.68	113903	998.99	656.53	8.4	19.3
2022.0	3.0	33.3	90	9.2	2.01	17.01	115727	1433	661	8.4	19.3
2023.0	3.4	39.6	90	9.2	2.07	17.31	117317	1249	665	8.4	19.3
2024.0	4.1	38.7	90	9.2	1.99	17.55	118640	1039	667	8.4	19.3
2025.0	48.0	30.1	120	9.2	1.18	17.57	118790	88.35	663.77	8.4	19.3
2026.0	50.1	35.0	120	9.2	1.22	17.59	118933	84.65	660.25	8.4	19.3
2027.0	11.5	32.7	120	9.2	1.66	17.68	119559	368.73	658.49	8.4	19.3
2028.0	6.0	34.4	120	9.2	1.89	17.85	120751	702.12	658.75	8.4	19.3
2029.0	21.4	29.9	120	9.2	1.42	17.89	121087	197.91	656.00	8.4	19.3
2030.0	19.6	28.7	120	9.2	1.44	17.94	121455	216.76	653.39	8.4	19.3
2031.0	20.5	29.5	120	9.2	1.43	17.99	121807	207.34	650.75	8.4	19.3
2032.0	24.2	30.9	120	9.2	1.40	18.03	122105	175.53	647.96	8.4	19.3
2033.0	23.2	30.4	120	9.2	1.41	18.08	122415	182.60	645.25	8.4	19.3
2034.0	24.0	30.5	120	9.2	1.40	18.12	122715	176.71	642.53	8.4	19.3
2035.0	28.6	31.2	120	9.2	1.35	18.15	122967	148.44	639.68	8.4	19.3
2036.0	33.6	34.7	120	9.2	1.34	18.18	123181	126.05	636.74	8.4	19.3
2037.0	39.6	32.5	120	9.2	1.27	18.21	123363	107.20	633.72	8.4	19.3
2038.0	29.3	33.2	120	9.2	1.37	18.24	123609	144.90	630.95	8.4	19.3
2039.0	33.3	32.5	120	9.2	1.32	18.27	123825	127.23	628.11	8.4	19.3
2040.0	38.7	32.7	120	9.2	1.28	18.30	124011	109.56	625.20	8.4	19.3
2041.0	44.4	31.6	120	9.2	1.22	18.32	124173	95.42	622.25	8.4	19.3
2042.0	32.1	31.5	120	9.2	1.32	18.35	124397	131.94	619.53	8.4	19.3
2043.0	27.5	31.3	120	9.2	1.37	18.39	124659	154.33	616.97	8.4	19.3
2044.0	40.4	31.5	120	9.2	1.25	18.41	124837	104.85	614.16	8.4	19.3
2045.0	41.9	30.8	120	9.2	1.23	18.44	125009	101.31	611.36	8.4	19.3
2046.0	27.3	32.4	120	9.2	1.38	18.47	125273	155.50	608.89	8.4	19.3
2047.0	28.8	32.7	120	9.2	1.37	18.51	125523	147.26	606.40	8.4	19.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2048.0	22.9	32.7	120	9.2	1.44	18.55	125837	184.95	604.14	8.4	19.3
2049.0	3.7	35.0	120	9.2	2.06	18.82	127777	1143	607	8.4	19.3
2050.0	2.2	35.3	120	9.2	2.23	19.28	131049	1927	614	8.4	19.4
2051.0	3.3	32.9	120	9.2	2.06	19.58	133257	1301	618	8.4	19.4
2052.0	3.5	33.2	120	9.2	2.05	19.87	135341	1228	621	8.4	19.4
2053.0	31.0	29.9	120	9.2	1.31	19.90	135573	136.65	618.32	8.4	19.4
2054.0	44.4	28.9	120	9.2	1.19	19.93	135735	95.42	615.60	8.4	19.4
2055.0	28.3	31.0	120	9.2	1.35	19.96	135989	149.61	613.19	8.4	19.4
2056.0	32.7	31.7	120	9.2	1.32	19.99	136209	129.59	610.70	8.4	19.4
2057.0	22.2	30.4	120	9.2	1.42	20.04	136533	190.85	608.56	8.4	19.4
2058.0	29.0	31.2	120	9.2	1.35	20.07	136781	146.08	606.20	8.4	19.4
2059.0	23.2	31.7	120	9.2	1.42	20.12	137091	182.60	604.05	8.4	19.4
2060.0	1.9	36.5	80	9.2	2.17	20.64	139603	2219	612	8.4	19.4
2061.0	1.2	42.1	80	9.2	2.43	21.48	143655	3580	627	8.4	19.4
2062.0	1.2	46.8	80	9.2	2.51	22.32	147694	3568	642	8.4	19.4

BIT NUMBER	6	IADC CODE	517	INTERVAL	2062.0- 2477.6
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.3	BIT. RUN	415.6
TOTAL HOURS	40.25	TOTAL TURNS	180878	CONDITION	T3 B3 G0.125

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2063.0	4.5	21.9	76	9.2	1.62	0.22	1014	941	38688	8.4	19.4
2064.0	8.2	29.1	78	9.2	1.58	0.34	1583	515	19602	8.4	19.4
2065.0	7.0	33.7	83	9.2	1.71	0.49	2292	604	13269	8.4	19.4
2066.0	10.8	45.6	75	9.2	1.69	0.58	2709	393	10050	8.4	19.4
2067.0	31.3	46.0	92	9.2	1.40	0.61	2886	135	8067	8.4	19.4
2068.0	30.0	44.9	91	9.2	1.40	0.64	3067	141	6746	8.4	19.4
2069.0	31.3	43.0	80	9.2	1.32	0.68	3219	135	5802	8.4	19.4
2070.0	35.6	42.3	82	9.2	1.27	0.70	3356	119	5092	8.4	19.4
2071.0	24.7	40.4	81	9.2	1.38	0.74	3553	172	4545	8.4	19.4
2072.0	5.7	45.1	69	9.2	1.89	0.92	4287	748	4165	8.4	19.4
2073.0	6.9	45.2	63	9.2	1.79	1.07	4837	613	3842	8.4	19.4
2074.0	17.1	42.6	59	9.2	1.42	1.12	5044	247	3543	8.4	19.4
2075.0	42.4	43.0	61	9.2	1.12	1.15	5131	100	3278	8.4	19.4
2076.0	20.7	45.2	62	9.2	1.40	1.20	5311	205	3058	8.4	19.4
2077.0	10.1	44.1	63	9.2	1.64	1.29	5684	421	2883	8.4	19.4
2078.0	40.4	42.2	62	9.2	1.14	1.32	5777	105	2709	8.4	19.4
2079.0	23.6	40.5	62	9.2	1.31	1.36	5936	180	2560	8.4	19.4
2080.0	46.2	46.8	62	9.2	1.13	1.38	6016	92	2423	8.4	19.4
2081.0	43.4	44.8	62	9.2	1.13	1.41	6102	98	2301	8.4	19.4
2082.0	11.4	44.6	66	9.2	1.62	1.49	6449	371	2204	8.4	19.4
2083.0	6.2	43.3	63	9.2	1.80	1.66	7060	688	2132	8.4	19.4
2084.0	5.0	38.6	61	9.2	1.80	1.86	7798	852	2074	8.4	19.4
2085.0	7.3	36.6	60	9.2	1.64	1.99	8293	581	2009	8.4	19.4
2086.0	7.8	37.0	60	9.2	1.62	2.12	8752	541	1948	8.4	19.4
2087.0	10.2	36.6	60	9.2	1.53	2.22	9105	416	1886	8.4	19.4
2088.0	24.7	34.4	60	9.2	1.21	2.26	9250	172	1820	8.4	19.4
2089.0	25.2	35.2	59	9.2	1.22	2.30	9391	168	1759	8.4	19.4
2090.0	12.9	35.9	60	9.2	1.44	2.38	9670	327	1708	8.4	19.4
2091.0	12.9	36.3	60	9.2	1.45	2.45	9948	329	1661	8.4	19.4
2092.0	17.5	35.7	60	9.2	1.34	2.51	10154	243	1613	8.4	19.4
2093.0	16.2	36.2	65	9.2	1.40	2.57	10393	262	1570	8.4	19.4
2094.0	21.3	35.1	61	9.2	1.28	2.62	10564	199	1527	8.4	19.4
2095.0	22.8	35.0	61	9.2	1.25	2.66	10725	186	1486	8.4	19.4
2096.0	29.3	34.6	61	9.2	1.17	2.70	10849	145	1447	8.4	19.4
2097.0	31.3	36.6	61	9.2	1.17	2.73	10966	135	1409	8.4	19.4
2098.0	55.4	33.2	61	9.2	0.95	2.75	11031	77	1372	8.4	19.4
2099.0	39.6	32.9	61	9.2	1.06	2.77	11124	107	1338	8.4	19.4
2100.0	46.8	33.0	61	9.2	1.00	2.80	11202	91	1305	8.4	19.4
2101.0	31.0	32.4	61	9.2	1.13	2.83	11321	137	1275	8.4	19.4
2102.0	19.1	36.6	56	9.2	1.30	2.88	11497	221	1249	8.4	19.4
2103.0	25.2	34.7	56	9.2	1.19	2.92	11629	168	1223	8.4	19.4
2104.0	21.1	36.3	56	9.2	1.27	2.97	11790	201	1198	8.4	19.4
2105.0	25.2	36.5	56	9.2	1.21	3.01	11924	168	1174	8.4	19.4

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2106.0	31.0	36.7	56	9.2	1.14	3.04	12032	137	1151	8.4	19.4
2107.0	29.5	36.6	56	9.2	1.16	3.07	12145	144	1128	8.4	19.4
2108.0	32.1	36.1	56	9.2	1.12	3.10	12249	132	1107	8.4	19.4
2109.0	26.5	35.7	56	9.2	1.18	3.14	12376	160	1087	8.4	19.4
2110.0	27.9	36.3	56	9.2	1.17	3.18	12497	152	1067	8.4	19.4
2111.0	24.3	35.8	56	9.2	1.21	3.22	12635	174	1049	8.4	19.4
2112.0	33.0	36.8	46	9.2	1.06	3.25	12719	128	1031	8.4	19.4
2113.0	32.1	35.5	57	9.2	1.13	3.28	12826	132	1013	8.4	19.4
2114.0	26.1	36.8	58	9.2	1.21	3.32	12959	162.57	996.53	8.4	19.4
2115.0	31.3	35.8	58	9.2	1.14	3.35	13070	135.48	980.28	8.4	19.4
2116.0	29.8	35.2	58	9.2	1.15	3.38	13187	142.54	964.77	8.4	19.4
2117.0	38.3	35.1	58	9.2	1.07	3.41	13277	110.74	949.24	8.4	19.4
2118.0	22.8	36.0	58	9.2	1.25	3.45	13430	186.13	935.62	8.4	19.4
2119.0	23.1	36.7	58	9.2	1.25	3.50	13581	183.78	922.43	8.4	19.5
2120.0	20.6	38.1	58	9.2	1.30	3.55	13750	206.16	910.08	8.4	19.5
2121.0	15.1	37.1	57	9.2	1.39	3.61	13977	280.38	899.40	8.4	19.5
2122.0	29.3	35.3	61	9.2	1.18	3.65	14101	144.90	886.83	8.4	19.5
2123.0	36.7	33.7	61	9.2	1.09	3.67	14201	115.45	874.18	8.4	19.5
2124.0	40.9	33.9	61	9.2	1.05	3.70	14290	103.67	861.75	8.4	19.5
2125.0	34.6	34.2	61	9.2	1.11	3.73	14395	122.52	850.02	8.4	19.5
2126.0	40.9	34.4	61	9.2	1.06	3.75	14484	103.67	838.36	8.4	19.5
2127.0	47.4	33.5	61	9.2	1.00	3.77	14561	89.53	826.84	8.4	19.5
2128.0	47.4	33.4	61	9.2	1.00	3.79	14639	89.53	815.67	8.4	19.5
2129.0	35.6	32.9	61	9.2	1.09	3.82	14742	118.98	805.27	8.4	19.5
2130.0	35.3	34.3	62	9.2	1.11	3.85	14848	120.16	795.19	8.4	19.5
2131.0	28.1	36.2	55	9.2	1.17	3.89	14966	150.79	785.85	8.4	19.5
2132.0	8.7	36.2	57	9.2	1.56	4.00	15363	490.07	781.63	8.4	19.5
2133.0	3.9	34.9	56	9.2	1.79	4.26	16225	1093	786	8.4	19.5
2134.0	8.4	35.7	58	9.2	1.57	4.38	16644	507.74	782.15	8.4	19.5
2135.0	20.7	35.2	58	9.2	1.27	4.43	16811	204.98	774.25	8.4	19.5
2136.0	23.5	34.5	57	9.2	1.22	4.47	16957	180.24	766.22	8.4	19.5
2137.0	21.3	34.2	57	9.2	1.25	4.52	17119	199.09	758.66	8.4	19.5
2138.0	27.1	33.8	57	9.2	1.16	4.55	17245	156.68	750.74	8.4	19.5
2139.0	32.4	34.0	57	9.2	1.11	4.58	17351	130.76	742.69	8.4	19.5
2140.0	22.8	32.6	53	9.2	1.18	4.63	17489	186.13	735.55	8.4	19.5
2141.0	26.9	34.8	60	9.2	1.19	4.66	17623	157.86	728.24	8.4	19.5
2142.0	5.0	34.6	64	9.2	1.75	4.86	18383	842.31	729.66	8.4	19.5
2143.0	25.5	27.7	90	9.2	1.25	4.90	18593	166.11	722.71	8.4	19.5
2144.0	41.9	26.7	89	9.2	1.09	4.93	18721	101.31	715.13	8.4	19.5
2145.0	40.9	27.2	89	9.2	1.11	4.95	18852	103.67	707.76	8.4	19.5
2146.0	52.9	26.5	89	9.2	1.02	4.97	18954	80.11	700.29	8.4	19.5
2147.0	8.8	31.0	76	9.2	1.57	5.08	19466	479.47	697.69	8.4	19.5
2148.0	6.6	32.3	86	9.2	1.72	5.23	20249	640.86	697.03	8.4	19.5
2149.0	11.3	32.0	88	9.2	1.56	5.32	20718	374.62	693.32	8.4	19.5
2150.0	14.7	29.6	79	9.2	1.41	5.39	21040	288.62	688.73	8.4	19.5
2151.0	19.0	29.3	82	9.2	1.34	5.44	21299	222.65	683.49	8.4	19.5
2152.0	15.9	30.1	82	9.2	1.40	5.51	21606	266.24	678.85	8.4	19.5
2153.0	17.1	30.4	82	9.2	1.38	5.56	21892	247.39	674.11	8.4	19.5
2154.0	15.1	30.7	82	9.2	1.43	5.63	22217	281.56	669.84	8.4	19.5
2155.0	17.6	30.4	82	9.2	1.37	5.69	22496	241.50	665.24	8.4	19.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2156.0	19.9	30.7	82	9.2	1.34	5.74	22742	213.23	660.43	8.4	19.5
2157.0	15.6	30.5	81	9.2	1.41	5.80	23055	272.13	656.34	8.4	19.5
2158.0	39.6	28.1	82	9.2	1.10	5.83	23180	107.20	650.62	8.4	19.5
2159.0	35.6	27.6	80	9.2	1.12	5.86	23314	118.98	645.14	8.4	19.5
2160.0	32.1	26.6	81	9.2	1.14	5.89	23466	131.94	639.90	8.4	19.5
2161.0	34.6	25.5	82	9.2	1.11	5.92	23609	122.52	634.68	8.4	19.5
2162.0	32.4	26.2	82	9.2	1.14	5.95	23761	130.76	629.64	8.4	19.5
2163.0	42.9	27.6	82	9.2	1.07	5.97	23876	98.96	624.39	8.4	19.5
2164.0	40.4	27.2	82	9.2	1.08	5.99	23997	104.85	619.29	8.4	19.5
2165.0	16.7	28.4	81	9.2	1.36	6.05	24291	254.46	615.75	8.4	19.5
2166.0	26.9	28.4	83	9.2	1.23	6.09	24477	157.86	611.35	8.4	19.5
2167.0	10.3	29.4	83	9.2	1.53	6.19	24963	412.32	609.45	8.4	19.5
2168.0	10.0	30.0	77	9.2	1.52	6.29	25424	424.10	607.70	8.4	19.5
2169.0	28.6	29.1	83	9.2	1.21	6.32	25599	148.44	603.41	8.4	19.5
2170.0	32.7	29.5	84	9.2	1.18	6.35	25753	129.59	599.02	8.4	19.5
2171.0	33.3	30.1	84	9.2	1.18	6.38	25904	127.23	594.70	8.4	19.5
2172.0	36.4	35.1	84	9.2	1.21	6.41	26042	116.63	590.35	8.4	19.5
2173.0	37.9	38.5	83	9.2	1.22	6.44	26173	111.92	586.04	8.4	19.5
2174.0	32.1	38.4	83	9.2	1.28	6.47	26329	131.94	581.98	8.4	19.5
2175.0	23.2	39.5	84	9.2	1.40	6.51	26545	182.60	578.45	8.4	19.5
2176.0	22.6	39.5	84	9.2	1.41	6.56	26767	187.31	575.02	8.4	19.5
2177.0	30.5	37.9	81	9.2	1.28	6.59	26927	139.01	571.23	8.4	19.5
2178.0	37.1	38.9	83	9.2	1.23	6.62	27061	114.27	567.29	8.4	19.5
2179.0	36.7	39.8	85	9.2	1.25	6.64	27199	115.45	563.43	8.4	19.5
2180.0	41.4	39.0	85	9.2	1.21	6.67	27322	102.49	559.52	8.4	19.5
2181.0	29.5	39.0	85	9.2	1.32	6.70	27495	143.72	556.03	8.4	19.5
2182.0	33.3	40.0	85	9.2	1.29	6.73	27648	127.23	552.45	8.4	19.5
2183.0	10.3	40.5	87	9.2	1.70	6.83	28151	411.14	551.28	8.4	19.5
2184.0	20.8	38.6	86	9.2	1.43	6.88	28398	203.80	548.44	8.4	19.5
2185.0	23.2	39.0	85	9.2	1.40	6.92	28619	182.60	545.46	8.4	19.5
2186.0	27.5	38.3	85	9.2	1.34	6.96	28804	154.33	542.31	8.4	19.5
2187.0	23.4	38.1	83	9.2	1.38	7.00	29016	181.42	539.42	8.4	19.5
2188.0	25.9	39.1	83	9.2	1.36	7.04	29209	163.75	536.44	8.4	19.5
2189.0	26.9	38.3	83	9.2	1.34	7.07	29395	157.86	533.46	8.4	19.5
2190.0	29.8	37.6	83	9.2	1.30	7.11	29562	142.54	530.40	8.4	19.5
2191.0	46.2	36.7	84	9.2	1.15	7.13	29672	91.89	527.01	8.4	19.6
2192.0	38.7	36.7	85	9.2	1.21	7.16	29803	109.56	523.79	8.4	19.6
2193.0	7.1	39.8	84	9.2	1.80	7.30	30518	599.63	524.37	8.4	19.6
2194.0	8.3	38.9	82	9.2	1.73	7.42	31116	512.45	524.28	8.4	19.6
2195.0	19.4	37.2	83	9.2	1.43	7.47	31372	219.12	521.99	8.4	19.6
2196.0	6.3	38.8	85	9.2	1.83	7.63	32180	673.85	523.12	8.4	19.6
2197.0	5.9	40.1	84	9.2	1.87	7.80	33037	716.26	524.55	8.4	19.6
2198.0	5.5	38.7	84	9.2	1.87	7.98	33958	771.63	526.37	8.4	19.6
2199.0	5.0	39.3	84	9.2	1.91	8.18	34971	851.73	528.74	8.4	19.6
2200.0	9.9	38.7	84	9.2	1.67	8.28	35476	426.46	528.00	8.4	19.6
2201.0	4.7	36.7	84	9.2	1.89	8.49	36539	894.14	530.64	8.4	19.6
2202.0	5.4	38.8	83	9.2	1.87	8.67	37451	778.69	532.41	8.4	19.6
2203.0	4.6	40.1	85	9.2	1.95	8.89	38554	922.42	535.17	8.4	19.6
2204.0	6.0	39.2	82	9.2	1.84	9.06	39375	704.48	536.37	8.4	19.6
2205.0	34.3	36.6	82	9.2	1.23	9.09	39518	123.70	533.48	8.4	19.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2206.0	18.7	38.4	86	9.2	1.47	9.14	39794	227.36	531.36	8.4	19.6
2207.0	7.8	38.9	86	9.2	1.77	9.27	40457	541.91	531.43	8.4	19.6
2208.0	5.8	38.7	85	9.2	1.86	9.44	41337	733.93	532.81	8.4	19.6
2209.0	4.1	35.7	76	9.2	1.89	9.69	42460	1044	536	8.4	19.6
2210.0	5.3	37.0	84	9.2	1.86	9.88	43422	804.61	538.10	8.4	19.6
2211.0	4.9	38.9	85	9.2	1.92	10.08	44467	874.12	540.36	8.4	19.6
2212.0	5.0	39.1	85	9.2	1.91	10.29	45487	852.91	542.44	8.4	19.6
2213.0	7.0	39.0	85	9.2	1.79	10.43	46208	601.99	542.84	8.4	19.6
2214.0	8.2	38.4	85	9.2	1.74	10.55	46832	519.52	542.68	8.4	19.6
2215.0	33.6	37.3	79	9.2	1.23	10.58	46972	126.05	539.96	8.4	19.6
2216.0	66.7	36.6	83	9.2	1.02	10.59	47047	63.62	536.87	8.4	19.6
2217.0	11.3	38.4	85	9.2	1.63	10.68	47499	376.98	535.84	8.4	19.6
2218.0	6.7	38.2	84	9.2	1.80	10.83	48254	636.15	536.48	8.4	19.6
2219.0	7.5	39.5	81	9.2	1.77	10.97	48903	564.29	536.66	8.4	19.6
2220.0	11.8	39.2	79	9.2	1.61	11.05	49307	360.48	535.54	8.4	19.6
2221.0	6.3	39.9	84	9.2	1.84	11.21	50105	670.31	536.39	8.4	19.6
2222.0	8.6	39.3	83	9.2	1.73	11.33	50684	494.78	536.13	8.4	19.6
2223.0	5.3	40.1	83	9.2	1.90	11.52	51635	806.97	537.81	8.4	19.6
2224.0	5.0	37.9	84	9.2	1.89	11.72	52644	844.67	539.70	8.4	19.6
2225.0	5.2	37.2	80	9.2	1.85	11.91	53568	812.86	541.38	8.4	19.6
2226.0	6.8	37.7	74	9.2	1.74	12.05	54216	622.01	541.87	8.4	19.6
2227.0	10.3	38.4	81	9.2	1.65	12.15	54689	412.32	541.09	8.4	19.6
2228.0	9.2	38.1	83	9.2	1.69	12.26	55228	460.62	540.60	8.4	19.6
2229.0	12.3	38.7	81	9.2	1.59	12.34	55625	345.17	539.43	8.4	19.6
2230.0	15.5	38.4	83	9.2	1.52	12.41	55946	274.49	537.86	8.4	19.6
2231.0	15.4	38.4	83	9.2	1.52	12.47	56269	275.67	536.30	8.4	19.6
2232.0	17.1	34.9	83	9.2	1.44	12.53	56559	247.39	534.60	8.4	19.6
2233.0	15.0	39.1	81	9.2	1.53	12.60	56885	282.73	533.13	8.4	19.6
2234.0	20.7	37.0	79	9.2	1.39	12.64	57114	204.98	531.22	8.4	19.6
2235.0	18.8	36.9	82	9.2	1.43	12.70	57376	225.01	529.45	8.4	19.6
2236.0	15.5	38.7	82	9.2	1.52	12.76	57695	274.49	527.99	8.4	19.6
2237.0	16.4	37.0	82	9.2	1.48	12.82	57996	257.99	526.45	8.4	19.6
2238.0	21.8	36.3	82	9.2	1.38	12.87	58221	194.38	524.56	8.4	19.6
2239.0	24.2	36.2	82	9.2	1.34	12.91	58425	175.53	522.59	8.4	19.6
2240.0	10.5	38.8	82	9.2	1.65	13.01	58895	404.07	521.92	8.4	19.6
2241.0	37.1	35.4	82	9.2	1.20	13.03	59027	114.27	519.64	8.4	19.6
2242.0	27.7	36.1	82	9.2	1.30	13.07	59205	153.15	517.61	8.4	19.6
2243.0	25.0	36.3	79	9.2	1.32	13.11	59395	169.64	515.68	8.4	19.6
2244.0	21.6	36.9	82	9.2	1.39	13.15	59623	196.74	513.93	8.4	19.6
2245.0	23.8	36.2	83	9.2	1.35	13.20	59833	177.89	512.10	8.4	19.6
2246.0	24.2	36.8	83	9.2	1.36	13.24	60040	175.53	510.27	8.4	19.6
2247.0	21.3	37.1	83	9.2	1.40	13.28	60274	199.09	508.58	8.4	19.6
2248.0	26.5	37.0	83	9.2	1.33	13.32	60463	160.22	506.71	8.4	19.6
2249.0	27.3	36.8	83	9.2	1.32	13.36	60646	155.50	504.83	8.4	19.6
2250.0	18.4	37.9	83	9.2	1.46	13.41	60919	230.90	503.38	8.4	19.6
2251.0	28.8	37.5	83	9.2	1.31	13.45	61092	147.26	501.49	8.4	19.6
2252.0	27.1	38.2	83	9.2	1.33	13.49	61276	156.68	499.68	8.4	19.6
2253.0	34.0	37.0	84	9.2	1.25	13.51	61424	124.87	497.72	8.4	19.6
2254.0	28.3	37.3	85	9.2	1.32	13.55	61604	149.61	495.90	8.4	19.6
2255.0	21.3	37.2	86	9.2	1.41	13.60	61846	199.09	494.36	8.4	19.6

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2256.0	26.5	37.5	85	9.2	1.34	13.63	62039	160.22	492.64	8.4	19.6
2257.0	31.6	36.2	85	9.2	1.27	13.67	62201	134.30	490.80	8.4	19.6
2258.0	28.1	36.5	85	9.2	1.31	13.70	62382	150.79	489.07	8.4	19.6
2259.0	26.9	36.5	85	9.2	1.33	13.74	62573	157.86	487.39	8.4	19.6
2260.0	8.8	38.3	87	9.2	1.72	13.85	63159	479.47	487.35	8.4	19.6
2261.0	10.3	38.3	85	9.2	1.66	13.95	63658	413.50	486.98	8.4	19.6
2262.0	8.4	39.0	81	9.2	1.72	14.07	64240	506.56	487.08	8.4	19.6
2263.0	14.6	38.4	79	9.2	1.52	14.14	64564	289.80	486.09	8.4	19.6
2264.0	10.9	38.3	83	9.2	1.63	14.23	65020	389.94	485.62	8.4	19.7
2265.0	17.9	38.0	84	9.2	1.47	14.29	65301	236.79	484.39	8.4	19.7
2266.0	6.1	39.8	81	9.2	1.84	14.45	66097	697.41	485.44	8.4	19.7
2267.0	5.8	41.6	87	9.2	1.91	14.62	67001	737.46	486.67	8.4	19.7
2268.0	7.7	39.9	87	9.2	1.79	14.75	67683	553.69	486.99	8.4	19.7
2269.0	6.8	40.9	87	9.2	1.84	14.90	68453	622.01	487.64	8.4	19.7
2270.0	7.4	40.9	87	9.2	1.81	15.04	69158	570.18	488.04	8.4	19.7
2271.0	6.1	40.5	87	9.2	1.87	15.20	70013	697.41	489.04	8.4	19.7
2272.0	7.0	40.6	80	9.2	1.80	15.34	70692	601.99	489.58	8.4	19.7
2273.0	12.8	39.8	84	9.2	1.60	15.42	71086	331.03	488.83	8.4	19.7
2274.0	13.5	40.4	80	9.2	1.58	15.49	71441	313.36	488.00	8.4	19.7
2275.0	12.2	35.0	64	9.2	1.47	15.58	71757	347.53	487.34	8.4	19.7
2276.0	10.4	34.1	63	9.2	1.51	15.67	72121	407.61	486.97	8.4	19.7
2277.0	13.8	35.5	62	9.2	1.43	15.74	72393	307.47	486.13	8.4	19.7
2278.0	13.8	37.2	63	9.2	1.45	15.82	72665	307.47	485.31	8.4	19.7
2279.0	18.2	35.7	62	9.2	1.34	15.87	72869	233.26	484.14	8.4	19.7
2280.0	6.3	37.8	76	9.2	1.78	16.03	73599	676.20	485.03	8.4	19.7
2281.0	12.5	35.3	69	9.2	1.49	16.11	73930	338.10	484.35	8.4	19.7
2282.0	11.0	35.8	66	9.2	1.53	16.20	74291	385.22	483.90	8.4	19.7
2283.0	14.6	35.9	66	9.2	1.43	16.27	74562	290.98	483.03	8.4	19.7
2284.0	15.5	35.6	65	9.2	1.41	16.33	74815	273.31	482.09	8.4	19.7
2285.0	16.7	36.0	65	9.2	1.39	16.39	75049	253.28	481.06	8.4	19.7
2286.0	15.9	35.2	65	9.2	1.39	16.46	75296	266.24	480.10	8.4	19.7
2287.0	6.8	36.2	62	9.2	1.67	16.61	75843	627.90	480.76	8.4	19.7
2288.0	7.3	36.3	56	9.2	1.61	16.74	76303	581.96	481.21	8.4	19.7
2289.0	6.7	36.4	71	9.2	1.72	16.89	76939	636.15	481.89	8.4	19.7
2290.0	5.6	36.9	91	9.2	1.86	17.07	77909	755.13	483.09	8.4	19.7
2291.0	10.1	32.0	88	9.2	1.59	17.17	78430	418.21	482.80	8.4	19.7
2292.0	11.5	32.0	88	9.2	1.55	17.26	78889	368.78	482.31	8.4	19.7
2293.0	7.9	32.2	88	9.2	1.67	17.38	79561	538.37	482.55	8.4	19.7
2294.0	12.3	31.4	65	9.2	1.43	17.46	79879	345.17	481.96	8.4	19.7
2295.0	11.7	31.3	65	9.2	1.44	17.55	80215	364.02	481.45	8.4	19.7
2296.0	11.4	31.4	65	9.2	1.45	17.64	80557	372.27	480.99	8.4	19.7
2297.0	10.3	31.4	66	9.2	1.48	17.73	80938	409.96	480.68	8.4	19.7
2298.0	18.0	30.1	65	9.2	1.29	17.79	81154	235.61	479.65	8.4	19.7
2299.0	4.9	32.0	75	9.2	1.77	17.99	82072	863.51	481.27	8.4	19.7
2300.0	6.2	33.3	91	9.2	1.78	18.16	82953	683.27	482.11	8.4	19.7
2301.0	5.8	30.9	84	9.2	1.73	18.33	83813	725.68	483.13	8.4	19.7
2302.0	8.6	31.1	70	9.2	1.56	18.44	84301	491.25	483.17	8.4	19.7
2303.0	13.4	30.0	70	9.2	1.40	18.52	84613	315.72	482.47	8.4	19.7
2304.0	16.2	30.7	70	9.2	1.35	18.58	84870	261.53	481.56	8.4	19.7
2305.0	18.7	30.2	70	9.2	1.30	18.63	85094	227.36	480.51	8.4	19.7

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2306.0	16.1	30.1	70	9.2	1.35	18.69	85354	263.88	479.63	8.4	19.7
2307.0	13.9	30.1	69	9.2	1.39	18.77	85653	305.12	478.91	8.4	19.7
2308.0	6.3	31.9	80	9.2	1.71	18.93	86422	675.03	479.71	8.4	19.7
2309.0	15.9	31.0	89	9.2	1.44	18.99	86757	267.42	478.85	8.4	19.7
2310.0	6.1	34.2	93	9.2	1.81	19.15	87682	699.77	479.74	8.4	19.7
2311.0	24.8	40.8	100	9.2	1.45	19.19	87924	170.82	478.50	8.4	19.7
2312.0	22.9	41.0	101	9.2	1.48	19.24	88188	185.20	477.33	8.4	19.7
2313.0	23.0	39.7	102	9.2	1.47	19.28	88454	184.37	476.16	8.4	19.7
2314.0	21.2	41.2	102	9.2	1.52	19.33	88745	200.27	475.07	8.4	19.7
2315.0	18.8	41.4	103	9.2	1.56	19.38	89073	226.19	474.08	8.4	19.7
2316.0	23.5	40.7	100	9.2	1.47	19.42	89329	180.24	472.92	8.4	19.7
2317.0	4.9	41.0	85	9.2	1.95	19.63	90374	872.94	474.49	8.4	19.7
2318.0	9.0	40.8	84	9.2	1.74	19.74	90936	473.58	474.49	8.4	19.7
2319.0	8.2	40.2	68	9.2	1.69	19.86	91433	515.99	474.65	8.4	19.7
2320.0	4.7	41.7	64	9.2	1.87	20.07	92243	896.50	476.29	8.4	19.7
2321.0	13.4	43.3	63	9.2	1.53	20.15	92523	315.72	475.67	8.4	19.7
2322.0	14.3	40.6	62	9.2	1.48	20.22	92784	295.69	474.97	8.4	19.7
2323.0	10.7	40.8	62	9.2	1.58	20.31	93134	395.83	474.67	8.4	19.7
2324.0	13.8	39.1	61	9.2	1.46	20.38	93400	306.29	474.03	8.4	19.7
2325.0	12.8	39.2	63	9.2	1.50	20.46	93694	332.21	473.49	8.4	19.7
2326.0	14.1	40.1	63	9.2	1.48	20.53	93960	300.40	472.83	8.4	19.7
2327.0	14.9	39.6	62	9.2	1.45	20.60	94212	285.09	472.13	8.4	19.7
2328.0	11.8	40.2	67	9.2	1.56	20.69	94555	359.31	471.70	8.4	19.7
2329.0	17.4	39.1	85	9.2	1.50	20.74	94848	243.86	470.85	8.4	19.7
2330.0	12.2	39.1	86	9.2	1.62	20.82	95269	346.35	470.38	8.4	19.7
2331.0	5.7	40.0	87	9.2	1.89	21.00	96182	741.00	471.39	8.4	19.7
2332.0	7.6	40.6	95	9.2	1.83	21.13	96931	558.40	471.71	8.4	19.7
2333.0	4.7	41.4	99	9.2	2.02	21.34	98191	896.50	473.28	8.4	19.7
2334.0	4.6	41.6	91	9.2	2.00	21.56	99384	925.95	474.94	8.4	19.7
2335.0	5.5	41.1	65	9.2	1.82	21.74	100091	770.45	476.03	8.4	19.7
2336.0	3.9	40.1	60	9.2	1.89	22.00	101011	1090	478	8.4	19.7
2337.0	4.1	39.8	57	9.2	1.86	22.25	101862	1046	480	8.4	19.7
2338.0	12.8	37.2	65	9.2	1.49	22.32	102166	332.21	479.79	8.4	19.7
2339.0	20.8	38.4	80	9.2	1.41	22.37	102397	203.80	478.80	8.4	19.8
2340.0	16.6	40.8	80	9.2	1.51	22.43	102688	255.64	477.99	8.4	19.8
2341.0	18.6	39.5	78	9.2	1.45	22.49	102941	228.54	477.10	8.4	19.8
2342.0	21.3	40.3	90	9.2	1.46	22.53	103194	199.09	476.11	8.4	19.8
2343.0	25.0	38.6	88	9.2	1.38	22.57	103406	169.64	475.02	8.4	19.8
2344.0	29.5	37.4	83	9.2	1.30	22.61	103574	143.72	473.84	8.4	19.8
2345.0	6.7	40.4	82	9.2	1.82	22.76	104312	636.15	474.42	8.4	19.8
2346.0	6.5	40.7	68	9.2	1.77	22.91	104939	656.18	475.06	8.4	19.8
2347.0	17.1	40.7	66	9.2	1.44	22.97	105172	248.57	474.26	8.4	19.8
2348.0	8.0	37.8	72	9.2	1.68	23.10	105713	531.30	474.46	8.4	19.8
2349.0	15.1	36.4	83	9.2	1.50	23.16	106045	281.56	473.79	8.4	19.8
2350.0	10.0	37.8	84	9.2	1.66	23.26	106549	424.10	473.62	8.4	19.8
2351.0	9.3	36.5	83	9.2	1.66	23.37	107081	455.91	473.55	8.4	19.8
2352.0	4.3	39.2	86	9.2	1.97	23.60	108274	978.96	475.30	8.4	19.8
2353.0	4.8	45.0	89	9.2	2.03	23.81	109391	888.25	476.72	8.4	19.8
2354.0	6.7	43.8	83	9.2	1.88	23.96	110143	637.33	477.27	8.4	19.8
2355.0	8.7	43.6	83	9.2	1.78	24.07	110710	485.36	477.29	8.4	19.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2356.0	7.1	42.7	83	9.2	1.84	24.22	111415	600.81	477.71	8.4	19.8
2357.0	5.6	42.0	69	9.2	1.85	24.40	112155	759.85	478.67	8.4	19.8
2358.0	12.3	42.8	73	9.2	1.61	24.48	112510	343.99	478.22	8.4	19.8
2359.0	16.5	39.7	82	9.2	1.51	24.54	112808	256.82	477.47	8.4	19.8
2360.0	16.9	39.5	90	9.2	1.53	24.60	113129	250.93	476.71	8.4	19.8
2361.0	11.7	39.3	71	9.2	1.57	24.68	113495	364.02	476.33	8.4	19.8
2362.0	12.1	38.9	71	9.2	1.56	24.76	113848	349.88	475.91	8.4	19.8
2363.0	15.5	38.7	72	9.2	1.48	24.83	114128	274.49	475.24	8.4	19.8
2364.0	15.7	38.6	72	9.2	1.47	24.89	114403	269.77	474.56	8.4	19.8
2365.0	16.2	37.9	82	9.2	1.49	24.95	114706	261.53	473.86	8.4	19.8
2366.0	21.4	38.6	88	9.2	1.43	25.00	114951	197.91	472.95	8.4	19.8
2367.0	11.4	39.0	68	9.2	1.56	25.09	115309	372.27	472.62	8.4	19.8
2368.0	10.1	38.6	75	9.2	1.63	25.19	115754	418.21	472.44	8.4	19.8
2369.0	5.5	38.8	77	9.2	1.84	25.37	116592	773.98	473.43	8.4	19.8
2370.0	5.1	39.4	68	9.2	1.84	25.57	117392	830.53	474.58	8.4	19.8
2371.0	20.7	37.7	85	9.2	1.42	25.61	117638	204.98	473.71	8.4	19.8
2372.0	9.1	40.3	85	9.2	1.73	25.72	118193	464.15	473.68	8.4	19.8
2373.0	4.2	39.2	83	9.2	1.97	25.96	119390	1015	475	8.4	19.8
2374.0	4.2	39.5	84	9.2	1.97	26.20	120588	1008	477	8.4	19.8
2375.0	6.9	39.8	83	9.2	1.81	26.35	121314	614.95	477.57	8.4	19.8
2376.0	4.0	38.4	84	9.2	1.97	26.59	122563	1047	479	8.4	19.8
2377.0	5.0	39.9	73	9.2	1.87	26.79	123440	844.67	480.55	8.4	19.8
2378.0	10.9	41.2	71	9.2	1.62	26.88	123831	389.94	480.26	8.4	19.8
2379.0	8.2	39.9	70	9.2	1.69	27.01	124345	515.99	480.37	8.4	19.8
2380.0	9.9	39.4	70	9.2	1.63	27.11	124771	429.99	480.21	8.4	19.8
2381.0	22.0	35.9	72	9.2	1.33	27.15	124968	193.20	479.31	8.4	19.8
2382.0	17.4	36.4	72	9.2	1.41	27.21	125216	243.86	478.58	8.4	19.8
2383.0	15.5	38.3	72	9.2	1.47	27.27	125496	274.49	477.94	8.4	19.8
2384.0	16.9	41.3	72	9.2	1.48	27.33	125751	250.93	477.24	8.4	19.8
2385.0	18.3	42.3	72	9.2	1.46	27.39	125988	232.08	476.48	8.4	19.8
2386.0	17.1	41.6	71	9.2	1.47	27.45	126239	248.57	475.77	8.4	19.8
2387.0	10.7	42.4	72	9.2	1.64	27.54	126643	395.83	475.53	8.4	19.8
2388.0	6.3	43.8	72	9.2	1.85	27.70	127334	675.03	476.14	8.4	19.8
2389.0	10.9	44.0	74	9.2	1.66	27.79	127739	388.76	475.87	8.4	19.8
2390.0	15.7	43.2	74	9.2	1.53	27.86	128020	269.77	475.25	8.4	19.8
2391.0	12.4	44.2	73	9.2	1.62	27.94	128375	341.64	474.84	8.4	19.8
2392.0	13.4	43.8	72	9.2	1.59	28.01	128700	316.90	474.36	8.4	19.8
2393.0	11.0	44.0	73	9.2	1.66	28.10	129097	384.05	474.09	8.4	19.8
2394.0	13.1	44.1	73	9.2	1.60	28.18	129430	323.97	473.64	8.4	19.8
2395.0	13.8	46.5	64	9.2	1.56	28.25	129707	306.29	473.13	8.4	19.8
2396.0	17.0	47.5	64	9.2	1.50	28.31	129934	249.75	472.46	8.4	19.8
2397.0	17.7	44.2	64	9.2	1.45	28.36	130151	239.15	471.77	8.4	19.8
2398.0	6.5	44.8	65	9.2	1.81	28.52	130747	647.93	472.29	8.4	19.8
2399.0	9.9	43.5	66	9.2	1.65	28.62	131147	428.81	472.16	8.4	19.8
2400.0	11.4	43.4	66	9.2	1.60	28.71	131492	371.09	471.86	8.4	19.8
2401.0	14.5	42.4	65	9.2	1.50	28.78	131758	292.16	471.33	8.4	19.8
2402.0	13.8	42.9	65	9.2	1.53	28.85	132040	306.29	470.85	8.4	19.8
2403.0	12.8	43.4	65	9.2	1.56	28.93	132346	332.21	470.44	8.4	19.8
2404.0	15.3	41.6	65	9.2	1.48	28.99	132600	276.84	469.88	8.4	19.8
2405.0	20.8	41.3	62	9.2	1.35	29.04	132778	203.80	469.10	8.4	19.8

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2406.0	15.4	41.7	64	9.2	1.47	29.10	133026	275.67	468.54	8.4	19.8
2407.0	15.6	42.8	65	9.2	1.48	29.17	133275	272.13	467.97	8.4	19.8
2408.0	16.2	43.4	64	9.2	1.47	29.23	133513	261.53	467.37	8.4	19.8
2409.0	18.9	42.6	64	9.2	1.41	29.28	133716	223.83	466.67	8.4	19.8
2410.0	16.7	42.9	64	9.2	1.46	29.34	133947	254.46	466.06	8.4	19.8
2411.0	15.3	42.7	63	9.2	1.48	29.41	134197	278.02	465.52	8.4	19.8
2412.0	12.9	43.0	64	9.2	1.55	29.49	134496	329.86	465.13	8.4	19.8
2413.0	10.1	42.9	64	9.2	1.63	29.58	134878	419.39	465.00	8.4	19.8
2414.0	10.3	41.8	65	9.2	1.62	29.68	135258	411.14	464.85	8.4	19.8
2415.0	2.4	42.6	66	9.2	2.13	30.10	136938	1786	469	8.4	19.8
2416.0	4.0	42.5	66	9.2	1.95	30.35	137927	1064	470	8.4	19.9
2417.0	9.1	41.8	63	9.2	1.65	30.46	138345	466.51	470.26	8.4	19.9
2418.0	15.0	40.8	62	9.2	1.46	30.53	138594	282.73	469.74	8.4	19.9
2419.0	13.1	41.5	72	9.2	1.56	30.61	138921	322.79	469.33	8.4	19.9
2420.0	12.1	41.0	66	9.2	1.56	30.69	139247	349.88	468.99	8.4	19.9
2421.0	15.8	40.9	63	9.2	1.45	30.75	139486	268.60	468.43	8.4	19.9
2422.0	7.7	42.2	64	9.2	1.71	30.88	139982	547.80	468.65	8.4	19.9
2423.0	2.8	42.1	72	9.2	2.10	31.24	141543	1533	472	8.4	19.9
2424.0	3.4	40.7	85	9.2	2.06	31.54	143038	1248	474	8.4	19.9
2425.0	6.4	39.5	85	9.2	1.83	31.69	143830	658.53	474.25	8.4	19.9
2426.0	13.3	39.0	83	9.2	1.57	31.77	144203	318.08	473.82	8.4	19.9
2427.0	17.9	39.2	84	9.2	1.49	31.82	144485	236.79	473.18	8.4	19.9
2428.0	18.5	40.5	82	9.2	1.48	31.88	144753	229.72	472.51	8.4	19.9
2429.0	17.3	41.0	82	9.2	1.51	31.94	145037	245.04	471.89	8.4	19.9
2430.0	16.9	39.0	81	9.2	1.49	31.99	145325	250.93	471.29	8.4	19.9
2431.0	12.8	39.3	84	9.2	1.60	32.07	145720	332.21	470.91	8.4	19.9
2432.0	11.6	39.5	83	9.2	1.63	32.16	146152	366.38	470.63	8.4	19.9
2433.0	2.6	40.0	69	9.2	2.07	32.54	147741	1636	474	8.4	19.9
2434.0	3.3	38.7	65	9.2	1.96	32.85	148926	1281	476	8.4	19.9
2435.0	3.9	39.7	65	9.2	1.91	33.10	149921	1081	478	8.4	19.9
2436.0	3.6	39.3	68	9.2	1.95	33.38	151058	1173	479	8.4	19.9
2437.0	3.3	39.4	65	9.2	1.97	33.69	152258	1302	482	8.4	19.9
2438.0	3.6	39.9	66	9.2	1.95	33.96	153349	1170	483	8.4	19.9
2439.0	3.2	39.7	67	9.2	1.99	34.28	154617	1338	486	8.4	19.9
2440.0	3.7	39.8	65	9.2	1.93	34.54	155656	1137	487	8.4	19.9
2441.0	4.5	39.3	64	9.2	1.86	34.77	156522	949.51	488.66	8.4	19.9
2442.0	10.3	39.5	64	9.2	1.58	34.87	156893	411.14	488.45	8.4	19.9
2443.0	9.8	37.8	64	9.2	1.58	34.97	157285	433.52	488.31	8.4	19.9
2444.0	10.0	37.9	65	9.2	1.57	35.07	157671	422.92	488.14	8.4	19.9
2445.0	10.9	37.1	65	9.2	1.54	35.16	158026	387.58	487.88	8.4	19.9
2446.0	19.4	35.7	64	9.2	1.33	35.21	158223	219.12	487.18	8.4	19.9
2447.0	17.6	35.8	64	9.2	1.36	35.27	158440	240.32	486.53	8.4	19.9
2448.0	8.0	36.8	65	9.2	1.63	35.39	158926	532.48	486.65	8.4	19.9
2449.0	10.6	36.0	64	9.2	1.53	35.49	159288	399.36	486.43	8.4	19.9
2450.0	9.2	36.4	64	9.2	1.58	35.60	159707	461.80	486.36	8.4	19.9
2451.0	9.7	36.3	64	9.2	1.56	35.70	160104	437.06	486.24	8.4	19.9
2452.0	9.6	38.0	65	9.2	1.59	35.80	160509	442.95	486.13	8.4	19.9
2453.0	9.3	38.7	67	9.2	1.62	35.91	160940	457.09	486.05	8.4	19.9
2454.0	11.4	37.3	91	9.2	1.63	36.00	161417	371.09	485.76	8.4	19.9
2455.0	12.0	36.6	92	9.2	1.61	36.08	161877	352.24	485.42	8.4	19.9

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2456.0	5.5	37.4	92	9.2	1.88	36.26	162886	775.16	486.15	8.4	19.9
2457.0	5.4	38.4	88	9.2	1.88	36.45	163855	779.87	486.90	8.4	19.9
2458.0	10.9	38.8	77	9.2	1.62	36.54	164280	388.76	486.65	8.4	19.9
2459.0	17.2	37.4	77	9.2	1.45	36.60	164548	246.21	486.04	8.4	19.9
2460.0	13.3	38.6	77	9.2	1.55	36.67	164896	319.25	485.63	8.4	19.9
2461.0	11.5	40.1	75	9.2	1.61	36.76	165287	369.91	485.34	8.4	19.9
2462.0	19.8	39.4	78	9.2	1.43	36.81	165525	214.41	484.66	8.4	19.9
2463.0	20.6	39.5	79	9.2	1.42	36.86	165755	206.16	483.96	8.4	19.9
2464.0	4.4	39.3	81	9.2	1.94	37.09	166849	955.40	485.14	8.4	19.9
2465.0	6.0	38.8	81	9.2	1.83	37.25	167655	705.66	485.68	8.4	19.9
2466.0	2.9	38.4	81	9.2	2.07	37.59	169329	1456	488	8.4	19.9
2467.0	3.2	38.7	62	9.2	1.95	37.90	170480	1306	490	8.4	19.9
2468.0	4.4	37.0	69	9.2	1.86	38.13	171427	970.72	491.29	8.4	19.9
2469.0	6.4	34.4	80	9.2	1.74	38.29	172173	660.89	491.71	8.4	19.9
2470.0	8.3	35.4	80	9.2	1.67	38.41	172752	512.45	491.76	8.4	19.9
2471.0	4.9	36.8	73	9.2	1.84	38.61	173656	871.76	492.69	8.4	19.9
2472.0	9.9	35.2	70	9.2	1.57	38.71	174076	426.46	492.53	8.4	19.9
2473.0	9.3	35.8	69	9.2	1.59	38.82	174522	454.73	492.43	8.4	19.9
2474.0	7.0	35.6	70	9.2	1.68	38.96	175119	605.52	492.71	8.4	19.9
2475.0	2.5	36.6	71	9.2	2.04	39.36	176816	1691	496	8.4	19.9
2476.0	4.0	40.9	75	9.2	1.97	39.62	177946	1070	497	8.4	19.9
2477.0	2.8	38.1	75	9.2	2.05	39.97	179547	1510	499	8.4	19.9
2477.6	2.2	38.6	80	9.2	2.16	40.25	180878	1965	502	8.4	19.9

BIT NUMBER	7	IADC CODE	517	INTERVAL	2477.6- 2636.0
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.6	BIT RUN	158.4
TOTAL HOURS	20.78	TOTAL TURNS	90559	CONDITION	T4 R8 G0.250

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2478.0	1.5	19.8	50	9.2	1.76	0.26	783	2768	100317	8.4	19.9
2479.0	2.3	21.1	45	9.2	1.65	0.70	1975	1877	30003	8.4	19.9
2480.0	4.6	26.3	54	9.2	1.60	0.92	2691	931	17889	8.4	19.9
2481.0	7.9	28.3	71	9.2	1.55	1.05	3229	536	12785	8.4	19.9
2482.0	8.6	29.1	72	9.2	1.54	1.17	3729	491	9991	8.4	19.9
2483.0	10.9	28.8	76	9.2	1.48	1.26	4146	390	8213	8.4	19.9
2484.0	9.5	29.4	76	9.2	1.53	1.36	4627	444	6999	8.4	19.9
2485.0	10.9	29.5	76	9.2	1.49	1.45	5045	388	6106	8.4	19.9
2486.0	12.2	28.5	77	9.2	1.44	1.53	5420	346	5420	8.4	19.9
2487.0	18.2	28.8	76	9.2	1.32	1.59	5672	233	4868	8.4	19.9
2488.0	15.9	28.6	77	9.2	1.36	1.65	5962	266	4426	8.4	19.9
2489.0	17.3	28.7	76	9.2	1.34	1.71	6227	245	4059	8.4	19.9
2490.0	14.0	29.3	68	9.2	1.37	1.78	6519	304	3756	8.4	19.9
2491.0	17.3	28.7	77	9.2	1.34	1.84	6786	245	3494	8.4	19.9
2492.0	7.6	30.0	70	9.2	1.58	1.97	7342	561	3291	8.4	19.9
2493.0	14.3	29.7	74	9.2	1.40	2.04	7650	296	3096	8.4	19.9
2494.0	12.3	30.4	76	9.2	1.46	2.12	8018	344	2928	8.4	19.9
2495.0	15.3	30.6	78	9.2	1.40	2.19	8322	277	2776	8.4	20.0
2496.0	12.4	31.9	76	9.2	1.48	2.27	8691	342	2644	8.4	20.0
2497.0	5.2	33.3	76	9.2	1.77	2.46	9563	814	2549	8.4	20.0
2498.0	9.7	34.8	76	9.2	1.60	2.56	10037	439	2446	8.4	20.0
2499.0	11.0	35.1	75	9.2	1.55	2.66	10444	384	2350	8.4	20.0
2500.0	8.5	37.5	74	9.2	1.67	2.77	10967	502	2267	8.4	20.0
2501.0	8.4	35.6	76	9.2	1.65	2.89	11507	505	2192	8.4	20.0
2502.0	15.1	33.2	78	9.2	1.44	2.96	11815	280	2113	8.4	20.0
2503.0	13.3	33.5	77	9.2	1.48	3.03	12162	319	2043	8.4	20.0
2504.0	15.8	34.5	78	9.2	1.44	3.10	12457	269	1976	8.4	20.0
2505.0	15.0	34.5	76	9.2	1.45	3.16	12761	283	1914	8.4	20.0
2506.0	13.6	34.4	76	9.2	1.48	3.24	13096	312	1857	8.4	20.0
2507.0	15.9	33.1	76	9.2	1.42	3.30	13381	266	1803	8.4	20.0
2508.0	12.7	33.8	74	9.2	1.49	3.38	13730	333	1755	8.4	20.0
2509.0	16.1	32.9	72	9.2	1.40	3.44	14000	264	1707	8.4	20.0
2510.0	17.3	33.8	72	9.2	1.38	3.50	14251	245	1662	8.4	20.0
2511.0	14.3	33.0	77	9.2	1.46	3.57	14576	297	1621	8.4	20.0
2512.0	14.3	33.3	77	9.2	1.46	3.64	14900	297	1583	8.4	20.0
2513.0	14.5	33.7	77	9.2	1.46	3.71	15219	292	1546	8.4	20.0
2514.0	14.3	33.4	78	9.3	1.45	3.78	15546	296	1512	8.4	20.0
2515.0	12.4	32.9	78	9.3	1.49	3.86	15924	343	1481	8.4	20.0
2516.0	9.1	31.5	78	9.3	1.56	3.97	16435	465	1454	8.4	20.0
2517.0	12.1	32.2	77	9.3	1.48	4.05	16815	351	1426	8.4	20.0
2518.0	12.5	31.0	76	9.3	1.45	4.13	17180	338	1399	8.4	20.0
2519.0	13.2	30.5	72	9.3	1.41	4.21	17507	322	1373	8.4	20.0
2520.0	13.1	31.0	73	9.3	1.42	4.28	17842	324	1349	8.4	20.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2521.0	11.4	30.8	75	9.3	1.47	4.37	18236	373	1326	8.4	20.0
2522.0	12.9	31.4	76	9.3	1.44	4.45	18589	330	1304	8.4	20.0
2523.0	11.9	31.9	75	9.3	1.47	4.53	18967	356	1283	8.4	20.0
2524.0	12.5	31.8	75	9.3	1.46	4.61	19330	340	1263	8.4	20.0
2525.0	12.2	31.6	75	9.3	1.46	4.70	19700	349	1243	8.4	20.0
2526.0	14.0	31.5	76	9.3	1.42	4.77	20027	304	1224	8.4	20.0
2527.0	10.4	32.6	75	9.3	1.52	4.86	20461	409	1207	8.4	20.0
2528.0	13.2	32.3	72	9.3	1.43	4.94	20789	320	1190	8.4	20.0
2529.0	13.5	30.9	68	9.3	1.39	5.01	21092	315	1173	8.4	20.0
2530.0	10.9	31.2	74	9.3	1.49	5.10	21500	390	1158	8.4	20.0
2531.0	12.2	31.8	74	9.3	1.46	5.19	21864	346	1143	8.4	20.0
2532.0	12.2	30.7	76	9.3	1.45	5.27	22237	349	1128	8.4	20.0
2533.0	12.5	30.5	76	9.3	1.45	5.35	22605	340	1114	8.4	20.0
2534.0	12.1	33.1	76	9.3	1.49	5.43	22982	351	1100	8.4	20.0
2535.0	3.1	36.5	76	9.2	1.99	5.75	24444	1354	1105	8.4	20.0
2536.0	3.7	37.5	76	9.2	1.95	6.02	25685	1158	1106	8.4	20.0
2537.0	3.4	33.8	76	9.2	1.92	6.32	27048	1262	1108	8.4	20.0
2538.0	6.5	32.8	76	9.2	1.70	6.48	27753	655	1101	8.4	20.0
2539.0	13.4	32.4	74	9.2	1.46	6.55	28085	317	1088	8.4	20.0
2540.0	10.9	32.7	75	9.2	1.53	6.64	28497	389	1077	8.4	20.0
2541.0	11.0	31.5	76	9.2	1.51	6.73	28908	384	1066	8.4	20.0
2542.0	10.2	32.6	76	9.2	1.55	6.83	29355	415	1056	8.4	20.0
2543.0	9.1	33.8	76	9.2	1.61	6.94	29857	465	1047	8.4	20.0
2544.0	9.7	32.3	76	9.2	1.56	7.04	30328	437	1038	8.4	20.0
2545.0	10.8	33.4	76	9.2	1.54	7.14	30749	392	1028	8.4	20.0
2546.0	10.7	33.2	76	9.2	1.54	7.23	31174	397	1019	8.4	20.0
2547.0	5.4	33.7	75	9.2	1.76	7.41	32007	786	1015	8.4	20.0
2548.0	8.9	33.5	69	9.2	1.57	7.53	32468	475	1008	8.4	20.0
2549.0	4.4	33.1	69	9.2	1.80	7.75	33413	965	1007	8.4	20.0
2550.0	3.6	34.8	72	9.2	1.90	8.03	34599	1167	1009	8.4	20.0
2551.0	5.9	34.3	76	9.2	1.75	8.20	35372	717	1005	8.4	20.0
2552.0	10.7	32.3	77	9.2	1.54	8.29	35805	397.00	997.14	8.4	20.0
2553.0	10.8	33.6	77	9.2	1.55	8.39	36234	393.47	989.13	8.4	20.0
2554.0	2.3	36.7	74	9.2	2.09	8.83	38197	1881	1001	8.4	20.0
2555.0	2.7	32.7	78	9.2	1.99	9.20	39964	1594	1008	8.4	20.0
2556.0	12.0	32.1	77	9.2	1.50	9.29	40348	355	1000	8.4	20.0
2557.0	9.5	40.5	59	9.2	1.60	9.39	40721	446.48	993.16	8.4	20.0
2558.0	7.2	39.9	55	9.2	1.66	9.53	41181	592.56	988.18	8.4	20.0
2559.0	8.2	39.6	56	9.2	1.61	9.66	41588	518.34	982.40	8.4	20.0
2560.0	10.9	40.8	56	9.2	1.53	9.75	41896	387.58	975.18	8.4	20.0
2561.0	3.5	42.5	67	9.2	2.00	10.03	43047	1208	978	8.4	20.0
2562.0	4.5	42.8	67	9.2	1.92	10.25	43945	944.80	977.58	8.4	20.0
2563.0	16.8	41.2	66	9.2	1.45	10.31	44181	252.10	969.08	8.4	20.0
2564.0	9.8	41.8	67	9.2	1.64	10.42	44593	434.70	962.90	8.4	20.0
2565.0	3.3	42.9	67	9.2	2.03	10.72	45827	1297	967	8.4	20.0
2566.0	4.1	42.8	69	9.2	1.96	10.96	46831	1025	967	8.4	20.0
2567.0	4.4	37.4	75	9.2	1.89	11.19	47856	966.01	967.36	8.4	20.0
2568.0	3.0	34.0	79	9.2	1.98	11.53	49448	1429	972	8.4	20.0
2569.0	9.5	38.0	78	9.2	1.66	11.63	49943	446.48	966.71	8.4	20.0
2570.0	16.2	38.3	79	9.2	1.49	11.70	50236	261.53	959.08	8.4	20.0

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2571.0	14.2	37.3	80	9.2	1.52	11.77	50576	299.23	952.02	8.4	20.0
2572.0	11.1	37.9	73	9.2	1.58	11.86	50969	380.51	945.96	8.4	20.0
2573.0	14.9	40.9	76	9.2	1.53	11.92	51274	283.91	939.02	8.4	20.0
2574.0	19.7	39.0	80	9.2	1.44	11.97	51519	215.58	931.52	8.4	20.0
2575.0	4.0	43.6	74	9.2	2.01	12.22	52625	1059	933	8.4	20.0
2576.0	4.0	42.5	76	9.2	2.00	12.47	53757	1058	934	8.4	20.1
2577.0	4.1	43.6	76	9.2	2.01	12.72	54875	1046	935	8.4	20.1
2578.0	7.1	43.9	76	9.2	1.83	12.86	55523	599.63	931.88	8.4	20.1
2579.0	12.0	43.3	77	9.2	1.64	12.94	55907	354.59	926.19	8.4	20.1
2580.0	10.4	44.1	76	9.2	1.69	13.04	56348	408.79	921.14	8.4	20.1
2581.0	12.7	43.9	73	9.2	1.61	13.12	56691	334.57	915.47	8.4	20.1
2582.0	12.2	44.0	73	9.2	1.62	13.20	57048	346.35	910.01	8.4	20.1
2583.0	12.1	43.8	71	9.2	1.61	13.28	57400	351.06	904.71	8.4	20.1
2584.0	14.7	43.1	69	9.2	1.53	13.35	57683	288.62	898.92	8.4	20.1
2585.0	11.6	43.2	71	9.2	1.62	13.44	58048	365.20	893.95	8.4	20.1
2586.0	5.3	43.6	80	9.2	1.94	13.63	58963	805.79	893.14	8.4	20.1
2587.0	3.6	44.5	83	9.2	2.10	13.90	60343	1170	896	8.4	20.1
2588.0	5.6	42.9	82	9.2	1.92	14.08	61222	755.13	894.39	8.4	20.1
2589.0	6.1	43.3	83	9.2	1.90	14.25	62045	700.94	892.66	8.4	20.1
2590.0	5.9	42.9	84	9.2	1.91	14.42	62898	717.44	891.10	8.4	20.1
2591.0	3.9	43.9	85	9.2	2.07	14.68	64213	1097	893	8.4	20.1
2592.0	4.3	44.9	84	9.2	2.05	14.91	65383	982.50	893.70	8.4	20.1
2593.0	3.8	43.8	84	9.2	2.07	15.17	66715	1117	896	8.4	20.1
2594.0	4.1	47.2	83	9.2	2.09	15.41	67924	1025	897	8.4	20.1
2595.0	4.6	48.0	82	9.2	2.06	15.63	68990	915.35	896.90	8.4	20.1
2596.0	4.8	48.4	80	9.2	2.04	15.84	69987	882.36	896.78	8.4	20.1
2597.0	3.9	47.6	82	9.2	2.11	16.09	71256	1090	898	8.4	20.1
2598.0	4.7	47.6	84	9.2	2.05	16.30	72325	896.50	898.38	8.4	20.1
2599.0	11.4	47.5	83	9.2	1.73	16.39	72761	372.27	894.04	8.4	20.1
2600.0	9.5	48.0	83	9.2	1.80	16.50	73283	446.48	890.39	8.4	20.1
2601.0	17.0	47.1	74	9.2	1.55	16.56	73543	249.75	885.19	8.4	20.1
2602.0	12.9	46.9	82	9.2	1.68	16.63	73924	329.86	880.73	8.4	20.1
2603.0	15.2	47.3	79	9.2	1.61	16.70	74237	279.20	875.93	8.4	20.1
2604.0	12.5	46.6	70	9.2	1.63	16.78	74571	338.10	871.68	8.4	20.1
2605.0	16.6	46.1	69	9.2	1.52	16.84	74819	255.64	866.84	8.4	20.1
2606.0	4.1	46.7	74	9.2	2.05	17.09	75916	1044	868	8.4	20.1
2607.0	4.1	48.2	80	9.2	2.10	17.33	77104	1046	870	8.4	20.1
2608.0	6.0	48.6	82	9.2	1.97	17.50	77929	708.01	868.36	8.4	20.1
2609.0	5.5	50.2	73	9.2	1.98	17.68	78727	769.27	867.60	8.4	20.1
2610.0	5.4	49.2	82	9.2	2.01	17.87	79630	782.23	866.96	8.4	20.1
2611.0	7.3	49.1	82	9.2	1.91	18.00	80300	578.43	864.79	8.4	20.1
2612.0	8.7	50.1	78	9.2	1.84	18.12	80836	488.89	862.00	8.4	20.1
2613.0	12.4	49.4	76	9.2	1.69	18.20	81204	342.81	858.16	8.4	20.1
2614.0	16.5	46.0	62	9.2	1.48	18.26	81429	256.82	853.75	8.4	20.1
2615.0	16.1	47.1	60	9.2	1.49	18.32	81652	263.88	849.46	8.4	20.1
2616.0	15.3	46.6	58	9.2	1.50	18.39	81882	278.02	845.33	8.4	20.1
2617.0	24.3	45.9	65	9.2	1.36	18.43	82042	174.35	840.52	8.4	20.1
2618.0	13.6	44.4	73	9.2	1.59	18.50	82365	312.18	836.76	8.4	20.1
2619.0	17.8	45.5	75	9.2	1.52	18.56	82617	237.97	832.52	8.4	20.1
2620.0	19.6	44.5	70	9.2	1.45	18.61	82831	216.76	828.20	8.4	20.1

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2621.0	21.8	44.9	71	9.2	1.42	18.65	83025	194.38	823.78	8.4	20.1
2622.0	19.1	45.7	68	9.2	1.46	18.71	83239	221.47	819.61	8.4	20.1
2623.0	15.3	45.9	59	9.2	1.49	18.77	83470	276.84	815.87	8.4	20.1
2624.0	10.7	45.9	43	9.2	1.50	18.86	83707	394.65	813.00	8.4	20.1
2625.0	10.9	47.0	60	9.2	1.63	18.96	84036	389.94	810.13	8.4	20.1
2626.0	10.9	47.0	71	9.2	1.69	19.05	84430	389.94	807.29	8.4	20.1
2627.0	8.7	46.6	72	9.2	1.77	19.16	84930	487.72	805.15	8.4	20.1
2628.0	5.2	45.6	72	9.2	1.94	19.36	85770	822.28	805.27	8.4	20.1
2629.0	4.0	44.9	63	9.2	1.97	19.61	86724	1071	807	8.4	20.1
2630.0	4.2	46.4	58	9.2	1.95	19.85	87556	1015	808	8.4	20.1
2631.0	5.5	46.7	62	9.2	1.88	20.03	88235	771.63	808.15	8.4	20.1
2632.0	3.8	46.8	55	9.2	1.97	20.30	89114	1123	810	8.4	20.1
2633.0	6.1	45.5	49	9.2	1.74	20.46	89593	695.05	809.45	8.4	20.1
2634.0	9.9	30.6	55	9.2	1.43	20.56	89923	426.46	807.00	8.4	20.1
2635.0	10.5	29.7	42	9.2	1.32	20.66	90167	405.25	804.45	8.4	20.1
2636.0	8.0	29.9	52	9.2	1.47	20.78	90559	531.30	802.72	8.4	20.1

BIT NUMBER	8	IADC CODE	537	INTERVAL	2636.0- 2901.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.2	BIT RUN	265.0
TOTAL HOURS	52.43	TOTAL TURNS	214055	CONDITION	T5 B8 G0.250

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2637.0	3.7	24.1	49	9.2	1.59	0.27	792	1147	42560	8.4	20.1
2638.0	4.0	23.4	47	9.2	1.55	0.52	1500	1058	21809	8.4	20.1
2639.0	6.4	21.8	47	9.2	1.38	0.68	1941	660	14759	8.4	20.1
2640.0	4.2	24.2	46	9.2	1.54	0.91	2602	1007	11321	8.4	20.1
2641.0	4.8	26.9	57	9.2	1.61	1.12	3309	876	9232	8.4	20.1
2642.0	6.8	29.9	58	9.2	1.55	1.27	3821	627	7798	8.4	20.1
2643.0	4.7	30.5	59	9.2	1.68	1.48	4568	894	6812	8.4	20.1
2644.0	12.7	38.0	65	9.2	1.50	1.56	4875	333	6002	8.4	20.1
2645.0	3.6	35.3	62	9.2	1.86	1.84	5915	1187	5467	8.4	20.1
2646.0	3.1	33.7	61	9.2	1.88	2.16	7114	1381	5058	8.4	20.1
2647.0	3.0	33.9	64	9.2	1.90	2.49	8380	1394	4725	8.4	20.1
2648.0	3.0	42.4	57	9.2	2.00	2.83	9518	1421	4450	8.4	20.1
2649.0	2.9	44.3	64	9.2	2.08	3.17	10850	1461	4220	8.4	20.1
2650.0	3.8	46.0	63	9.2	2.01	3.44	11862	1127	3999	8.4	20.1
2651.0	3.9	45.4	61	9.2	1.97	3.69	12795	1089	3805	8.4	20.1
2652.0	3.3	45.3	61	9.2	2.03	4.00	13907	1288	3648	8.4	20.1
2653.0	4.6	46.0	64	9.2	1.94	4.21	14749	922	3487	8.4	20.1
2654.0	6.5	47.9	70	9.2	1.88	4.37	15399	657	3330	8.4	20.1
2655.0	5.9	48.5	69	9.2	1.91	4.54	16098	716	3193	8.4	20.1
2656.0	8.1	50.5	71	9.2	1.84	4.66	16624	523	3059	8.4	20.1
2657.0	8.6	48.1	54	9.2	1.69	4.78	17001	492	2937	8.4	20.1
2658.0	9.3	48.4	64	9.2	1.73	4.89	17416	457	2824	8.4	20.2
2659.0	7.6	46.6	62	9.2	1.77	5.02	17909	558	2726	8.4	20.2
2660.0	7.4	47.7	62	9.2	1.78	5.15	18410	574	2636	8.4	20.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2661.0	8.6	48.6	69	9.2	1.78	5.27	18892	491	2550	8.4	20.2
2662.0	10.3	46.9	72	9.2	1.71	5.37	19314	412	2468	8.4	20.2
2663.0	10.4	48.2	66	9.2	1.69	5.46	19695	406	2392	8.4	20.2
2664.0	12.3	46.7	68	9.2	1.63	5.54	20026	345	2319	8.4	20.2
2665.0	11.0	47.0	68	9.2	1.67	5.63	20397	386	2252	8.4	20.2
2666.0	11.4	46.8	69	9.2	1.66	5.72	20759	371	2189	8.4	20.2
2667.0	13.2	47.3	67	9.2	1.60	5.80	21064	320	2129	8.4	20.2
2668.0	12.5	48.4	67	9.2	1.63	5.88	21386	338	2073	8.4	20.2
2669.0	11.7	48.7	73	9.2	1.70	5.96	21764	364	2021	8.4	20.2
2670.0	11.0	48.3	73	9.2	1.71	6.05	22165	386	1973	8.4	20.2
2671.0	8.6	49.4	70	9.2	1.79	6.17	22650	492	1931	8.4	20.2
2672.0	9.3	50.0	61	9.2	1.72	6.28	23043	455	1890	8.4	20.2
2673.0	15.3	50.2	65	9.2	1.57	6.34	23300	278	1846	8.4	20.2
2674.0	5.8	51.7	69	9.2	1.97	6.52	24023	736	1817	8.4	20.2
2675.0	3.4	51.3	72	9.2	2.17	6.81	25310	1265	1803	8.4	20.2
2676.0	3.4	51.9	71	9.2	2.17	7.11	26557	1242	1789	8.4	20.2
2677.0	5.4	52.6	69	9.2	2.00	7.29	27328	789	1764	8.4	20.2
2678.0	14.8	51.5	61	9.2	1.57	7.36	27575	287	1729	8.4	20.2
2679.0	14.9	51.4	63	9.2	1.58	7.43	27828	284	1696	8.4	20.2
2680.0	16.7	52.0	64	9.2	1.55	7.49	28059	253	1663	8.4	20.2
2681.0	7.0	51.1	61	9.2	1.84	7.63	28585	606	1639	8.4	20.2
2682.0	7.3	49.7	66	9.2	1.84	7.77	29131	584	1616	8.4	20.2
2683.0	12.2	49.1	68	9.2	1.66	7.85	29467	348	1589	8.4	20.2
2684.0	9.2	49.0	71	9.2	1.77	7.96	29933	462	1566	8.4	20.2
2685.0	12.5	48.8	71	9.2	1.66	8.04	30275	339	1541	8.4	20.2
2686.0	12.7	50.1	69	9.2	1.66	8.12	30604	335	1517	8.4	20.2
2687.0	10.2	50.3	68	9.2	1.73	8.22	31004	417	1495	8.4	20.2
2688.0	11.1	50.1	69	9.2	1.71	8.31	31377	383	1474	8.4	20.2
2689.0	10.5	50.5	70	9.2	1.74	8.40	31780	404	1454	8.4	20.2
2690.0	11.4	49.7	69	9.2	1.69	8.49	32143	373	1434	8.4	20.2
2691.0	10.3	48.7	67	9.2	1.71	8.59	32534	413	1415	8.4	20.2
2692.0	12.0	48.7	67	9.2	1.65	8.67	32869	355	1396	8.4	20.2
2693.0	14.5	49.1	69	9.2	1.60	8.74	33157	293	1377	8.4	20.2
2694.0	16.3	49.7	67	9.2	1.55	8.80	33403	260	1358	8.4	20.2
2695.0	14.0	50.3	68	9.2	1.62	8.87	33692	303	1340	8.4	20.2
2696.0	5.0	51.9	69	9.2	2.02	9.07	34519	843	1331	8.4	20.2
2697.0	3.5	52.8	67	9.2	2.14	9.35	35651	1199	1329	8.4	20.2
2698.0	7.3	51.1	69	9.2	1.87	9.49	36216	580	1317	8.4	20.2
2699.0	8.3	50.9	65	9.2	1.80	9.61	36690	511	1304	8.4	20.2
2700.0	4.3	51.1	68	9.2	2.06	9.85	37641	993	1300	8.4	20.2
2701.0	3.0	52.8	72	9.2	2.24	10.18	39098	1427	1301	8.4	20.2
2702.0	3.5	53.3	74	9.2	2.19	10.47	40373	1215	1300	8.4	20.2
2703.0	3.7	53.4	77	9.2	2.19	10.74	41615	1139	1298	8.4	20.2
2704.0	3.5	54.4	77	9.2	2.23	11.02	42953	1220	1297	8.4	20.2
2705.0	3.1	55.4	78	9.2	2.28	11.34	44436	1351	1297	8.4	20.2
2706.0	4.0	50.6	78	9.2	2.12	11.59	45596	1052	1294	8.4	20.2
2707.0	4.2	52.6	80	9.2	2.15	11.83	46752	1018	1290	8.4	20.2
2708.0	3.9	54.5	77	9.2	2.18	12.09	47937	1089	1287	8.4	20.2
2709.0	3.1	53.6	74	9.2	2.25	12.41	49383	1376	1288	8.4	20.2
2710.0	3.1	54.0	74	9.2	2.25	12.74	50831	1390	1290	8.4	20.2

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2711.0	5.8	52.5	72	9.2	1.99	12.91	51574	733	1282	8.4	20.2
2712.0	8.5	50.4	74	9.2	1.84	13.03	52101	502	1272	8.4	20.2
2713.0	10.6	50.5	71	9.2	1.74	13.13	52506	402	1261	8.4	20.2
2714.0	18.7	50.0	73	9.2	1.54	13.18	52740	227	1248	8.4	20.2
2715.0	7.2	50.1	74	9.2	1.89	13.32	53353	586	1239	8.4	20.2
2716.0	3.4	49.9	72	9.2	2.15	13.61	54635	1252	1239	8.4	20.2
2717.0	3.1	50.2	74	9.2	2.19	13.93	56052	1355	1241	8.4	20.2
2718.0	2.9	51.8	74	9.2	2.24	14.28	57593	1469	1244	8.4	20.2
2719.0	3.7	50.4	74	9.2	2.14	14.55	58806	1156	1242	8.4	20.2
2720.0	5.3	49.3	73	9.2	1.98	14.74	59629	796	1237	8.4	20.2
2721.0	3.0	50.3	75	9.2	2.21	15.07	61131	1409	1239	8.4	20.2
2722.0	3.7	50.9	78	9.2	2.15	15.34	62381	1134	1238	8.4	20.2
2723.0	3.4	51.3	78	9.2	2.20	15.64	63777	1263	1238	8.4	20.2
2724.0	8.0	52.1	78	9.2	1.90	15.76	64365	530	1230	8.4	20.2
2725.0	12.5	49.9	78	9.2	1.71	15.84	64738	338	1220	8.4	20.2
2726.0	15.8	49.7	75	9.2	1.61	15.90	65023	269	1210	8.4	20.2
2727.0	17.1	50.2	76	9.2	1.59	15.96	65292	249	1199	8.4	20.2
2728.0	11.8	50.6	73	9.2	1.71	16.05	65661	359	1190	8.4	20.2
2729.0	3.5	50.2	76	9.2	2.16	16.33	66967	1215	1190	8.4	20.2
2730.0	3.3	50.3	76	9.2	2.18	16.64	68355	1290	1191	8.4	20.2
2731.0	2.7	50.1	78	9.2	2.27	17.01	70123	1593	1195	8.4	20.2
2732.0	3.4	49.7	78	9.2	2.17	17.31	71490	1233	1196	8.4	20.2
2733.0	3.0	50.3	74	9.2	2.20	17.63	72954	1392	1198	8.4	20.2
2734.0	3.1	50.4	75	9.2	2.20	17.96	74400	1365	1200	8.4	20.2
2735.0	9.0	49.2	80	9.2	1.83	18.07	74936	472	1192	8.4	20.2
2736.0	10.4	49.5	84	9.2	1.79	18.16	75420	408	1184	8.4	20.2
2737.0	3.1	48.9	72	9.2	2.17	18.49	76840	1388	1186	8.4	20.2
2738.0	3.6	49.8	70	9.2	2.11	18.76	77996	1165	1186	8.4	20.2
2739.0	3.2	52.3	63	9.2	2.15	19.08	79175	1318	1188	8.4	20.2
2740.0	4.4	52.8	65	9.2	2.06	19.30	80072	971	1185	8.4	20.2
2741.0	7.9	52.1	65	9.2	1.83	19.43	80565	538	1179	8.4	20.3
2742.0	8.1	52.6	64	9.2	1.82	19.56	81041	527	1173	8.4	20.3
2743.0	7.3	52.3	64	9.2	1.86	19.69	81564	580	1168	8.4	20.3
2744.0	7.3	52.7	64	9.2	1.87	19.83	82094	584	1162	8.4	20.3
2745.0	2.5	54.5	65	9.2	2.28	20.22	83621	1668	1167	8.4	20.3
2746.0	3.0	53.7	66	9.2	2.22	20.56	84953	1429	1169	8.4	20.3
2747.0	3.0	54.3	72	9.2	2.25	20.89	86377	1395	1171	8.4	20.3
2748.0	2.9	55.6	69	9.2	2.26	21.23	87783	1447	1174	8.4	20.3
2749.0	3.7	54.2	74	9.2	2.19	21.50	88992	1160	1174	8.4	20.3
2750.0	7.4	53.5	80	9.2	1.95	21.64	89639	575	1168	8.4	20.3
2751.0	11.4	52.2	79	9.2	1.77	21.73	90057	372	1161	8.4	20.3
2752.0	9.6	53.0	80	9.2	1.85	21.83	90557	442	1155	8.4	20.3
2753.0	9.3	53.2	81	9.2	1.87	21.94	91080	458	1149	8.4	20.3
2754.0	10.2	53.4	80	9.2	1.83	22.04	91546	415	1143	8.4	20.3
2755.0	9.8	53.8	80	9.2	1.85	22.14	92038	434	1137	8.4	20.3
2756.0	8.6	53.8	77	9.2	1.88	22.26	92575	491	1132	8.4	20.3
2757.0	9.8	53.2	74	9.2	1.81	22.36	93030	432	1126	8.4	20.3
2758.0	10.9	53.1	79	9.2	1.80	22.45	93463	389	1120	8.4	20.3
2759.0	12.4	53.1	77	9.2	1.74	22.53	93833	342	1114	8.4	20.3
2760.0	11.4	52.5	77	9.2	1.76	22.62	94238	371	1108	8.4	20.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2761.0	11.8	52.7	83	9.2	1.78	22.70	94659	359	1102	8.4	20.3
2762.0	14.1	52.4	83	9.2	1.71	22.77	95011	300	1095	8.4	20.3
2763.0	3.4	54.2	84	9.2	2.26	23.07	96491	1244	1096	8.4	20.3
2764.0	3.4	53.8	62	9.2	2.14	23.36	97576	1231	1097	8.4	20.3
2765.0	2.9	53.7	62	9.2	2.20	23.70	98839	1448	1100	8.4	20.3
2766.0	2.6	53.9	66	9.2	2.26	24.08	100332	1609	1104	8.4	20.3
2767.0	3.6	53.0	49	9.2	2.03	24.36	101166	1191	1105	8.4	20.3
2768.0	3.0	53.8	48	9.2	2.10	24.70	102137	1434	1107	8.4	20.3
2769.0	5.1	53.7	46	9.2	1.89	24.89	102683	835	1105	8.4	20.3
2770.0	16.4	52.1	48	9.2	1.45	24.95	102858	258	1099	8.4	20.3
2771.0	20.5	51.8	48	9.2	1.37	25.00	102999	207	1092	8.4	20.3
2772.0	7.6	52.7	47	9.2	1.73	25.13	103368	556	1088	8.4	20.3
2773.0	11.6	53.0	51	9.2	1.61	25.22	103631	365	1083	8.4	20.3
2774.0	3.2	54.2	53	9.2	2.12	25.53	104624	1332	1085	8.4	20.3
2775.0	3.0	53.6	53	9.2	2.13	25.86	105669	1395	1087	8.4	20.3
2776.0	3.9	53.0	52	9.2	2.02	26.12	106479	1096	1087	8.4	20.3
2777.0	3.0	54.2	56	9.2	2.16	26.45	107601	1405	1089	8.4	20.3
2778.0	2.9	53.6	58	9.2	2.17	26.79	108791	1438	1092	8.4	20.3
2779.0	3.1	53.5	58	9.2	2.15	27.11	109916	1364	1094	8.4	20.3
2780.0	4.1	52.9	58	9.2	2.04	27.36	110763	1031	1093	8.4	20.3
2781.0	2.7	55.6	50	9.2	2.17	27.72	111858	1553	1096	8.4	20.3
2782.0	3.1	55.7	50	9.2	2.12	28.04	112823	1365	1098	8.4	20.3
2783.0	3.2	55.4	58	9.2	2.16	28.36	113909	1321	1100	8.4	20.3
2784.0	3.7	49.1	59	9.2	2.03	28.63	114859	1143	1100	8.4	20.3
2785.0	3.6	48.4	54	9.2	2.00	28.90	115759	1185	1101	8.4	20.3
2786.0	3.8	51.7	51	9.2	2.01	29.17	116564	1116	1101	8.4	20.3
2787.0	4.9	53.3	50	9.2	1.93	29.37	117180	866	1099	8.4	20.3
2788.0	6.0	54.7	59	9.2	1.93	29.54	117769	707	1097	8.4	20.3
2789.0	7.3	54.4	65	9.2	1.88	29.67	118298	577	1093	8.4	20.3
2790.0	10.6	53.8	66	9.2	1.75	29.77	118671	401	1089	8.4	20.3
2791.0	9.3	55.2	64	9.2	1.80	29.88	119082	456	1085	8.4	20.3
2792.0	10.3	53.6	66	9.2	1.76	29.97	119465	411	1080	8.4	20.3
2793.0	12.5	54.4	69	9.2	1.71	30.05	119794	338	1076	8.4	20.3
2794.0	7.6	54.9	71	9.2	1.91	30.18	120352	557	1072	8.4	20.3
2795.0	5.5	55.3	67	9.2	2.01	30.37	121077	769	1070	8.4	20.3
2796.0	2.9	49.6	61	9.2	2.15	30.72	122365	1488	1073	8.4	20.3
2797.0	3.6	49.2	68	9.2	2.09	30.99	123485	1166	1074	8.4	20.3
2798.0	3.2	51.2	71	9.2	2.18	31.31	124823	1336	1075	8.4	20.3
2799.0	3.9	50.1	73	9.2	2.10	31.56	125944	1092	1075	8.4	20.3
2800.0	7.1	49.7	71	9.2	1.88	31.70	126547	596	1072	8.4	20.3
2801.0	6.0	51.3	72	9.2	1.96	31.87	127273	710	1070	8.4	20.3
2802.0	4.9	51.6	72	9.2	2.04	32.08	128156	868	1069	8.4	20.3
2803.0	6.2	51.2	72	9.2	1.95	32.24	128861	689	1067	8.4	20.3
2804.0	10.6	51.2	69	9.2	1.74	32.33	129254	402	1063	8.4	20.3
2805.0	6.3	50.6	67	9.2	1.91	32.49	129899	677	1060	8.4	20.3
2806.0	18.1	48.2	54	9.2	1.42	32.55	130078	234	1056	8.4	20.3
2807.0	7.1	49.4	69	9.2	1.86	32.69	130661	600	1053	8.4	20.3
2808.0	13.8	48.4	67	9.2	1.60	32.76	130951	307	1049	8.4	20.3
2809.0	10.2	47.7	70	9.2	1.72	32.86	131365	417	1045	8.4	20.3
2810.0	10.7	48.2	68	9.2	1.69	32.95	131747	395	1041	8.4	20.3

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2811.0	7.6	46.5	70	9.2	1.80	33.09	132298	560	1038	8.4	20.3
2812.0	2.8	48.8	71	9.2	2.20	33.45	133849	1539	1041	8.4	20.3
2813.0	2.9	49.5	73	9.2	2.21	33.80	135379	1488	1044	8.4	20.3
2814.0	2.7	50.1	72	9.2	2.23	34.17	136959	1555	1047	8.4	20.3
2815.0	3.1	49.2	68	9.2	2.15	34.49	138296	1381	1049	8.4	20.3
2816.0	4.8	48.4	65	9.2	1.97	34.70	139114	886	1048	8.4	20.3
2817.0	2.9	48.6	71	9.2	2.18	35.04	140581	1457	1050	8.4	20.3
2818.0	3.5	50.0	73	9.2	2.15	35.33	141843	1222	1051	8.4	20.3
2819.0	5.1	49.7	73	9.2	2.00	35.53	142701	829	1050	8.4	20.3
2820.0	6.0	51.2	72	9.2	1.96	35.70	143429	710	1048	8.4	20.3
2821.0	8.8	51.9	70	9.2	1.82	35.81	143908	482	1045	8.4	20.3
2822.0	8.8	51.3	62	9.2	1.76	35.92	144327	479	1042	8.4	20.3
2823.0	10.0	51.8	64	9.2	1.74	36.02	144710	425	1038	8.4	20.3
2824.0	4.2	51.8	70	9.2	2.09	36.26	145722	1020	1038	8.4	20.3
2825.0	2.6	53.2	65	9.2	2.25	36.65	147221	1626	1041	8.4	20.3
2826.0	3.5	54.0	69	9.2	2.18	36.93	148401	1216	1042	8.4	20.4
2827.0	9.5	53.6	69	9.2	1.80	37.04	148837	448	1039	8.4	20.4
2828.0	5.9	53.9	71	9.2	1.99	37.21	149551	715	1038	8.4	20.4
2829.0	8.5	51.5	67	9.2	1.81	37.33	150022	501	1035	8.4	20.4
2830.0	7.6	42.9	75	9.2	1.78	37.46	150617	560	1032	8.4	20.4
2831.0	7.6	42.4	66	9.2	1.73	37.59	151136	556	1030	8.4	20.4
2832.0	7.0	43.2	72	9.2	1.80	37.73	151746	602	1028	8.4	20.4
2833.0	7.3	43.6	73	9.2	1.80	37.87	152347	580	1025	8.4	20.4
2834.0	2.9	43.1	73	9.2	2.10	38.21	153847	1445	1028	8.4	20.4
2835.0	2.1	42.1	71	9.2	2.19	38.69	155880	2032	1033	8.4	20.4
2836.0	3.3	48.5	73	9.2	2.15	38.99	157230	1302	1034	8.4	20.4
2837.0	3.5	49.0	76	9.2	2.14	39.28	158544	1220	1035	8.4	20.4
2838.0	11.5	48.8	73	9.2	1.70	39.37	158925	369	1032	8.4	20.4
2839.0	11.4	48.3	72	9.2	1.69	39.46	159304	372	1028	8.4	20.4
2840.0	7.7	48.2	69	9.2	1.82	39.59	159842	554	1026	8.4	20.4
2841.0	9.7	47.5	68	9.2	1.72	39.69	160261	436	1023	8.4	20.4
2842.0	8.6	49.2	65	9.2	1.77	39.81	160719	495	1021	8.4	20.4
2843.0	6.1	46.4	68	9.2	1.87	39.97	161387	700	1019	8.4	20.4
2844.0	2.3	47.1	67	9.2	2.22	40.41	163130	1842	1023	8.4	20.4
2845.0	2.8	47.1	70	9.2	2.16	40.76	164633	1513	1025	8.4	20.4
2846.0	5.7	45.7	66	9.2	1.87	40.94	165328	750	1024	8.4	20.4
2847.0	9.2	45.1	61	9.2	1.67	41.05	165729	461	1021	8.4	20.4
2848.0	11.5	45.5	60	9.2	1.59	41.14	166042	368	1018	8.4	20.4
2849.0	8.5	45.8	58	9.2	1.69	41.25	166454	501	1016	8.4	20.4
2850.0	7.6	44.7	42	9.2	1.60	41.38	166782	558	1014	8.4	20.4
2851.0	9.3	40.4	66	9.2	1.64	41.49	167208	458	1011	8.4	20.4
2852.0	6.7	41.0	68	9.2	1.76	41.64	167813	631	1009	8.4	20.4
2853.0	2.5	46.8	67	9.2	2.18	42.04	169400	1681	1012	8.4	20.4
2854.0	3.2	46.1	66	9.2	2.08	42.35	170630	1309	1014	8.4	20.4
2855.0	3.2	46.1	66	9.2	2.08	42.66	171860	1314	1015	8.4	20.4
2856.0	3.5	45.7	70	9.2	2.06	42.94	173037	1197	1016	8.4	20.4
2857.0	3.2	47.7	68	9.2	2.12	43.25	174314	1323	1017	8.4	20.4
2858.0	5.8	45.2	71	9.2	1.89	43.42	175049	734	1016	8.4	20.4
2859.0	3.9	45.6	70	9.2	2.02	43.68	176116	1077	1016	8.4	20.4
2860.0	2.3	46.5	66	9.2	2.20	44.11	177819	1825	1020	8.4	20.4

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2861.0	3.8	44.9	74	9.2	2.05	44.37	178992	1113	1020	8.4	20.4
2862.0	3.8	44.4	71	9.2	2.02	44.63	180103	1104	1021	8.4	20.4
2863.0	6.0	43.8	68	9.2	1.84	44.80	180784	712	1019	8.4	20.4
2864.0	9.9	44.1	69	9.2	1.68	44.90	181202	426	1017	8.4	20.4
2865.0	6.2	44.6	71	9.2	1.86	45.06	181890	683	1015	8.4	20.4
2866.0	3.7	44.4	73	9.2	2.05	45.33	183091	1159	1016	8.4	20.4
2867.0	5.1	44.5	74	9.2	1.94	45.53	183965	833	1015	8.4	20.4
2868.0	2.5	45.1	71	9.2	2.18	45.94	185697	1723	1018	8.4	20.4
2869.0	2.8	44.6	71	9.2	2.13	46.29	187201	1497	1020	8.4	20.4
2870.0	2.6	47.0	68	9.2	2.18	46.68	188781	1653	1023	8.4	20.4
2871.0	3.7	45.0	71	9.2	2.04	46.95	189924	1143	1023	8.4	20.4
2872.0	3.4	44.3	70	9.2	2.06	47.24	191161	1248	1024	8.4	20.4
2873.0	2.2	46.1	63	9.2	2.19	47.69	192854	1903	1028	8.4	20.4
2874.0	15.4	37.6	75	9.2	1.48	47.76	193145	276	1025	8.4	20.4
2875.0	12.3	43.2	75	9.2	1.62	47.84	193514	345	1022	8.4	20.4
2876.0	9.2	35.7	82	9.2	1.65	47.95	194048	463	1020	8.4	20.4
2877.0	6.0	35.1	83	9.2	1.78	48.11	194875	708	1019	8.4	20.4
2878.0	2.8	38.4	75	9.2	2.05	48.47	196450	1491	1020	8.4	20.4
2879.0	2.3	41.2	74	9.2	2.16	48.90	198375	1851	1024	8.4	20.4
2880.0	3.2	44.6	73	9.2	2.09	49.21	199742	1317	1025	8.4	20.4
2881.0	5.3	43.6	72	9.2	1.90	49.40	200558	796	1024	8.4	20.4
2882.0	6.8	44.7	59	9.2	1.76	49.55	201081	622	1023	8.4	20.4
2883.0	6.4	44.4	69	9.2	1.83	49.70	201721	660	1021	8.4	20.4
2884.0	3.5	42.2	78	9.2	2.05	49.99	203070	1218	1022	8.4	20.4
2885.0	3.7	38.0	78	9.2	1.97	50.26	204334	1151	1022	8.4	20.4
2886.0	9.1	38.5	75	9.2	1.67	50.37	204831	468	1020	8.4	20.4
2887.0	13.2	37.4	73	9.2	1.52	50.45	205166	322	1017	8.4	20.4
2888.0	6.9	36.8	76	9.2	1.74	50.59	205825	611	1016	8.4	20.4
2889.0	5.1	37.2	77	9.2	1.84	50.79	206727	827	1015	8.4	20.4
2890.0	7.8	38.2	72	9.2	1.70	50.92	207285	547	1013	8.4	20.4
2891.0	9.4	36.9	67	9.2	1.60	51.02	207715	452	1011	8.4	20.4
2892.0	7.2	38.0	65	9.2	1.69	51.16	208259	588	1009	8.4	20.4
2893.0	6.4	38.9	70	9.2	1.76	51.32	208911	659	1008	8.4	20.4
2894.0	6.9	38.9	73	9.2	1.75	51.46	209551	616	1006	8.4	20.4
2895.0	10.2	38.7	70	9.2	1.60	51.56	209961	416	1004	8.4	20.4
2896.0	12.9	39.0	77	9.2	1.56	51.64	210316	329	1002	8.4	20.4
2897.0	12.5	38.9	79	9.2	1.58	51.72	210695	339.28	999.02	8.4	20.4
2898.0	10.3	40.6	77	9.2	1.66	51.81	211142	411.14	996.77	8.4	20.4
2899.0	11.7	39.7	78	9.2	1.61	51.90	211542	364.02	994.37	8.4	20.4
2900.0	6.6	40.7	79	9.2	1.82	52.05	212269	646.75	993.05	8.4	20.4
2901.0	2.6	40.6	78	9.2	2.12	52.43	214055	1609	995	8.4	20.4

BIT NUMBER	9	IADC CODE	537	INTERVAL	2901.0- 3021.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.4	BIT RUN	120.0
TOTAL HOURS	22.14	TOTAL TURNS	92542	CONDITION	T2 B2 G0.000

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2902.0	2.4	25.7	57	9.2	1.79	0.42	1434	1767	44028	8.4	20.4
2903.0	2.1	33.0	57	9.2	1.97	0.89	3071	2026	23027	8.4	20.4
2904.0	2.3	40.2	56	9.2	2.05	1.33	4546	1850	15968	8.4	20.4
2905.0	3.7	44.1	60	9.2	1.96	1.60	5503	1136	12260	8.4	20.4
2906.0	3.8	49.3	79	9.2	2.13	1.86	6742	1113	10031	8.4	20.4
2907.0	4.2	47.5	68	9.2	2.02	2.10	7719	1020	8529	8.4	20.4
2908.0	5.2	47.6	62	9.2	1.91	2.29	8434	814	7427	8.4	20.4
2909.0	5.2	47.1	62	9.2	1.91	2.49	9159	821	6601	8.4	20.4
2910.0	2.7	48.8	61	9.2	2.16	2.86	10551	1600	6045	8.4	20.4
2911.0	3.1	44.0	65	9.2	2.05	3.18	11798	1354	5576	8.4	20.4
2912.0	3.2	41.0	74	9.2	2.04	3.49	13161	1309	5188	8.4	20.4
2913.0	2.9	45.8	67	9.2	2.12	3.84	14552	1471	4879	8.4	20.5
2914.0	3.4	38.4	73	9.2	1.99	4.14	15865	1265	4601	8.4	20.5
2915.0	15.8	37.2	75	9.2	1.47	4.20	16150	269	4291	8.4	20.5
2916.0	15.3	36.8	76	9.2	1.48	4.27	16448	277	4024	8.4	20.5
2917.0	5.6	39.1	75	9.2	1.83	4.45	17255	760	3820	8.4	20.5
2918.0	4.0	39.7	80	9.2	1.98	4.70	18459	1065	3658	8.4	20.5
2919.0	3.8	40.4	68	9.2	1.95	4.96	19544	1119	3516	8.4	20.5
2920.0	4.3	43.3	74	9.2	1.98	5.19	20576	987	3383	8.4	20.5
2921.0	4.0	37.7	60	9.2	1.85	5.44	21465	1054	3267	8.4	20.5
2922.0	11.6	36.3	61	9.2	1.49	5.53	21782	366	3129	8.4	20.5
2923.0	11.8	36.0	67	9.2	1.51	5.61	22121	358	3003	8.4	20.5
2924.0	9.1	35.4	67	9.2	1.59	5.72	22566	468	2893	8.4	20.5
2925.0	9.6	34.3	68	9.2	1.56	5.83	22991	443	2791	8.4	20.5
2926.0	8.8	35.4	68	9.2	1.60	5.94	23454	482	2698	8.4	20.5
2927.0	9.0	34.5	67	9.2	1.58	6.05	23902	470	2613	8.4	20.5
2928.0	8.8	34.6	67	9.2	1.59	6.16	24360	482	2534	8.4	20.5
2929.0	9.9	34.5	67	9.2	1.55	6.27	24768	430	2458	8.4	20.5
2930.0	8.8	34.9	63	9.2	1.57	6.38	25197	479	2390	8.4	20.5
2931.0	9.3	35.5	64	9.2	1.57	6.49	25610	457	2326	8.4	20.5
2932.0	9.8	36.5	63	9.2	1.56	6.59	25996	432	2265	8.4	20.5
2933.0	8.8	35.8	64	9.2	1.58	6.70	26427	479	2209	8.4	20.5
2934.0	10.6	36.1	64	9.2	1.53	6.80	26790	401	2154	8.4	20.5
2935.0	8.5	35.9	69	9.2	1.63	6.91	27283	502	2106	8.4	20.5
2936.0	8.3	36.4	72	9.2	1.65	7.03	27800	509	2060	8.4	20.5
2937.0	6.6	36.2	72	9.2	1.72	7.19	28454	647	2021	8.4	20.5
2938.0	5.1	36.7	71	9.2	1.81	7.38	29280	825	1988	8.4	20.5
2939.0	4.5	40.0	69	9.2	1.89	7.60	30201	944	1961	8.4	20.5
2940.0	3.9	40.0	68	9.2	1.93	7.86	31244	1090	1939	8.4	20.5
2941.0	5.1	40.0	68	9.2	1.84	8.06	32045	834	1911	8.4	20.5
2942.0	12.5	40.2	74	9.2	1.57	8.14	32397	338	1873	8.4	20.5
2943.0	10.0	40.2	70	9.2	1.63	8.24	32817	424	1838	8.4	20.5
2944.0	16.9	39.7	82	9.2	1.50	8.30	33110	251	1801	8.4	20.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	URNS	ICOST	CCOST	PP	FG
2945.0	18.0	40.5	84	9.2	1.50	8.35	33389	236	1766	8.4	20.5
2946.0	16.9	40.2	84	9.2	1.51	8.41	33686	251	1732	8.4	20.5
2947.0	16.1	39.1	84	9.2	1.52	8.47	33998	264	1700	8.4	20.5
2948.0	3.6	41.6	76	9.2	2.02	8.75	35268	1175	1689	8.4	20.5
2949.0	3.7	39.8	72	9.2	1.97	9.02	36451	1157	1678	8.4	20.5
2950.0	4.3	40.1	74	9.2	1.94	9.26	37500	998	1664	8.4	20.5
2951.0	3.9	41.3	75	9.2	1.99	9.52	38657	1098	1653	8.4	20.5
2952.0	5.4	41.0	73	9.2	1.87	9.70	39479	792	1636	8.4	20.5
2953.0	15.7	39.2	75	9.2	1.49	9.77	39764	270	1609	8.4	20.5
2954.0	6.0	40.2	77	9.2	1.84	9.94	40539	713	1592	8.4	20.5
2955.0	8.5	41.5	77	9.2	1.73	10.05	41084	501	1572	8.4	20.5
2956.0	8.7	40.8	75	9.2	1.71	10.17	41607	490	1553	8.4	20.5
2957.0	12.8	40.6	74	9.2	1.57	10.25	41953	332	1531	8.4	20.5
2958.0	10.3	39.3	72	9.2	1.62	10.35	42373	412	1511	8.4	20.5
2959.0	5.7	44.1	68	9.2	1.87	10.52	43099	749	1498	8.4	20.5
2960.0	3.7	44.6	66	9.2	2.02	10.80	44185	1159	1492	8.4	20.5
2961.0	4.5	46.5	67	9.2	1.97	11.02	45073	933	1483	8.4	20.5
2962.0	3.1	46.4	74	9.2	2.13	11.34	46491	1357	1481	8.4	20.5
2963.0	4.5	46.7	76	9.2	2.02	11.56	47507	946	1472	8.4	20.5
2964.0	4.0	44.9	75	9.2	2.04	11.81	48647	1073	1466	8.4	20.5
2965.0	4.4	46.5	71	9.2	2.00	12.04	49618	962	1458	8.4	20.5
2966.0	3.9	45.4	73	9.2	2.04	12.30	50748	1096	1452	8.4	20.5
2967.0	5.2	45.7	75	9.2	1.95	12.49	51610	808	1443	8.4	20.5
2968.0	6.7	45.9	73	9.2	1.85	12.64	52263	633	1431	8.4	20.5
2969.0	3.9	46.3	71	9.2	2.04	12.89	53353	1083	1426	8.4	20.5
2970.0	3.6	46.3	74	9.2	2.08	13.17	54585	1171	1422	8.4	20.5
2971.0	7.0	46.5	73	9.2	1.85	13.31	55215	609	1410	8.4	20.5
2972.0	7.2	46.8	75	9.2	1.85	13.45	55843	593	1399	8.4	20.5
2973.0	17.3	47.1	71	9.2	1.53	13.51	56089	245	1383	8.4	20.5
2974.0	8.1	47.0	75	9.2	1.81	13.63	56642	521	1371	8.4	20.5
2975.0	7.5	47.6	75	9.2	1.85	13.77	57250	569	1360	8.4	20.5
2976.0	6.9	47.7	72	9.2	1.86	13.91	57879	616	1350	8.4	20.5
2977.0	4.5	47.5	73	9.2	2.02	14.14	58860	952	1345	8.4	20.5
2978.0	5.9	48.2	70	9.2	1.92	14.31	59574	721	1337	8.4	20.5
2979.0	6.6	48.3	70	9.2	1.87	14.46	60205	639	1328	8.4	20.5
2980.0	5.1	48.0	69	9.2	1.96	14.65	61024	834	1322	8.4	20.5
2981.0	8.9	47.7	68	9.2	1.76	14.77	61485	477	1311	8.4	20.5
2982.0	17.2	42.9	72	9.2	1.48	14.82	61735	246	1298	8.4	20.5
2983.0	16.1	44.0	71	9.2	1.52	14.89	61999	264	1285	8.4	20.5
2984.0	16.9	43.4	69	9.2	1.48	14.94	62244	251	1273	8.4	20.5
2985.0	17.5	43.3	70	9.2	1.48	15.00	62484	243	1261	8.4	20.5
2986.0	18.2	43.3	66	9.2	1.44	15.06	62703	233	1248	8.4	20.5
2987.0	14.0	43.3	64	9.2	1.52	15.13	62978	304	1237	8.4	20.5
2988.0	3.5	41.2	65	9.2	1.98	15.41	64099	1213	1237	8.4	20.5
2989.0	4.4	42.3	63	9.2	1.90	15.64	64962	967	1234	8.4	20.5
2990.0	2.9	42.9	71	9.2	2.10	15.99	66453	1481	1237	8.4	20.5
2991.0	3.2	44.4	73	9.2	2.09	16.30	67811	1308	1238	8.4	20.5
2992.0	2.5	44.3	74	9.2	2.17	16.69	69550	1663	1242	8.4	20.5
2993.0	7.6	41.8	73	9.2	1.76	16.82	70125	558	1235	8.4	20.5
2994.0	6.6	42.0	71	9.2	1.80	16.98	70770	640	1229	8.4	20.5

DEPTH	ROP	WOB	RPM	MW	"d"c	HOURS	TURNS	ICOST	CCOST	PP	FG
2995.0	16.4	41.1	70	9.2	1.47	17.04	71025	259	1218	8.4	20.5
2996.0	13.7	42.4	65	9.2	1.53	17.11	71311	310	1209	8.4	20.5
2997.0	4.9	42.8	70	9.2	1.90	17.31	72158	858	1205	8.4	20.5
2998.0	13.7	42.2	71	9.2	1.55	17.38	72468	310	1196	8.4	20.5
2999.0	6.7	43.4	71	9.2	1.81	17.53	73099	630	1190	8.4	20.5
3000.0	2.7	46.4	72	9.2	2.18	17.91	74707	1579	1194	8.4	20.6
3001.0	3.9	48.8	68	9.2	2.06	18.16	75754	1094	1193	8.4	20.6
3002.0	11.7	44.0	72	9.2	1.63	18.25	76123	363	1185	8.4	20.6
3003.0	19.0	44.8	74	9.2	1.48	18.30	76357	223	1175	8.4	20.6
3004.0	21.1	43.9	72	9.2	1.43	18.35	76562	201	1166	8.4	20.6
3005.0	20.7	44.0	73	9.2	1.44	18.40	76772	205	1157	8.4	20.6
3006.0	21.1	44.6	73	9.2	1.44	18.44	76981	201	1147	8.4	20.6
3007.0	5.5	39.8	58	9.2	1.76	18.63	77612	772	1144	8.4	20.6
3008.0	2.8	45.1	70	9.2	2.14	18.99	79134	1533	1148	8.4	20.6
3009.0	3.8	48.5	72	9.2	2.09	19.25	80269	1118	1147	8.4	20.6
3010.0	5.0	47.5	71	9.2	1.97	19.45	81124	851	1145	8.4	20.6
3011.0	5.1	47.2	70	9.2	1.95	19.65	81948	832	1142	8.4	20.6
3012.0	3.8	47.2	72	9.2	2.07	19.91	83087	1122	1142	8.4	20.6
3013.0	3.1	47.3	72	9.2	2.14	20.23	84468	1358	1143	8.4	20.6
3014.0	3.0	47.5	71	9.2	2.15	20.56	85882	1400	1146	8.4	20.6
3015.0	3.4	48.2	71	9.2	2.11	20.86	87130	1251	1147	8.4	20.6
3016.0	2.5	49.0	70	9.2	2.24	21.26	88820	1701	1151	8.4	20.6
3017.0	3.1	48.1	69	9.2	2.14	21.58	90148	1351	1153	8.4	20.6
3018.0	4.8	49.7	74	9.2	2.03	21.79	91076	892	1151	8.4	20.6
3019.0	7.1	49.1	68	9.2	1.85	21.93	91652	600	1146	8.4	20.6
3020.0	11.0	49.7	68	9.2	1.70	22.02	92020	385	1140	8.4	20.6
3021.0	8.5	49.8	74	9.2	1.82	22.14	92542	498	1135	8.4	20.6

(d). COMPUTER DATA LISTING : LIST B

INTERVAL 10m averages.

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.

URNS. 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, (and therefore uneconomic), this should change from negative to positive.

BIT NUMBER	1	IADC CODE	111	INTERVAL	74.0-	209.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	18	18 18
COST	0.00	TRIP TIME	2.4	BIT RUN		135.0
TOTAL HOURS	3.28	TOTAL TURNS	13555	CONDITION	T2 B5 G0.000	

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
80.0	16.1	6.0	0.37	618	11759.21	263	1960	-
90.0	28.5	16.0	0.72	1706	13249.45	149.02	828.09	-
100.0	28.6	26.0	1.07	2987	14732.62	148.32	566.64	-
110.0	56.4	36.0	1.25	3747	15484.73	75.21	430.13	-
120.0	38.6	46.0	1.51	5033	16582.68	109.79	360.49	-
130.0	16.5	56.0	2.11	8030	19147.94	256.53	341.93	-
140.0	80.4	66.0	2.24	8639	19675.71	52.78	298.12	-
150.0	48.0	76.0	2.45	9627	20559.25	88.35	270.52	-
160.0	77.4	86.0	2.58	10162	21106.91	54.77	245.43	-
170.0	62.4	96.0	2.74	10936	21786.65	67.97	226.94	-
180.0	78.8	106.0	2.86	11542	22325.02	53.84	210.61	-
190.0	62.5	116.0	3.02	12325	23003.58	67.86	198.31	-
200.0	74.1	126.0	3.16	12940	23575.87	57.23	187.11	-
209.0	72.2	135.0	3.28	13555	24104.19	58.70	178.55	-

BIT NUMBER	2	IADC CODE	111	INTERVAL	209.0-	806.0
HTC OSC3AJ		SIZE	17.500	NOZZLES	20	20 20
COST	4442.00	TRIP TIME	3.7	BIT RUN		597.0
TOTAL HOURS	12.77	TOTAL TURNS	106641	CONDITION	T2 B2 G0.000	

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
210.0	94.7	1.0	0.01	53	20178.47	45	20178	-
220.0	194.6	11.0	0.06	302	20396.41	22	1854	-
230.0	181.8	21.0	0.12	568	20629.70	23.33	982.37	-
240.0	53.7	31.0	0.30	1490	21419.00	78.93	690.94	-
250.0	77.1	41.0	0.43	2325	21969.15	55.02	535.83	-
260.0	145.6	51.0	0.50	2943	22260.52	29.14	436.48	-
270.0	90.5	61.0	0.61	3938	22729.39	46.89	372.61	-
280.0	152.6	71.0	0.68	4503	23007.24	27.79	324.05	-
290.0	137.9	81.0	0.75	5112	23314.72	30.75	287.84	-
300.0	153.8	91.0	0.82	5658	23590.38	27.57	259.23	-
310.0	171.4	101.0	0.87	6148	23837.77	24.74	236.02	-
320.0	148.1	111.0	0.94	6715	24124.04	28.63	217.33	-
330.0	137.2	121.0	1.01	7328	24433.11	30.91	201.93	-
340.0	125.2	131.0	1.09	7998	24771.81	33.87	189.10	-
350.0	45.9	141.0	1.31	9828	25695.40	92.36	182.24	-
360.0	45.8	151.0	1.53	11661	26620.76	92.54	176.30	-
370.0	69.9	161.0	1.67	12862	27227.46	60.67	169.11	-
380.0	81.8	171.0	1.79	13889	27745.81	51.83	162.26	-
390.0	74.5	181.0	1.93	15016	28314.81	56.90	156.44	-

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
400.0	65.1	191.0	2.08	16307	28966.44	65.16	151.66	-
410.0	28.9	201.0	2.43	19216	30435.28	146.88	151.42	-
420.0	60.9	211.0	2.59	20595	31131.51	69.62	147.54	-
430.0	86.5	221.0	2.71	21566	31621.58	49.01	143.08	-
440.0	81.1	231.0	2.83	22602	32144.64	52.31	139.15	-
450.0	61.5	241.0	2.99	23968	32834.39	68.98	136.24	-
460.0	52.4	251.0	3.19	25571	33643.71	80.93	134.04	-
470.0	67.3	261.0	3.33	26819	34273.97	63.03	131.32	-
480.0	59.1	271.0	3.50	28240	34991.41	71.74	129.12	-
490.0	58.2	281.0	3.68	29684	35720.63	72.92	127.12	-
500.0	39.8	291.0	3.93	31797	36787.36	106.67	126.42	-
510.0	61.6	301.0	4.09	33160	37475.34	68.80	124.50	-
520.0	55.1	311.0	4.27	34684	38244.61	76.93	122.97	-
530.0	47.7	321.0	4.48	36445	39134.04	88.94	121.91	-
540.0	69.4	331.0	4.62	37656	39745.45	61.14	120.08	-
550.0	81.4	341.0	4.75	38688	40266.58	52.11	118.08	-
560.0	49.0	351.0	4.95	40403	41132.10	86.55	117.19	-
570.0	35.8	361.0	5.23	42750	42317.23	118.51	117.22	+
580.0	35.5	371.0	5.51	45116	43511.77	119.45	117.28	+
590.0	54.3	381.0	5.70	46664	44293.33	78.16	116.26	-
600.0	40.0	391.0	5.95	48762	45352.40	105.91	115.99	-
610.0	36.2	401.0	6.22	51083	46524.57	117.22	116.02	+
620.0	36.8	411.0	6.49	53365	47676.70	115.21	116.00	-
630.0	44.7	421.0	6.72	55244	48625.04	94.83	115.50	-
640.0	52.6	431.0	6.91	56842	49431.92	80.69	114.69	-
650.0	34.7	441.0	7.20	59263	50654.35	122.24	114.86	+
660.0	33.6	451.0	7.49	61760	51914.87	126.05	115.11	+
670.0	25.2	461.0	7.89	65099	53600.67	168.58	116.27	+
680.0	24.0	471.0	8.31	68601	55368.93	176.83	117.56	+
690.0	28.4	481.0	8.66	71562	56863.88	149.50	118.22	+
700.0	31.0	491.0	8.98	74276	58233.96	137.01	118.60	+
710.0	31.1	501.0	9.31	76980	59599.33	136.54	118.96	+
720.0	27.5	511.0	9.67	80038	61143.42	154.41	119.65	+
730.0	29.0	521.0	10.01	82934	62605.39	146.20	120.16	+
740.0	27.2	531.0	10.38	86026	64166.31	156.09	120.84	+
750.0	27.8	541.0	10.74	89051	65693.57	152.73	121.43	+
760.0	26.4	551.0	11.12	92308	67298.96	160.54	122.14	+
770.0	28.2	561.0	11.48	95395	68803.73	150.48	122.64	+
780.0	28.3	571.0	11.83	98473	70304.18	150.05	123.12	+
790.0	29.1	581.0	12.17	101465	71762.62	145.84	123.52	+
800.0	24.7	591.0	12.58	104983	73477.87	171.52	124.33	+
806.0	31.5	597.0	12.77	106641	74286.01	134.69	124.43	+

BIT NUMBER	3	IADC CODE	114	INTERVAL	806.0- 1751.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 18
COST	2201.00	TRIP TIME	5.7	BIT RUN	945.0
TOTAL HOURS	22.01	TOTAL TURNS	196061	CONDITION'	T4 B6 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
810.0	17.9	4.0	0.22	1200	27322.64	237	6831	-
820.0	20.3	14.0	0.72	4780	29407.28	208	2101	-
830.0	27.5	24.0	1.08	7689	30948.17	154	1290	-
840.0	28.9	34.0	1.42	10799	32413.67	146.55	953.34	-
850.0	35.6	44.0	1.70	13324	33603.51	118.98	763.72	-
860.0	36.8	54.0	1.98	15766	34754.47	115.10	643.60	-
870.0	47.5	64.0	2.19	17661	35647.44	89.30	556.99	-
880.0	47.7	74.0	2.40	19546	36535.69	88.83	493.73	-
890.0	47.4	84.0	2.61	21444	37429.84	89.41	445.59	-
900.0	44.6	94.0	2.83	23464	38381.70	95.19	408.32	-
910.0	48.8	104.0	3.04	25309	39251.11	86.94	377.41	-
920.0	45.0	114.0	3.26	27309	40193.55	94.24	352.58	-
930.0	38.7	124.0	3.52	29637	41290.52	109.70	332.99	-
940.0	46.7	134.0	3.73	31564	42198.81	90.83	314.92	-
950.0	43.1	144.0	3.96	33653	43183.07	98.43	299.88	-
960.0	46.1	154.0	4.18	35604	44102.54	91.95	286.38	-
970.0	44.9	164.0	4.40	37607	45046.17	94.36	274.67	-
980.0	43.5	174.0	4.63	39674	46020.42	97.43	264.49	-
990.0	51.0	184.0	4.83	41437	46851.34	83.09	254.63	-
1000.0	43.4	194.0	5.06	43510	47828.12	97.68	246.54	-
1010.0	48.0	204.0	5.27	45387	48712.43	88.43	238.79	-
1020.0	47.6	214.0	5.48	47279	49604.22	89.18	231.80	-
1030.0	49.0	224.0	5.68	49117	50470.09	86.59	225.31	-
1040.0	51.1	234.0	5.88	50879	51300.62	83.05	219.23	-
1050.0	48.0	244.0	6.09	52754	52184.16	88.35	213.87	-
1060.0	52.2	254.0	6.28	54477	52995.84	81.17	208.65	-
1070.0	51.9	264.0	6.47	56209	53812.23	81.64	203.83	-
1080.0	44.7	274.0	6.69	58224	54761.74	94.95	199.86	-
1090.0	50.5	284.0	6.89	60006	55601.30	83.96	195.78	-
1100.0	52.3	294.0	7.08	61726	56411.81	81.05	191.88	-
1110.0	50.6	304.0	7.28	63504	57249.40	83.76	188.32	-
1120.0	53.3	314.0	7.47	65194	58045.77	79.64	184.86	-
1130.0	52.0	324.0	7.66	66924	58860.98	81.52	181.67	-
1140.0	44.2	334.0	7.89	68961	59821.00	96.00	179.10	-
1150.0	47.2	344.0	8.10	70866	60718.75	89.77	176.51	-
1160.0	48.8	354.0	8.30	72708	61586.98	86.82	173.97	-
1170.0	49.9	364.0	8.50	74512	62436.75	84.98	171.53	-
1180.0	52.2	374.0	8.69	76237	63249.61	81.29	169.12	-
1190.0	41.0	384.0	8.94	78429	64282.76	103.32	167.40	-
1200.0	42.1	394.0	9.18	80567	65290.00	100.72	165.71	-
1210.0	41.7	404.0	9.42	82723	66305.85	101.59	164.12	-
1220.0	42.2	414.0	9.65	84854	67310.34	100.45	162.59	-
1230.0	46.0	424.0	9.87	86813	68233.15	92.28	160.93	-

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
1240.0	43.9	434.0	10.10	88863	69199.16	96.60	159.45	-
1250.0	45.7	444.0	10.32	90830	70126.29	92.71	157.94	-
1260.0	49.4	454.0	10.52	92650	70984.08	85.78	156.35	-
1270.0	50.1	464.0	10.72	94445	71829.92	84.58	154.81	-
1280.0	51.2	474.0	10.91	96203	72658.10	82.82	153.29	-
1290.0	53.3	484.0	11.10	97890	73453.28	79.52	151.76	-
1300.0	59.6	494.0	11.27	99401	74165.12	71.18	150.13	-
1310.0	59.9	504.0	11.44	100904	74873.14	70.80	148.56	-
1320.0	66.2	514.0	11.59	102264	75514.00	64.09	146.91	-
1330.0	59.2	524.0	11.76	103784	76230.26	71.63	145.48	-
1340.0	59.4	534.0	11.92	105299	76944.16	71.39	144.09	-
1350.0	58.0	544.0	12.10	106851	77675.73	73.16	142.79	-
1360.0	55.6	554.0	12.28	108471	78439.11	76.34	141.59	-
1370.0	54.7	564.0	12.46	110116	79214.27	77.52	140.45	-
1380.0	55.0	574.0	12.64	111751	79984.72	77.04	139.35	-
1390.0	50.6	584.0	12.84	113531	80823.49	83.88	138.40	-
1400.0	48.9	594.0	13.04	115371	81690.54	86.70	137.53	-
1410.0	53.2	604.0	13.23	117063	82487.81	79.73	136.57	-
1420.0	58.9	614.0	13.40	118590	83207.60	71.98	135.52	-
1430.0	55.6	624.0	13.58	120210	83970.98	76.34	134.57	-
1440.0	46.7	634.0	13.79	122138	84879.26	90.83	133.88	-
1450.0	45.7	644.0	14.01	124107	85807.01	92.78	133.24	-
1460.0	43.2	654.0	14.25	126192	86789.51	98.25	132.71	-
1470.0	41.2	664.0	14.49	128377	87819.13	102.96	132.26	-
1480.0	45.1	674.0	14.71	130371	88759.04	93.99	131.69	-
1490.0	43.8	684.0	14.94	132424	89726.22	96.72	131.18	-
1500.0	45.6	694.0	15.16	134396	90655.71	92.95	130.63	-
1510.0	42.8	704.0	15.39	136501	91647.63	99.19	130.18	-
1520.0	47.1	714.0	15.60	138414	92548.84	90.12	129.62	-
1530.0	53.5	724.0	15.79	140097	93341.99	79.31	128.93	-
1540.0	46.6	734.0	16.01	142030	94252.63	91.06	128.41	-
1550.0	44.1	744.0	16.23	144072	95215.10	96.25	127.98	-
1560.0	43.7	754.0	16.46	146130	96184.64	96.95	127.57	-
1570.0	42.5	764.0	16.70	148247	97182.45	99.78	127.20	-
1580.0	42.4	774.0	16.93	150372	98183.80	100.13	126.85	-
1590.0	42.7	784.0	17.17	152480	99176.90	99.31	126.50	-
1600.0	37.5	794.0	17.43	154878	100307.05	113.01	126.33	-
1610.0	35.8	804.0	17.71	157394	101492.54	118.55	126.23	-
1620.0	37.6	814.0	17.98	159789	102621.40	112.89	126.07	-
1630.0	37.6	824.0	18.24	162181	103748.45	112.70	125.91	-
1640.0	40.4	834.0	18.49	164406	104796.92	104.85	125.66	-
1650.0	33.5	844.0	18.79	167096	106064.51	126.76	125.67	+
1660.0	32.7	854.0	19.10	169849	107361.55	129.70	125.72	+
1670.0	33.3	864.0	19.40	172549	108633.85	127.23	125.73	+
1680.0	35.9	874.0	19.67	175056	109815.44	118.16	125.65	-
1690.0	37.1	884.0	19.94	177484	110959.33	114.39	125.52	-
1700.0	33.6	894.0	20.24	180159	112219.85	126.05	125.53	+
1710.0	32.6	904.0	20.55	182921	113521.60	130.18	125.58	+
1720.0	30.8	914.0	20.87	185839	114896.39	137.48	125.71	+
1730.0	29.8	924.0	21.21	188859	116319.48	142.31	125.89	+

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
1740.0	28.8	934.0	21.56	191989	117794.41	147.49	126.12	+
1750.0	28.1	944.0	21.91	195191	119303.50	150.91	126.38	+
1751.0	10.3	945.0	22.01	196061	119713.46	409.96	126.68	+

BIT NUMBER 4 IADC CODE 437 INTERVAL 1751.0- 1837.0
 HTC J11 SIZE 12.250 NOZZLES 16 16 16
 COST 6788.00 TRIP TIME 5.9 BIT RUN 86.0
 TOTAL HOURS 7.07 TOTAL TURNS 48632 CONDITION T1 B1 G0.000

DEPTH	ROP	BIT RUN	HOURS	URNS	TOTAL COST	ICOST	CCOST	I-C
1760.0	7.3	9.0	1.24	9674	37070.05	584	4119	-
1770.0	10.9	19.0	2.16	16182	40952.92	388	2155	-
1780.0	8.2	29.0	3.37	24218	46116.34	516	1590	-
1790.0	9.5	39.0	4.42	31152	50571.74	446	1297	-
1800.0	13.3	49.0	5.17	36100	53751.32	318	1097	-
1810.0	13.4	59.0	5.92	41030	56919.11	316.78	964.73	-
1820.0	20.0	69.0	6.42	44337	59044.32	212.52	855.71	-
1830.0	19.2	79.0	6.94	47774	61253.17	220.89	775.36	-
1837.0	53.8	86.0	7.07	48632	61804.50	78.76	718.66	-

BIT NUMBER	4	IADC CODE	4	INTERVAL	1837.9- 1847.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.6
TOTAL HOURS	2.38	TOTAL TURNS	17130	CONDITION	TO R0 G0.250

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1838.0	90.0	0.1	0.00	9	25026.61	47	250266	-
1840.0	15.2	2.1	0.13	1036	25585.01	279	12183	-
1842.0	5.8	4.1	0.48	3730	27050.12	733	6598	-
1844.0	3.5	6.1	1.06	8242	29503.42	1227	4837	-
1846.0	4.4	8.1	1.51	11394	31427.18	962	3880	-
1847.5	1.7	9.6	2.38	17130	35112.73	2457	3658	-

BIT NUMBER	4	IADC CODE	4	INTERVAL	1847.5- 1856.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.0
TOTAL HOURS	3.07	TOTAL TURNS	22329	CONDITION	TO R0 G0.300

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1848.0	12.0	10.1	2.42	17443	35292.19	353	3494	-
1850.0	9.9	12.1	2.62	18953	36146.28	427	2987	-
1852.0	13.6	14.1	2.77	20055	36769.47	312	2608	-
1854.0	18.3	16.1	2.88	20876	37233.62	232	2313	-
1856.0	13.9	18.1	3.02	21953	37842.68	305	2091	-
1856.5	10.0	18.6	3.07	22329	38055.51	426	2046	-

BIT NUMBER	4	IADC CODE	4	INTERVAL	1856.5- 1861.6
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	5.1
TOTAL HOURS	7.47	TOTAL TURNS	54023	CONDITION	TO R0 G0.350

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1858.0	3.6	20.1	3.49	25347	39819.46	1185	1981	-
1860.0	0.9	22.1	5.79	41889	49563.15	4872	2243	+
1861.6	0.9	23.7	7.47	54023	56710.42	4467	2393	+

BIT NUMBER	5	IADC CODE	437	INTERVAL	1861.6- 2062.0
HTC J11		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	6.4	BIT RUN	200.4
TOTAL HOURS	22.32	TOTAL TURNS	147694	CONDITION	T8 R4 G0.125

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
1870.0	29.6	8.4	0.28	2040	35132.11	143	4182	-
1880.0	18.4	18.4	0.83	5940	37438.75	231	2035	-
1890.0	30.0	28.4	1.16	8240	38852.41	141	1368	-
1900.0	9.3	38.4	2.24	15685	43427.98	458	1131	-
1910.0	12.5	48.4	3.04	21212	46825.49	339.75	967.47	-
1920.0	8.9	58.4	4.17	28560	51607.22	478.17	883.69	-
1930.0	5.9	68.4	5.88	39127	58849.91	724.27	860.38	-
1940.0	4.8	78.4	7.95	54049	67639.38	878.95	862.75	+
1950.0	4.8	88.4	10.01	68921	76399.40	876.00	864.25	+
1960.0	33.1	98.4	10.32	71013	77682.30	128.29	789.45	-
1970.0	40.1	108.4	10.57	72807	78739.02	105.67	726.37	-
1980.0	20.2	118.4	11.06	76377	80841.85	210.28	682.79	-
1990.0	4.4	128.4	13.34	92817	90525.46	968.36	705.03	+
2000.0	26.0	138.4	13.73	95581	92153.54	162.81	665.85	-
2010.0	8.1	148.4	14.97	102646	97400.60	524.71	656.34	-
2020.0	6.8	158.4	16.44	112631	103652.54	625.19	654.37	-
2030.0	6.6	168.4	17.94	121455	110030.36	637.78	653.39	-
2040.0	28.2	178.4	18.30	124011	111535.92	150.56	625.20	-
2050.0	10.2	188.4	19.28	131049	115681.49	414.56	614.02	-
2060.0	7.3	198.4	20.64	139603	121459.86	577.84	612.20	-
2062.0	1.2	200.4	22.32	147694	128608.30	3574	642	+

BIT NUMBER	6	IADC CODE	517	INTERVAL	2062.0- 2477.6
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.3	BIT-RUN	415.6
TOTAL HOURS	40.25	TOTAL TURNS	180878	CONDITION	T3 B3 G0.125

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2070.0	7.5	8.0	0.70	3356	43393.59	565	5424	-
2080.0	14.7	18.0	1.38	6016	46275.63	288	2571	-
2090.0	10.1	28.0	2.38	9670	50489.54	421	1803	-
2100.0	23.9	38.0	2.80	11202	52262.51	177	1375	-
2110.0	26.2	48.0	3.18	12497	53883.52	162	1123	-
2120.0	27.1	58.0	3.55	13750	55445.62	156.21	955.96	-
2130.0	32.9	68.0	3.85	14848	56734.41	128.88	834.33	-
2140.0	12.9	78.0	4.63	17489	60034.14	329.97	769.67	-
2150.0	13.1	88.0	5.39	21040	63269.08	323.49	718.97	-
2160.0	20.2	98.0	5.89	23466	65371.91	210.28	667.06	-
2170.0	21.4	108.0	6.35	25753	67355.76	198.38	623.66	-
2180.0	31.9	118.0	6.67	27322	68684.61	132.88	582.07	-
2190.0	22.7	128.0	7.11	29562	70553.00	186.84	551.20	-
2200.0	8.5	138.0	8.28	35476	75525.57	497.26	547.29	-
2210.0	6.3	148.0	9.88	43422	82300.57	677.50	556.08	+
2220.0	8.5	158.0	11.05	49307	87276.68	497.61	552.38	-
2230.0	7.4	168.0	12.41	55946	93020.88	574.42	553.70	+
2240.0	16.7	178.0	13.01	58895	95563.12	254.22	536.87	-
2250.0	24.5	188.0	13.41	60919	97296.04	173.29	517.53	-
2260.0	22.8	198.0	13.85	63159	99156.19	186.01	500.79	-
2270.0	8.5	208.0	15.04	69158	104173.53	501.73	500.83	+
2280.0	10.0	218.0	16.03	73599	108396.86	422.33	497.23	-
2290.0	9.6	228.0	17.07	77909	112805.14	440.83	494.76	-
2300.0	9.2	238.0	18.16	82953	117404.32	459.92	493.30	-
2310.0	10.0	248.0	19.15	87682	121637.08	423.28	490.47	-
2320.0	10.9	258.0	20.07	92243	125543.16	390.61	486.60	-
2330.0	13.3	268.0	20.82	95269	128723.91	318.08	480.31	-
2340.0	6.2	278.0	22.43	102688	135543.67	681.98	487.57	+
2350.0	12.1	288.0	23.26	106549	139062.53	351.89	482.86	-
2360.0	7.5	298.0	24.60	113129	144720.73	565.82	485.64	+
2370.0	10.3	308.0	25.57	117392	148833.32	411.26	483.23	-
2380.0	6.5	318.0	27.11	124771	155369.17	653.59	488.58	+
2390.0	13.4	328.0	27.86	128020	158541.68	317.25	483.36	-
2400.0	11.7	338.0	28.71	131492	162151.24	360.96	479.74	-
2410.0	15.7	348.0	29.34	133947	164850.16	269.89	473.71	-
2420.0	7.4	358.0	30.69	139247	170560.20	571.00	476.43	+
2430.0	7.7	368.0	31.99	145325	176095.88	553.57	478.52	+
2440.0	3.9	378.0	34.54	155656	186912.79	1082	494	+
2450.0	9.5	388.0	35.60	159707	191370.55	445.78	493.22	-
2460.0	9.3	398.0	36.67	164896	195940.23	456.97	492.31	-
2470.0	5.8	408.0	38.41	172752	203298.36	735.81	498.28	+
2477.6	4.1	415.6	40.25	180878	211106.51	1027	508	+

BIT NUMBER	7	IADC CODE	517	INTERVAL	2477.6- 2636.0
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.6	BIT RUN	158.4
TOTAL HOURS	20.78	TOTAL TURNS	90559	CONDITION	T4 B8 G0.250

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2480.0	2.6	2.4	0.92	2691	42934.28	1631	17889	-
2490.0	11.6	12.4	1.78	6519	46578.00	364	3756	-
2500.0	10.1	22.4	2.77	10967	50781.31	420	2267	-
2510.0	13.8	32.4	3.50	14251	53858.39	308	1662	-
2520.0	12.8	42.4	4.28	17842	57182.86	332	1349	-
2530.0	12.2	52.4	5.10	21500	60668.73	349	1158	-
2540.0	6.5	62.4	6.64	28497	67189.26	652	1077	-
2550.0	7.2	72.4	8.03	34599	73072.47	588	1009	-
2560.0	5.8	82.4	9.75	41896	80355.21	728.27	975.18	-
2570.0	5.1	92.4	11.70	50236	88619.27	826.41	959.08	-
2580.0	7.4	102.4	13.04	56348	94324.60	570.53	921.14	-
2590.0	7.3	112.4	14.42	62898	100159.51	583.49	891.10	-
2600.0	4.8	122.4	16.50	73283	108983.14	882.36	890.39	-
2610.0	7.3	132.4	17.87	79630	114785.07	580.19	866.96	-
2620.0	13.5	142.4	18.61	82831	117935.19	315.01	828.20	-
2630.0	8.1	152.4	19.85	87556	123198.74	526.36	808.39	-
2636.0	6.4	158.4	20.78	90559	127151.11	658.73	802.72	-

BIT NUMBER	8	IADC CODE	537	INTERVAL	2636.0- 2901.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.2	BIT RUN	265.0
TOTAL HOURS	52.43	TOTAL TURNS	214055	CONDITION	T5 B8 G0.250

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2640.0	4.4	4.0	0.91	2602	45284.68	968	11321	-
2650.0	4.0	14.0	3.44	11862	55986.14	1070	3999	-
2660.0	5.8	24.0	5.15	18410	63262.99	728	2636	-
2670.0	11.1	34.0	6.05	22165	67084.60	382	1973	-
2680.0	7.0	44.0	7.49	28059	73166.90	608	1663	-
2690.0	10.0	54.0	8.49	32143	77417.33	425	1434	-
2700.0	7.4	64.0	9.85	37641	83168.59	575	1300	-
2710.0	3.5	74.0	12.74	50831	95445.11	1228	1290	-
2720.0	5.0	84.0	14.74	59629	103922.41	848	1237	-
2730.0	5.3	94.0	16.64	68355	111978.09	806	1191	-
2740.0	3.8	104.0	19.30	80072	123283.89	1131	1185	-
2750.0	4.3	114.0	21.64	89639	133186.62	990	1168	-
2760.0	10.2	124.0	22.62	94238	137331.61	414	1108	-
2770.0	4.3	134.0	24.95	102858	147241.42	991	1099	-
2780.0	4.2	144.0	27.36	110763	157431.60	1019	1093	-
2790.0	4.1	154.0	29.77	118671	167664.62	1023	1089	-

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2800.0	5.2	164.0	31.70	126547	175873.93	821	1072	-
2810.0	8.0	174.0	32.95	131747	181174.00	530	1041	-
2820.0	3.6	184.0	35.70	143429	192800.23	1163	1048	+
2830.0	5.7	194.0	37.46	150617	200271.46	747	1032	-
2840.0	4.7	204.0	39.59	159842	209303.61	903	1026	-
2850.0	5.6	214.0	41.38	166782	216926.81	762	1014	-
2860.0	3.7	224.0	44.11	177819	228475.29	1155	1020	+
2870.0	3.9	234.0	46.68	188781	239379.37	1090	1023	+
2880.0	3.9	244.0	49.21	199742	250123.24	1074	1025	+
2890.0	5.9	254.0	50.92	207285	257344.72	722	1013	-
2900.0	8.8	264.0	52.05	212269	262165.32	482.06	993.05	-
2901.0	2.6	265.0	52.43	214055	263774.54	1609	995	+

BIT NUMBER	9	IADC CODE	537	INTERVAL	2901.0- 3021.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.4	BIT RUN	120.0
TOTAL HOURS	22.14	TOTAL TURNS	92542	CONDITION	T2 B2 G0.000

DEPTH	ROP	BIT RUN	HOURS	TURNS	TOTAL COST	ICOST	CCOST	I-C
2910.0	3.1	9.0	2.86	10551	54408.33	1350	6045	-
2920.0	4.3	19.0	5.19	20576	64283.97	988	3383	-
2930.0	8.4	29.0	6.38	25197	69316.62	503	2390	-
2940.0	6.7	39.0	7.86	31244	75601.55	628	1939	-
2950.0	7.2	49.0	9.26	37500	81528.35	593	1664	-
2960.0	6.5	59.0	10.80	44185	88044.17	652	1492	-
2970.0	4.2	69.0	13.17	54585	98105.95	1006	1422	-
2980.0	6.7	79.0	14.65	61024	104403.83	630	1322	-
2990.0	7.5	89.0	15.99	66453	110083.24	568	1237	-
3000.0	5.2	99.0	17.91	74707	118197.68	811	1194	-
3010.0	6.5	109.0	19.45	81124	124758.27	656	1145	-
3020.0	3.9	119.0	22.02	92020	135649.40	1089	1140	-
3021.0	8.5	120.0	22.14	92542	136147.72	498	1135	-

(e). COMPUTER DATA LISTING : LIST C

INTERVAL 10m averages.

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.

H.H.P. Bit hydraulic horsepower.

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

IMPACT FORCE Bit impact force, in foot-pounds per
second squared.

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

BIT NUMBER	1	IADC CODE	111	INTERVAL	74.0- 209.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	18 18 18
COST	0.00	TRIP TIME	2.4	BIT RUN	135.0
TOTAL HOURS	3.28	TOTAL TURNS	13555	CONDITION	T2 B5 G0.000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
80.0	363	306.0	187.8	61.4	40	0.07	253	47
90.0	368	308.9	193.1	62.5	41	0.08	260	48
100.0	394	365.9	220.8	60.3	51	0.10	297	51
110.0	882	892.2	1109.8	124.4	571	1.08	1492	115
120.0	863	951.0	1061.9	111.7	535	1.01	1428	113
130.0	941	1086.7	1260.8	116.0	692	1.30	1695	123
140.0	963	1154.7	1321.9	114.5	743	1.40	1778	126
150.0	952	1183.5	1291.3	109.1	717	1.35	1736	125
160.0	964	1253.4	1323.1	105.6	744	1.40	1779	126
170.0	958	1209.1	1308.3	108.2	731	1.38	1759	125
180.0	959	1222.9	1310.6	107.2	733	1.38	1762	125
190.0	954	1215.3	1298.0	106.8	723	1.36	1745	125
200.0	964	1235.6	1324.5	107.2	745	1.40	1781	126
209.0	970	1250.0	1339.8	107.2	758	1.43	1802	127

BIT NUMBER	2	IADC CODE	111	INTERVAL	209.0- 806.0
HTC OSC3AJ		SIZE	17.500	NOZZLES	20 20 20
COST	4442.00	TRIP TIME	3.7	BIT RUN	597.0
TOTAL HOURS	12.77	TOTAL TURNS	106641	CONDITION	T2 B2 G0.000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
210.0	964	1747.8	868.1	49.7	488	2.03	1441	102
220.0	950	1730.5	843.2	48.7	467	1.94	1400	101
230.0	939	1680.2	824.5	49.1	452	1.88	1369	100
240.0	825	1396.5	635.9	45.5	306	1.27	1056	87
250.0	946	1737.9	837.6	48.2	463	1.92	1390	100
260.0	964	1802.5	868.8	48.2	489	2.03	1442	102
270.0	967	1780.0	873.9	49.1	493	2.05	1451	102
280.0	957	1798.1	856.2	47.6	478	1.99	1421	101
290.0	962	1813.4	865.1	47.7	485	2.02	1436	102
300.0	961	1847.3	863.5	46.7	484	2.01	1434	102
310.0	947	1781.0	838.4	47.1	463	1.93	1392	100
320.0	949	1813.1	841.3	46.4	466	1.94	1397	101
330.0	965	1860.0	870.0	46.8	490	2.04	1444	102
340.0	958	1890.8	857.6	45.4	479	1.99	1424	101
350.0	937	1818.3	820.1	45.1	448	1.86	1361	99
360.0	940	1797.0	825.5	45.9	453	1.88	1370	100
370.0	960	1879.9	861.0	45.8	482	2.00	1429	102
380.0	945	1884.0	835.8	44.4	461	1.92	1388	100
390.0	960	1920.9	861.0	44.8	482	2.00	1429	102

DEPTH	FLOW RATE	PSP	PRIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
400.0	954	1884.1	851.2	45.2	474	1.97	1413	101
410.0	974	1938.9	886.9	45.7	504	2.10	1472	103
420.0	957	1927.4	856.5	44.4	478	1.99	1422	101
430.0	966	1956.8	872.5	44.6	492	2.04	1448	102
440.0	965	1946.5	870.7	44.7	490	2.04	1446	102
450.0	961	1968.7	863.3	43.9	484	2.01	1433	102
460.0	967	1976.6	874.9	44.3	494	2.05	1453	103
470.0	972	2042.0	882.6	43.2	500	2.08	1465	103
480.0	968	2006.9	876.8	43.7	495	2.06	1456	103
490.0	946	1967.8	837.1	42.5	462	1.92	1390	100
500.0	967	2032.0	884.4	43.5	499	2.07	1468	102
510.0	966	2048.6	883.4	43.1	498	2.07	1467	102
520.0	977	2035.0	913.6	44.9	521	2.17	1517	104
530.0	962	2033.4	895.7	44.1	503	2.09	1487	102
540.0	966	2064.7	903.6	43.8	509	2.12	1500	102
550.0	969	2076.7	908.6	43.8	514	2.14	1508	103
560.0	960	2099.7	891.0	42.4	499	2.07	1479	102
570.0	941	2006.3	857.0	42.7	471	1.96	1423	100
580.0	981	2120.1	930.7	43.9	533	2.21	1545	104
590.0	972	2109.6	913.9	43.3	518	2.15	1517	103
600.0	974	2118.7	918.2	43.3	522	2.17	1524	103
610.0	969	2107.2	908.1	43.1	513	2.13	1508	103
620.0	960	2134.9	891.0	41.7	499	2.07	1479	102
630.0	960	2200.7	891.6	40.5	499	2.08	1480	102
640.0	975	2150.0	919.1	42.7	523	2.17	1526	103
650.0	953	2138.0	888.3	41.5	494	2.05	1475	101
660.0	967	2155.7	915.7	42.5	517	2.15	1520	103
670.0	940	2023.4	863.7	42.7	473	1.97	1434	100
680.0	965	2130.7	911.7	42.8	513	2.13	1514	102
690.0	976	2201.5	931.3	42.3	530	2.20	1546	103
700.0	966	2150.1	913.4	42.5	515	2.14	1516	102
710.0	964	2144.6	909.8	42.4	512	2.13	1510	102
720.0	969	2180.5	918.3	42.1	519	2.16	1525	103
730.0	966	2140.7	913.6	42.7	515	2.14	1517	102
740.0	966	2151.1	912.9	42.4	514	2.14	1516	102
750.0	962	2170.3	905.7	41.7	508	2.11	1504	102
760.0	934	2209.4	853.2	38.6	465	1.93	1416	99
770.0	968	2213.2	916.9	41.4	518	2.15	1522	103
780.0	954	2209.9	891.4	40.3	496	2.06	1480	101
790.0	958	2230.8	897.5	40.2	501	2.08	1490	101
800.0	958	2239.2	897.5	40.1	502	2.09	1490	101
806.0	964	2250.7	909.7	40.4	512	2.13	1510	102

BIT NUMBER	3	IADC CODE	114	INTERVAL	806.0- 1751.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 18
COST	2201.00	TRIP TIME	5.7	BIT RUN	945.0
TOTAL HOURS	22.01	TOTAL TURNS	196061	CONDITION	T4 B6 G0.000

DEPTH	FLOW RATE	PSP	PRIT	ZPSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
810.0	853	2523.5	1500.2	59.4	747	6.34	1735	130
820.0	856	2490.1	1476.6	59.3	737	6.26	1708	130
830.0	870	2516.5	1526.3	60.7	775	6.57	1765	132
840.0	932	2805.7	1751.8	62.4	953	8.08	2026	142
850.0	925	2860.7	1725.4	60.3	931	7.90	1996	141
860.0	928	2882.8	1737.5	60.3	941	7.99	2010	141
870.0	930	2856.0	1743.1	61.0	946	8.02	2016	141
880.0	932	2871.3	1752.1	61.0	953	8.09	2026	142
890.0	922	2859.4	1714.6	60.0	923	7.83	1983	140
900.0	925	2863.0	1726.6	60.3	932	7.91	1997	141
910.0	921	2866.4	1709.9	59.7	919	7.80	1978	140
920.0	914	2809.2	1682.7	59.9	897	7.61	1946	139
930.0	925	2800.0	1723.6	61.6	930	7.89	1993	141
940.0	924	2783.9	1720.4	61.8	927	7.87	1990	141
950.0	922	2810.6	1712.5	60.9	921	7.81	1981	140
960.0	925	2791.1	1724.6	61.8	931	7.90	1995	141
970.0	925	2871.6	1726.3	60.1	932	7.91	1997	141
980.0	925	2803.7	1724.0	61.5	930	7.89	1994	141
990.0	920	2831.2	1705.0	60.2	915	7.76	1972	140
1000.0	911	2832.4	1674.8	59.1	891	7.56	1937	139
1010.0	909	2896.3	1665.3	57.5	883	7.49	1926	138
1020.0	905	2845.0	1652.4	58.1	873	7.41	1911	138
1030.0	920	2904.0	1705.3	58.7	915	7.76	1972	140
1040.0	903	2861.7	1644.5	57.5	867	7.35	1902	137
1050.0	894	2847.3	1612.2	56.6	841	7.14	1865	136
1060.0	893	2860.9	1607.3	56.2	837	7.10	1859	136
1070.0	887	2871.7	1587.9	55.3	822	6.98	1837	135
1080.0	883	2878.5	1573.0	54.6	811	6.88	1819	134
1090.0	871	2868.2	1529.2	53.3	777	6.59	1769	132
1100.0	880	2876.3	1562.3	54.3	802	6.81	1807	134
1110.0	875	2860.1	1543.5	54.0	788	6.69	1785	133
1120.0	873	2842.0	1536.8	54.1	783	6.64	1777	133
1130.0	868	2849.3	1517.8	53.3	768	6.52	1755	132
1140.0	855	2850.0	1472.6	51.7	734	6.23	1703	130
1150.0	873	2897.3	1535.8	53.0	782	6.64	1776	133
1160.0	867	2895.3	1514.9	52.3	766	6.50	1752	132
1170.0	863	2872.8	1502.8	52.3	757	6.42	1738	131
1180.0	869	2838.6	1522.7	53.6	772	6.55	1761	132
1190.0	854	2865.5	1470.4	51.3	733	6.22	1701	130
1200.0	869	2900.3	1523.7	52.5	773	6.56	1762	132
1210.0	860	2860.9	1491.0	52.1	748	6.35	1724	131
1220.0	867	2931.9	1514.8	51.7	766	6.50	1752	132
1230.0	854	2868.3	1469.0	51.2	732	6.21	1699	130

DEPTH	FLOW RATE	PSP	PBIT	ZPSP	HHP	HHP/sqin	IMPACT FORCE	JET VELOCITY
1240.0	867	2907.5	1514.0	52.1	765	6.49	1751	132
1250.0	863	2852.5	1500.8	52.6	755	6.41	1736	131
1260.0	871	2913.8	1530.8	52.5	778	6.60	1770	133
1270.0	868	2859.6	1517.3	53.1	768	6.52	1755	132
1280.0	869	2868.8	1523.8	53.1	773	6.56	1762	132
1290.0	876	2937.2	1548.3	52.7	792	6.72	1791	133
1300.0	870	2925.0	1524.7	52.1	774	6.56	1763	132
1310.0	870	2954.8	1526.6	51.7	775	6.58	1766	132
1320.0	865	2969.9	1506.9	50.7	760	6.45	1743	132
1330.0	880	2936.0	1560.0	53.1	801	6.79	1804	134
1340.0	872	2961.2	1531.6	51.7	779	6.61	1771	133
1350.0	868	2992.6	1518.2	50.7	769	6.52	1756	132
1360.0	863	2957.4	1500.5	50.7	755	6.41	1735	131
1370.0	870	2957.2	1524.4	51.5	773	6.56	1763	132
1380.0	867	2981.1	1516.3	50.9	767	6.51	1754	132
1390.0	847	2937.2	1447.9	49.3	716	6.07	1675	129
1400.0	848	2921.4	1448.1	49.6	716	6.08	1675	129
1410.0	860	3020.9	1491.4	49.4	748	6.35	1725	131
1420.0	854	3033.7	1472.0	48.5	734	6.23	1702	130
1430.0	860	2969.1	1490.4	50.2	748	6.34	1724	131
1440.0	851	2987.4	1459.1	48.8	724	6.14	1687	129
1450.0	845	2971.2	1440.4	48.5	710	6.03	1666	129
1460.0	854	3040.1	1470.5	48.4	733	6.22	1701	130
1470.0	834	2960.8	1402.1	47.4	682	5.79	1622	127
1480.0	835	2911.6	1405.2	48.3	684	5.81	1625	127
1490.0	844	3006.6	1436.5	47.8	707	6.00	1661	128
1500.0	846	3025.2	1443.6	47.7	713	6.05	1670	129
1510.0	846	3039.5	1442.8	47.5	712	6.04	1669	129
1520.0	841	3019.2	1425.1	47.2	699	5.93	1648	128
1530.0	840	3025.6	1423.9	47.1	698	5.92	1647	128
1540.0	841	3090.3	1440.2	46.6	706	5.99	1666	128
1550.0	844	3077.1	1450.5	47.1	714	6.06	1678	128
1560.0	841	3027.3	1442.6	47.7	708	6.01	1668	128
1570.0	838	3082.7	1431.0	46.4	700	5.94	1655	127
1580.0	837	3072.8	1429.8	46.5	699	5.93	1654	127
1590.0	835	3070.3	1419.9	46.2	691	5.87	1642	127
1600.0	817	2953.4	1362.1	46.1	650	5.51	1575	124
1610.0	821	3032.9	1374.1	45.3	658	5.59	1589	125
1620.0	818	2983.2	1365.2	45.8	652	5.53	1579	124
1630.0	822	3007.5	1377.4	45.8	661	5.60	1593	125
1640.0	816	3017.3	1373.6	45.5	654	5.55	1589	124
1650.0	791	2826.0	1288.3	45.6	594	5.04	1490	120
1660.0	824	3000.8	1397.9	46.6	672	5.70	1617	125
1670.0	811	2937.8	1356.2	46.2	642	5.45	1569	123
1680.0	806	2890.7	1338.8	46.3	630	5.34	1548	123
1690.0	797	2884.2	1310.5	45.4	610	5.17	1516	121
1700.0	809	2936.8	1347.4	45.9	636	5.39	1558	123
1710.0	803	2871.5	1329.2	46.3	623	5.28	1537	122
1720.0	802	2901.5	1324.8	45.7	620	5.26	1532	122
1730.0	797	2937.4	1308.2	44.5	608	5.16	1513	121

DEPTH	FLOW RATE	PSP	PBIT	ZPSP	HHP	HHP/sqin	IMPACT FORCE	JET VELOCITY
1740.0	791	2921.6	1288.2	44.1	594	5.04	1490	120
1750.0	798	2919.6	1313.5	45.0	612	5.19	1519	121
1751.0	796	2902.0	1307.0	45.0	607	5.15	1512	121

BIT NUMBER	4	IADC CODE	437	INTERVAL	1751.0- 1837.0
HTC J11		SIZE	12.250	NOZZLES	16 16 16
COST	6788.00	TRIP TIME	5.9	BIT RUN	86.0
TOTAL HOURS	7.07	TOTAL TURNS	48632	CONDITION	T1 B1 G0.000

DEPTH	FLOW RATE	PSP	PBIT	ZPSP	HHP	HHP/sqin	IMPACT FORCE	JET VELOCITY
1760.0	773	2926.6	1457.8	49.8	657	5.58	1549	128
1770.0	767	2946.2	1436.1	48.7	643	5.45	1526	127
1780.0	775	2954.2	1467.6	49.7	664	5.63	1559	128
1790.0	782	3002.4	1492.5	49.7	681	5.78	1586	129
1800.0	777	2951.0	1473.4	49.9	668	5.67	1566	129
1810.0	773	2844.6	1458.8	51.3	658	5.58	1550	128
1820.0	774	2911.6	1463.6	50.3	661	5.61	1555	128
1830.0	772	2888.1	1453.9	50.3	655	5.55	1545	128
1837.0	770	2892.3	1448.5	50.1	651	5.52	1539	128

BIT NUMBER	4	IADC CODE	4	INTERVAL	1837.9- 1847.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.6
TOTAL HOURS	2.38	TOTAL TURNS	17130	CONDITION	T0 R0 G0.250

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1838.0	240	510.7	198.6	38.9	28	0.36	178	47
1840.0	209	470.8	150.9	32.1	18	0.24	135	41
1842.0	264	629.0	241.0	38.3	37	0.49	215	52
1844.0	267	638.8	246.3	38.6	38	0.50	220	53
1846.0	271	696.0	253.5	36.4	40	0.52	227	53
1847.5	280	707.7	271.3	38.3	44	0.58	242	55

BIT NUMBER	4	IADC CODE	4	INTERVAL	1847.5- 1856.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.0
TOTAL HOURS	3.07	TOTAL TURNS	22329	CONDITION	T0 R0 G0.300

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1848.0	335	812.9	386.4	47.5	75	0.98	345	66
1850.0	318	845.8	349.2	41.3	65	0.85	312	63
1852.0	278	725.7	265.9	36.6	43	0.56	238	55
1854.0	227	593.2	178.1	30.0	24	0.31	159	45
1856.0	215	549.8	159.1	28.9	20	0.26	142	42
1856.5	218	524.1	164.4	31.4	21	0.27	147	43

BIT NUMBER	4	IADC CODE	4	INTERVAL	1856.5- 1861.6
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	5.1
TOTAL HOURS	7.47	TOTAL TURNS	54023	CONDITION	T0 R0 G0.350

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1858.0	284	707.8	277.5	39.2	46	0.60	248	56
1860.0	270	668.1	251.3	37.6	40	0.52	225	53
1861.6	271	677.6	253.8	37.5	40	0.52	227	53

BIT NUMBER	5	IADC CODE	437	INTERVAL	1861.6- 2062.0
HTC J11		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	6.4	BIT RUN	200.4
TOTAL HOURS	22.32	TOTAL TURNS	147694	CONDITION	T8 B4 G0.125

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
1870.0	725	2954.0	1663.4	56.3	704	5.97	1553	137
1880.0	704	2976.8	1566.0	52.3	643	5.46	1462	133
1890.0	703	2972.6	1561.7	52.5	640	5.43	1458	132
1900.0	706	2970.0	1577.1	53.1	650	5.51	1473	133
1910.0	710	3023.3	1595.4	52.8	661	5.61	1490	134
1920.0	709	2990.4	1590.4	53.2	658	5.58	1485	134
1930.0	704	2924.7	1568.5	53.6	645	5.47	1465	133
1940.0	707	2943.7	1579.8	53.7	652	5.53	1475	133
1950.0	697	2922.8	1534.5	52.5	624	5.29	1433	131
1960.0	707	2910.4	1579.5	54.3	651	5.53	1475	133
1970.0	699	2876.6	1544.4	53.7	630	5.34	1442	132
1980.0	705	2933.5	1569.7	53.5	645	5.48	1466	133
1990.0	527	1754.5	877.7	50.0	270	2.29	820	99
2000.0	700	2904.5	1550.6	53.4	634	5.38	1448	132
2010.0	702	2888.0	1558.5	54.0	638	5.42	1455	132
2020.0	704	2938.1	1566.9	53.3	644	5.46	1463	133
2030.0	521	1713.5	857.1	50.0	260	2.21	800	98
2040.0	708	2919.6	1585.1	54.3	655	5.56	1480	133
2050.0	703	2927.3	1561.1	53.3	640	5.43	1458	132
2060.0	702	2936.5	1559.6	53.1	639	5.42	1456	132
2062.0	702	2941.6	1556.8	52.9	637	5.41	1454	132

BIT NUMBER	6	IADC CODE	517	INTERVAL	2062.0- 2477.6
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.3	BIT RUN	415.6
TOTAL HOURS	40.25	TOTAL TURNS	180878	CONDITION	T3 B3 G0.125

DEPTH	FLOW RATE	PSP	PRIT	XPSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2070.0	707	2958.8	1579.2	53.4	651	5.53	1475	133
2080.0	700	2895.0	1550.6	53.6	634	5.38	1448	132
2090.0	701	2909.6	1553.4	53.4	635	5.39	1451	132
2100.0	706	2963.6	1576.9	53.2	650	5.51	1473	133
2110.0	704	2916.7	1566.5	53.7	643	5.46	1463	133
2120.0	702	2936.7	1557.9	53.0	638	5.41	1455	132
2130.0	704	2945.1	1564.9	53.1	642	5.45	1461	133
2140.0	706	2936.9	1573.7	53.6	648	5.50	1470	133
2150.0	636	2457.1	1279.1	52.1	475	4.03	1194	120
2160.0	647	2544.6	1323.9	52.0	500	4.24	1236	122
2170.0	706	2976.7	1574.2	52.9	648	5.50	1470	133
2180.0	699	2932.1	1545.2	52.7	630	5.35	1443	132
2190.0	700	2943.3	1550.1	52.7	633	5.37	1448	132
2200.0	701	2923.3	1552.3	53.1	635	5.38	1450	132
2210.0	700	2944.2	1551.0	52.7	634	5.38	1448	132
2220.0	701	2928.6	1551.5	53.0	634	5.38	1449	132
2230.0	696	2894.4	1532.3	52.9	622	5.28	1431	131
2240.0	703	2938.4	1562.5	53.2	641	5.44	1459	132
2250.0	703	2931.1	1561.2	53.3	640	5.43	1458	132
2260.0	697	2946.4	1535.4	52.1	624	5.30	1434	131
2270.0	701	2927.8	1555.3	53.1	636	5.40	1452	132
2280.0	697	2920.2	1534.6	52.6	624	5.29	1433	131
2290.0	698	2934.0	1539.4	52.5	627	5.32	1438	131
2300.0	700	2958.9	1547.1	52.3	631	5.36	1445	132
2310.0	699	2939.9	1544.5	52.5	630	5.34	1442	132
2320.0	692	2884.7	1512.5	52.4	610	5.18	1412	130
2330.0	696	2910.8	1529.3	52.5	621	5.27	1428	131
2340.0	696	2895.9	1529.8	52.8	621	5.27	1429	131
2350.0	697	2943.5	1534.4	52.1	624	5.29	1433	131
2360.0	702	2976.9	1559.0	52.4	639	5.42	1456	132
2370.0	699	2949.5	1542.5	52.3	629	5.33	1440	132
2380.0	693	2919.8	1516.5	51.9	613	5.20	1416	130
2390.0	699	2971.4	1544.3	52.0	630	5.34	1442	132
2400.0	693	2955.0	1519.1	51.4	614	5.21	1419	131
2410.0	694	2958.6	1524.4	51.5	618	5.24	1424	131
2420.0	549	1916.8	952.9	49.7	305	2.59	890	103
2430.0	698	2967.5	1538.3	51.8	626	5.31	1437	131
2440.0	701	2918.7	1552.8	53.2	635	5.39	1450	132
2450.0	710	2884.8	1593.0	55.2	660	5.60	1488	134
2460.0	721	2930.7	1641.4	56.0	690	5.85	1533	136
2470.0	704	2938.1	1568.0	53.4	644	5.47	1464	133
2477.6	692	2828.9	1515.6	53.6	612	5.20	1415	130

BIT NUMBER	7	IADC CODE	517	INTERVAL	2477.6- 2636.0
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.6	BIT RUN	158.4
TOTAL HOURS	20.78	TOTAL TURNS	90559	CONDITION	T4 B8 G0.250

DEPTH	FLOW RATE	PSP	PBIT	XPSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2480.0	674	2919.7	1435.6	49.2	564	4.79	1341	127
2490.0	683	2882.6	1473.8	51.1	587	4.98	1376	129
2500.0	683	2876.4	1475.1	51.3	588	4.99	1377	129
2510.0	692	2879.4	1512.8	52.5	611	5.18	1413	130
2520.0	692	2942.4	1531.7	52.1	619	5.25	1430	130
2530.0	683	2846.8	1488.6	52.3	593	5.03	1390	129
2540.0	677	2819.5	1448.6	51.4	572	4.85	1353	128
2550.0	687	2861.5	1490.1	52.1	597	5.06	1392	129
2560.0	681	2855.5	1466.6	51.4	583	4.95	1370	128
2570.0	685	2882.4	1481.2	51.4	592	5.02	1383	129
2580.0	690	2936.7	1506.6	51.3	607	5.15	1407	130
2590.0	687	2913.6	1491.8	51.2	598	5.07	1393	129
2600.0	689	2900.9	1500.7	51.7	603	5.12	1401	130
2610.0	690	2881.5	1504.1	52.2	605	5.14	1405	130
2620.0	684	2930.9	1477.7	50.4	589	5.00	1380	129
2630.0	687	2916.2	1490.0	51.1	597	5.06	1391	129
2636.0	686	2928.8	1488.4	50.8	596	5.06	1390	129

BIT NUMBER	8	IADC CODE	537	INTERVAL	2636.0- 2901.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.2	BIT RUN	265.0
TOTAL HOURS	52.43	TOTAL TURNS	214055	CONDITION	T5 B8 G0.250

DEPTH	FLOW RATE	PSP	PBIT	XPSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2640.0	315	1620.4	313.6	19.4	58	0.49	293	59
2650.0	688	3010.7	1497.1	49.7	601	5.10	1398	130
2660.0	688	3022.2	1495.8	49.5	600	5.09	1397	130
2670.0	691	3043.3	1507.4	49.5	607	5.15	1408	130
2680.0	695	2968.8	1526.3	51.4	619	5.25	1425	131
2690.0	657	2766.9	1362.7	49.2	522	4.43	1272	124
2700.0	687	3035.0	1490.7	49.1	597	5.07	1392	129
2710.0	599	2348.6	1136.1	48.4	397	3.37	1061	113
2720.0	689	3064.5	1501.6	49.0	604	5.12	1402	130
2730.0	514	1804.5	835.8	46.3	251	2.13	780	97
2740.0	687	3023.2	1493.2	49.4	599	5.08	1394	129
2750.0	687	2997.3	1494.0	49.8	599	5.08	1395	130
2760.0	687	3045.5	1489.8	48.9	597	5.06	1391	129
2770.0	684	3013.8	1479.4	49.1	590	5.01	1381	129
2780.0	574	2197.9	1041.0	47.4	349	2.96	972	108
2790.0	686	2988.2	1489.5	49.8	597	5.06	1391	129

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2800.0	680	3026.4	1459.8	48.2	579	4.91	1363	128
2810.0	679	2964.6	1456.7	49.1	577	4.90	1360	128
2820.0	681	2991.9	1464.5	48.9	582	4.93	1368	128
2830.0	685	2990.7	1484.5	49.6	593	5.04	1386	129
2840.0	621	2463.0	1218.6	49.5	441	3.75	1138	117
2850.0	681	3055.5	1464.4	47.9	581	4.93	1367	128
2860.0	683	2988.4	1474.0	49.3	587	4.98	1376	129
2870.0	689	3023.5	1498.8	49.6	602	5.11	1400	130
2880.0	680	3016.1	1460.8	48.4	579	4.92	1364	128
2890.0	691	3015.6	1508.7	50.0	608	5.16	1409	130
2900.0	683	2974.9	1475.5	49.6	588	4.99	1378	129
2901.0	683	2981.9	1472.9	49.4	587	4.98	1375	129

BIT NUMBER	9	IADC CODE	537	INTERVAL	2901.0- 3021.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.4	BIT RUN	120.0
TOTAL HOURS	22.14	TOTAL TURNS	92542	CONDITION	T2 B2 G0.000

DEPTH	FLOW RATE	PSP	PBIT	%PSP	HHP	HHP/ sqin	IMPACT FORCE	JET VELOCITY
2910.0	683	3015.9	1474.8	48.9	588	4.99	1377	129
2920.0	685	3070.3	1483.8	48.3	593	5.03	1386	129
2930.0	680	3043.3	1462.3	48.0	580	4.92	1365	128
2940.0	680	3036.1	1462.6	48.2	580	4.92	1366	128
2950.0	681	3032.1	1464.7	48.3	582	4.94	1368	128
2960.0	682	3031.6	1470.3	48.5	585	4.96	1373	128
2970.0	681	3028.2	1464.0	48.3	581	4.93	1367	128
2980.0	668	2999.8	1412.2	47.1	551	4.67	1319	126
2990.0	534	2012.9	900.9	44.8	281	2.38	841	101
3000.0	670	3022.7	1420.8	47.0	556	4.72	1327	126
3010.0	681	2991.0	1464.7	49.0	582	4.94	1368	128
3020.0	533	1947.2	896.5	46.0	279	2.36	837	100
3021.0	532	1947.0	894.2	45.9	277	2.35	835	100

(f). COMPUTER DATA LISTING : LIST D

INTERVAL 10m averages.

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	74.0- 209.0
HTC OSC3AJ&26"HO		SIZE	26.000	NOZZLES	18 18 18
COST	0.00	TRIP TIME	2.4	BIT RUN	135.11
TOTAL HOURS	3.28	TOTAL TURNS	13555	CONDITION	T2 B5 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
80.0	73	0	363	4		4				
90.0	74	0	368	4		4				
100.0	52	27	394	5		5				
110.0	105	72	882	11		10				
120.0	89	84	863	11		10				
130.0	98	90	941	11		11				
140.0	100	93	963	12		11				
150.0	99	92	952	12		11		11		
160.0	99	94	964	12		11		11		
170.0	99	93	958	12		11		11		
180.0	99	93	959	12		11		11		
190.0	97	94	954	12		11		11		
200.0	99	94	964	12		11		11		
209.0	100	94	970	12		11		11		

BIT NUMBER	2	IADC CODE	111	INTERVAL	209.0- 806.0
HTC OSC3AJ		SIZE	17.500	NOZZLES	20 20 20
COST	4442.00	TRIP TIME	3.7	BIT RUN	597.0
TOTAL HOURS	12.77	TOTAL TURNS	106641	CONDITION	T2 B2 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
210.0	99	94	964		24		21			17
220.0	97	93	950	29	24		21		21	17
230.0	96	92	939	29	23		21		21	17
240.0	85	80	825	25	20		18		18	15
250.0	97	93	946	29	23		21		21	17
260.0	102	91	964	30	24		21		21	17
270.0	100	94	967	30	24		21		21	17
280.0	100	91	957	30	24		21		21	17
290.0	100	92	962	30	24		21		21	17
300.0	100	92	961	30	24		21		21	17
310.0	98	91	947	29	23		21		21	17
320.0	99	91	949	29		25	21		21	17
330.0	101	92	965	30		26	21		21	17
340.0	100	91	958	30		25		25	21	17
350.0	96	92	937	29		25		25	21	17
360.0	96	92	940	29		25		25	21	17
370.0	95	97	960	30		26		26	21	17
380.0	93	96	945	29		25		25	21	17
390.0	96	96	960	30		26		26	21	17

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
400.0	97	94	954	29		25		25	21	17
410.0	99	96	974	30		26		26	21	17
420.0	95	96	957	30		25		25	21	17
430.0	97	96	966	30		26		26	21	17
440.0	97	96	965	30		26		26	21	17
450.0	96	96	961	30		26		26	21	17
460.0	96	97	967	30		26		26	21	17
470.0	97	97	972	30		26		26	21	17
480.0	96	98	968	30		26		26	21	17
490.0	97	92	946	29		25		25	21	17
500.0	96	97	967	30		26		26	21	17
510.0	96	97	966	30		26		26	21	17
520.0	98	97	977	30		26		26	21	18
530.0	96	96	962	30		26		26	21	17
540.0	97	96	966	30		26		26	21	17
550.0	96	98	969	30		26		26	21	17
560.0	96	96	960	30		26		26	21	17
570.0	96	92	941	29		25		25	21	17
580.0	98	98	981	30		26		26	22	18
590.0	97	98	972	30		26		26	21	17
600.0	97	98	974	30		26		26	21	18
610.0	97	96	969	30		26		26	21	17
620.0	96	96	960	30		26		26	21	17
630.0	96	96	960	30		26		26	21	17
640.0	98	97	975	30		26		26	21	18
650.0	94	96	953	29		25		25	21	17
660.0	96	98	967	30		26		26	21	17
670.0	97	91	940	29		25		25	21	17
680.0	96	97	965	30		26		26	21	17
690.0	97	98	976	30		26		26	21	18
700.0	96	97	966	30		26		26	21	17
710.0	96	97	964	30		26		26	21	17
720.0	96	97	969	30		26		26	21	17
730.0	96	97	966	30		26		26	21	17
740.0	97	96	966	30		26		26	21	17
750.0	96	96	962	30		26		26	21	17
760.0	90	97	934	29		25		25	20	17
770.0	96	97	968	30		26		26	21	17
780.0	94	97	954	29		25		25	21	17
790.0	95	97	958	30		25		25	21	17
800.0	94	97	958	30		25		25	21	17
806.0	96	96	964	30		26		26	21	17

BIT NUMBER	3	IADC CODE	114	INTERVAL	806.0- 1751.0
HTC X3A		SIZE	12.250	NOZZLES	16 16 18
COST	2201.00	TRIP TIME	5.7	BIT RUN	945.0
TOTAL HOURS	22.01	TOTAL TURNS	196061	CONDITION	T4 B6 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
810.0	84	87	853	74	67		48		48	15
820.0	85	86	856	74	67		48		48	15
830.0	86	88	870	76	68		48		48	16
840.0	93	94	932	81	73		52		52	17
850.0	92	93	925	80	73		52		52	17
860.0	94	92	928	81	73		52		52	17
870.0	93	93	930	81	73		52		52	17
880.0	94	93	932	81	73		52		52	17
890.0	94	91	922	80	72		51		51	17
900.0	93	92	925	80	73		52		52	17
910.0	93	91	921	80	72		51		51	17
920.0	92	91	914	79	72		51		51	16
930.0	94	91	925	80	73		52		52	17
940.0	93	92	924	80	73		51		51	17
950.0	92	92	922	80	72		51		51	17
960.0	93	92	925	80	73		52		52	17
970.0	93	92	925	80		55	52		52	17
980.0	94	91	925	80		55	52		52	17
990.0	92	92	920	80		55	51		51	17
1000.0	93	90	911	79		54	51		51	16
1010.0	92	90	909	79		54	51		51	16
1020.0	90	91	905	79		54	50		50	16
1030.0	93	91	920	80		55	51		51	17
1040.0	92	89	903	78		54	50		50	16
1050.0	89	90	894	78		53		53	50	16
1060.0	90	89	893	78		53		53	50	16
1070.0	89	88	887	77		53		53	49	16
1080.0	88	89	883	77		53		53	49	16
1090.0	87	87	871	76		52		52	49	16
1100.0	89	87	880	76		53		53	49	16
1110.0	88	87	875	76		52		52	49	16
1120.0	88	86	873	76		52		52	49	16
1130.0	87	86	868	75		52		52	48	16
1140.0	87	84	855	74		51		51	48	15
1150.0	87	88	873	76		52		52	49	16
1160.0	87	87	867	75		52		52	48	16
1170.0	87	86	863	75		52		52	48	16
1180.0	88	86	869	75		52		52	48	16
1190.0	87	83	854	74		51		51	48	15
1200.0	88	86	869	75		52		52	48	16
1210.0	87	85	860	75		51		51	48	15
1220.0	87	86	867	75		52		52	48	16
1230.0	87	84	854	74		51		51	48	15

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1240.0	88	85	867	75		52		52	48	16
1250.0	89	84	863	75		52		52	48	16
1260.0	89	85	871	76		52		52	49	16
1270.0	88	85	868	75		52		52	48	16
1280.0	88	86	869	75		52		52	48	16
1290.0	89	86	876	76		52		52	49	16
1300.0	87	87	870	76		52		52	48	16
1310.0	87	88	870	76		52		52	48	16
1320.0	86	87	865	75		52		52	48	16
1330.0	89	87	880	76		53		53	49	16
1340.0	87	87	872	76		52		52	49	16
1350.0	87	87	868	75		52		52	48	16
1360.0	87	86	863	75		52		52	48	15
1370.0	87	87	870	76		52		52	48	16
1380.0	87	86	867	75		52		52	48	16
1390.0	86	83	847	74		51		51	47	15
1400.0	85	85	848	74		51		51	47	15
1410.0	86	86	860	75		51		51	48	15
1420.0	84	87	854	74		51		51	48	15
1430.0	86	86	860	75		51		51	48	15
1440.0	84	86	851	74		51		51	47	15
1450.0	84	85	845	73		51		51	47	15
1460.0	85	86	854	74		51		51	48	15
1470.0	83	84	834	72		50		50	46	15
1480.0	84	83	835	73		50		50	47	15
1490.0	84	85	844	73		50		50	47	15
1500.0	84	85	846	73		51		51	47	15
1510.0	84	85	846	73		51		51	47	15
1520.0	84	84	841	73		50		50	47	15
1530.0	84	84	840	73		50		50	47	15
1540.0	83	85	841	73		50		50	47	15
1550.0	84	85	844	73		50		50	47	15
1560.0	84	85	841	73		50		50	47	15
1570.0	84	84	838	73		50		50	47	15
1580.0	84	84	837	73		50		50	47	15
1590.0	83	84	835	72		50		50	47	15
1600.0	81	82	817	71		49		49	46	15
1610.0	80	84	821	71		49		49	46	15
1620.0	81	83	818	71		49		49	46	15
1630.0	80	84	822	71		49		49	46	15
1640.0	81	83	816	71		49		49	45	15
1650.0	75	83	791	69		47		47	44	14
1660.0	80	84	824	72		49		49	46	15
1670.0	80	82	811	70		48		48	45	15
1680.0	79	82	806	70		48		48	45	14
1690.0	79	80	797	69		48		48	44	14
1700.0	80	82	809	70		48		48	45	15
1710.0	80	81	803	70		48		48	45	14
1720.0	78	82	802	70		48		48	45	14
1730.0	78	81	797	69		48		48	44	14

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1740.0	78	80	791	69		47		47	44	14
1750.0	79	81	798	69		48		48	44	14
1751.0	79	80	796	69		48		48	44	14

BIT NUMBER	4	IADC CODE	437	INTERVAL	1751.0- 1837.0
HTC J11		SIZE	12.250	NOZZLES	16 16 16
COST	6788.00	TRIP TIME	5.9	BIT RUN	86.0
TOTAL HOURS	7.07	TOTAL TURNS	48632	CONDITION	T1 R1 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1760.0	77	77	773	67		46		46	43	14
1770.0	78	76	767	67		46		46	43	14
1780.0	78	77	775	67		46		46	43	14
1790.0	79	77	782	68		47		47	44	14
1800.0	78	77	777	67		46		46	43	14
1810.0	78	77	773	67		46		46	43	14
1820.0	78	77	774	67		46		46	43	14
1830.0	78	77	772	67		46		46	43	14
1837.0	77	77	770	67		46		46	43	14

BIT NUMBER	4	IADC CODE	4	INTERVAL	1837.9- 1847.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.6
TOTAL HOURS	2.38	TOTAL TURNS	17130	CONDITION	T0 B0 G0.250

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1838.0	0	48	240			25		25	13	4
1840.0	0	42	209			22		22	12	4
1842.0	0	53	264			27		27	15	5
1844.0	0	53	267			28		28	15	5
1846.0	0	54	271			28		28	15	5
1847.5	0	56	280			29		29	16	5

BIT NUMBER	4	IADC CODE	4	INTERVAL	1847.5- 1856.5
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	9.0
TOTAL HOURS	3.07	TOTAL TURNS	22329	CONDITION	T0 B0 G0.300

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1848.0	67	0	335			34		34	19	6
1850.0	64	0	318			33		33	18	6
1852.0	56	0	278			29		29	15	
1854.0	45	0	227			23		23	13	4
1856.0	43	0	215			22		22	12	4
1856.5	44	0	218			22		22	12	4

BIT NUMBER	4	IADC CODE	4	INTERVAL	1856.5- 1861.6
CHRIS RC4		SIZE	9.875	NOZZLES	15 15 14
COST	0.00	TRIP TIME	5.9	BIT RUN	5.1
TOTAL HOURS	7.47	TOTAL TURNS	54023	CONDITION	T0 B0 G0.350

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1858.0	0	57	284			29		29	16	5
1860.0	0	54	270			28		28	15	5
1861.6	0	54	271			28		28	15	5

BIT NUMBER	5	IADC CODE	437	INTERVAL	1861.6- 2062.0
HTC J11		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	6.4	BIT RUN	200.4
TOTAL HOURS	22.32	TOTAL TURNS	147694	CONDITION	T8 B4 G0.125

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
1870.0	75	70	725			43		43	40	13
1880.0	71	70	704			42		42	39	13
1890.0	71	69	703			42		42	39	13
1900.0	73	68	706			42		42	39	13
1910.0	76	67	710			42		42	40	13
1920.0	73	69	709			42		42	40	13
1930.0	73	68	704			42		42	39	13
1940.0	73	68	707			42		42	39	13
1950.0	72	67	697			42		42	39	13
1960.0	74	68	707			42		42	39	13
1970.0	72	68	699			42		42	39	13
1980.0	73	68	705			42		42	39	13
1990.0	0	105	527			31		31	29	9
2000.0	72	68	700			42		42	39	13
2010.0	72	68	702			42		42	39	13
2020.0	73	68	704			42		42	39	13
2030.0	0	104	521			31		31	29	9
2040.0	72	70	708			42		42	39	13
2050.0	73	68	703			42		42	39	13
2060.0	73	68	702			42		42	39	13
2062.0	73	67	702			42		42	39	13

BIT NUMBER	6	IADC CODE	517	INTERVAL	2062.0- 2477.6
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.3	BIT RUN	415.6
TOTAL HOURS	40.25	TOTAL TURNS	180878	CONDITION	T3 R3 G0.125

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2070.0	73	68	707			42		42	39	13
2080.0	73	67	700			42		42	39	13
2090.0	73	67	701			42		42	39	13
2100.0	73	68	706			42		42	39	13
2110.0	73	68	704			42		42	39	13
2120.0	72	68	702			42		42	39	13
2130.0	72	69	704			42		42	39	13
2140.0	73	68	706			42		42	39	13
2150.0	58	69	636			38		38	35	11
2160.0	60	69	647			39		39	36	12
2170.0	72	69	706			42		42	39	13
2180.0	72	68	699			42		42	39	13
2190.0	72	68	700			42		42	39	13
2200.0	72	68	701			42		42	39	13
2210.0	73	67	700			42		42	39	13
2220.0	73	67	701			42		42	39	1
2230.0	72	67	696			42		42	39	13
2240.0	73	68	703			42		42	39	13
2250.0	73	68	703			42		42	39	13
2260.0	73	67	697			42		42	39	13
2270.0	72	68	701			42		42	39	13
2280.0	73	66	697			42		42	39	13
2290.0	73	67	698			42		42	39	13
2300.0	73	67	700			42		42	39	13
2310.0	72	68	699			42		42	39	13
2320.0	72	67	692			41		41	39	12
2330.0	73	67	696			42		42	39	12
2340.0	72	67	696			42		42	39	12
2350.0	74	66	697			42		42	39	13
2360.0	73	68	702			42		42	39	13
2370.0	73	67	699			42		42	39	13
2380.0	72	66	693			41		41	39	12
2390.0	73	67	699			42		42	39	13
2400.0	72	66	693			41		41	39	12
2410.0	72	67	694			41		41	39	12
2420.0	108	2	549			33		33	31	10
2430.0	72	67	698			42		42	39	13
2440.0	72	68	701			42		42	39	13
2450.0	73	69	710			42		42	40	13
2460.0	72	73	721			43		43	40	13
2470.0	72	69	704			42		42	39	13
2477.6	70	68	692			41		41	39	12

BIT NUMBER	7	IADC CODE	517	INTERVAL	2477.6- 2636.0
HTC J22		SIZE	12.250	NOZZLES	15 15 15
COST	6788.00	TRIP TIME	7.6	BIT RUN	158.4
TOTAL HOURS	20.78	TOTAL TURNS	90559	CONDITION	T4 B8 G0.250

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2480.0	65	69	674			40		40	38	12
2490.0	67	70	683			41		41	38	12
2500.0	66	70	683			41		41	38	12
2510.0	67	71	692			41		41	39	12
2520.0	66	72	692			41		41	39	12
2530.0	68	69	683			41		41	38	12
2540.0	67	68	677			40		40	38	12
2550.0	68	69	687			41		41	38	12
2560.0	66	70	681			41		41	38	12
2570.0	68	69	685			41		41	38	12
2580.0	69	69	690			41		41	38	12
2590.0	69	69	687			41		41	38	12
2600.0	69	69	689			41		41	38	12
2610.0	70	68	690			41		41	38	12
2620.0	70	67	684			41		41	38	12
2630.0	70	67	687			41		41	38	12
2636.0	70	68	686			41		41	38	12

BIT NUMBER	8	IADC CODE	537	INTERVAL	2636.0- 2901.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.2	BIT RUN	265.0
TOTAL HOURS	52.43	TOTAL TURNS	214055	CONDITION	T5 B8 G0.250

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2640.0	1	62	315			19		19	18	6
2650.0	68	70	688			41		41	38	12
2660.0	69	69	688			41		41	38	12
2670.0	68	70	691			41		41	38	12
2680.0	70	69	695			42		42	39	12
2690.0	76	56	657			39		39	37	12
2700.0	69	68	687			41		41	38	12
2710.0	37	83	599			36		36	33	11
2720.0	71	67	689			41		41	38	12
2730.0	0	103	514			31		31	29	9
2740.0	69	69	687			41		41	38	12
2750.0	69	68	687			41		41	38	12
2760.0	69	68	687			41		41	38	12
2770.0	68	69	684			41		41	38	12
2780.0	87	27	574			34		34	32	10
2790.0	69	68	686			41		41	38	12

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2800.0	68	68	680			41		41	38	12
2810.0	68	68	679			41		41	38	12
2820.0	68	68	681			41		41	38	12
2830.0	68	70	685			41		41	38	12
2840.0	79	45	621			37		37	35	11
2850.0	68	68	681			41		41	38	12
2860.0	68	68	683			41		41	38	12
2870.0	69	68	689			41		41	38	12
2880.0	68	68	680			41		41	38	12
2890.0	69	69	691			41		41	38	12
2900.0	69	68	683			41		41	38	12
2901.0	68	68	683			41		41	38	12

BIT NUMBER	9	IADC CODE	537	INTERVAL	2901.0- 3021.0
HTC J33		SIZE	12.250	NOZZLES	15 15 15
COST	6637.00	TRIP TIME	8.4	BIT RUN	120.0
TOTAL HOURS	22.14	TOTAL TURNS	92542	CONDITION	T2 B2 G0.000

DEPTH	SPM1	SPM2	FLOW RATE	DC/ OH	DC/ CSG	HW/ OH	HW/ CSG	DP/ OH	DP/ CSG	DP/ RIS
2910.0	69	68	683			41		41	38	12
2920.0	70	67	685			41		41	38	12
2930.0	69	68	680			41		41	38	12
2940.0	68	68	680			41		41	38	12
2950.0	68	68	681			41		41	38	12
2960.0	69	68	682			41		41	38	12
2970.0	68	68	681			41		41	38	12
2980.0	66	67	668			40		40	37	12
2990.0	107	0	534			32		32	30	10
3000.0	67	67	670			40		40	37	12
3010.0	69	67	681			41		41	38	12
3020.0	0	107	533			32		32	30	10
3021.0	0	106	532			32		32	30	10

PE603549

This is an enclosure indicator page.
The enclosure PE603549 is enclosed within the
container PE906175 at this location in this
document.

The enclosure PE603549 has the following characteristics:

- ITEM_BARCODE = PE603549
- CONTAINER_BARCODE = PE906175
- NAME = Drill Data Plot
- BASIN = GIPPSLAND
- PERMIT = VIC/P1
- TYPE = WELL
- SUBTYPE = WELL_LOG
- DESCRIPTION = Drill Data Plot for Luderick-1
- REMARKS =
- DATE_CREATED = 24/06/1983
- DATE_RECEIVED = 06/09/1983
- W_NO = W819
- WELL_NAME = LUDERICK-1
- CONTRACTOR = CORE LABORATORIES AUSTRALIA LTD
- CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603550

This is an enclosure indicator page.
The enclosure PE603550 is enclosed within the
container PE906175 at this location in this
document.

The enclosure PE603550 has the following characteristics:

ITEM_BARCODE = PE603550
CONTAINER_BARCODE = PE906175
NAME = Temperature Plot
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Temperature Plot for Luderick-1
REMARKS =
DATE_CREATED = 24/06/1983
DATE_RECEIVED = 06/09/1983
W_NO = W819
WELL_NAME = LUDERICK-1
CONTRACTOR = CORE LABORATORIES AUSTRALIA LTD
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603551

This is an enclosure indicator page.
The enclosure PE603551 is enclosed within the
container PE906175 at this location in this
document.

The enclosure PE603551 has the following characteristics:

ITEM_BARCODE = PE603551
CONTAINER_BARCODE = PE906175
 NAME = Pressure Plot
 BASIN = GIPPSLAND
 PERMIT = VIC/P1
 TYPE = WELL
 SUBTYPE = WELL_LOG
DESCRIPTION = Pressure Plot for Luderick-1
REMARKS =
DATE_CREATED = 24/06/1983
DATE_RECEIVED = 06/09/1983
 W_NO = W819
 WELL_NAME = LUDERICK-1
CONTRACTOR = CORE LABORATORIES AUSTRALIA LTD
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603552

This is an enclosure indicator page.
The enclosure PE603552 is enclosed within the
container PE906175 at this location in this
document.

The enclosure PE603552 has the following characteristics:

ITEM_BARCODE = PE603552
CONTAINER_BARCODE = PE906175
NAME = Geoplot
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Geoplot for Luderick-1 containing rate
of penetration, corrected "d"
exponent, costs and pressure data.
REMARKS =
DATE_CREATED = 24/06/83
DATE_RECEIVED = 6/09/83
W_NO = W819
WELL_NAME = LUDERICK-1
CONTRACTOR = CORE LABORATORIES AUSTRALIA LTD
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

GRAPHOLOG PE 603553

PE603553

This is an enclosure indicator page.
The enclosure PE603553 is enclosed within the
container PE906175 at this location in this
document.

The enclosure PE603553 has the following characteristics:

ITEM_BARCODE = PE603553
CONTAINER_BARCODE = PE906175
NAME = Grapholog (Mud Log)
BASIN = GIPPSLAND
PERMIT = VIC/P1
TYPE = WELL
SUBTYPE = MUD_LOG
DESCRIPTION = Grapholog (mud log) for Luderick-1
REMARKS =
DATE_CREATED = 24/06/1983
DATE_RECEIVED = 06/09/1983
W_NO = W819
WELL_NAME = LUDERICK-1
CONTRACTOR = CORE LABORATORIES AUSTRALIA LTD
CLIENT_OP_CO = ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)