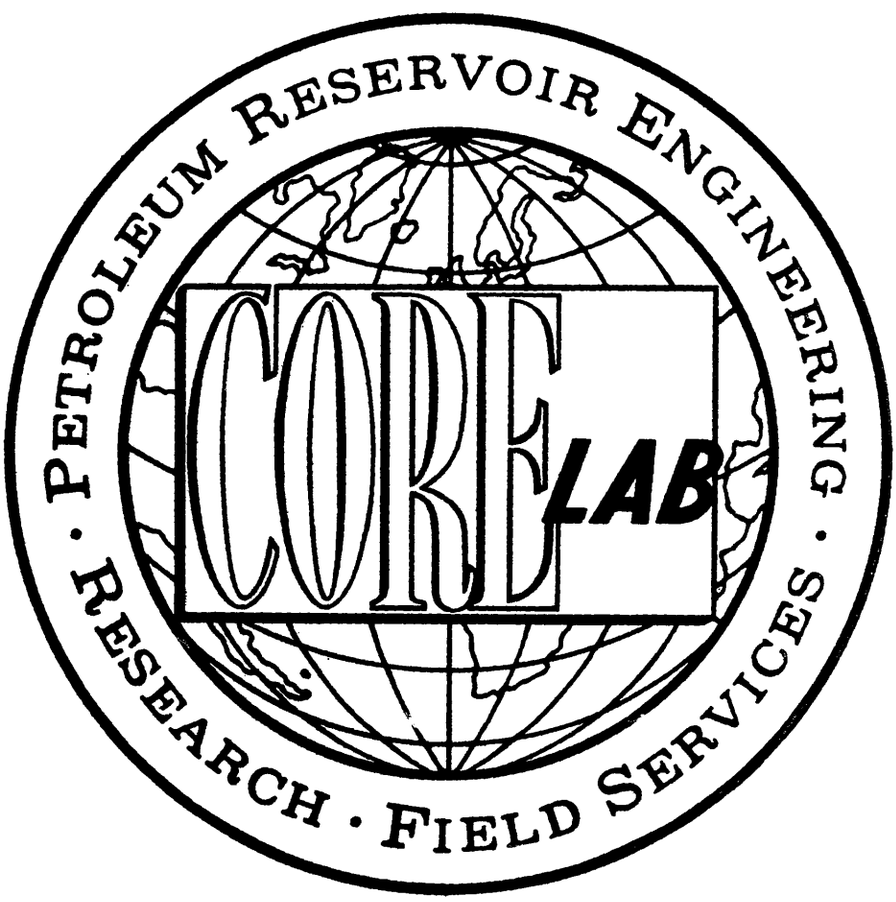
[redacted]

# ATTACHMENT TO WCR FOR PALMER-1 (W751)



IES WELL REPORT
PALMER No 1
ESSO AUSTRALIA LTD

# CORE LABORATORIES AUSTRALIA (QLD.) LTD.

*Petroleum Reservoir Engineering*
AUSTRALIA

BRISBANE OFFICE:
1173 KINGSFORD SMITH DRIVE
MEEANDAH, Q. 4008.
P.O. BOX 293
HAMILTON CENTRAL, Q. 4007.
AUSTRALIA.

CABLE ADD: CORELAB BRISBANE
TELEX NO: CORLBN AA42513
TELEPHONE: 260 1722
260 1723

AD:JM

1st December, 1981

ATTN: K. Kuttan,
Esso Australia Ltd.,
127 Kent Street,
SYDNEY , N.S.W. 2001

Dear Sir,

Core Laboratories Intermediate Extended Service Well Logging Unit F1802 was in use during the drilling of PALMER # 1 from surface to a total depth of 1723 metres.

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

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

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

Yours very truly,
CORE LABORATORIES INTERNATIONAL LTD.

A. DODSON
Unit Supervisor

INDEX

# 1 INTRODUCTION

PALMER # 1 was drilled by ESSO Australia Ltd, in the Bass Strait, Australia.

Well co-ordinates were:

Latitude : 38° 33' 49.536"
Longtitude : 147° 19' 46.776"

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.

PALMER # 1 was spudded on 30 September, 1981 and reached a total depth of 1723 metres on 7 October, 1981, a total drilling time of 11 days. The main objective of the well was to assess the hydrocarbon potential of reservoir sandstones within the Latrobe "Coarse Clastics" in a well defined, faulted anticlinal structure adjacent to the Perch oil accumulation. The secondary objective was to test for any intra-Latrobe seals that may have been produced by thin shales and coals. Elevations were:

21 m Kelly bushings to mean sea level
42 m Water depth
63 m Kelly bushings to mud line.

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

Core Laboratories personnel involved in the logging of were as follows:

| | | |
|---|---|---|
| A. DODSON | - | UNIT SUPERVISOR |
| K. BREAKWELL | - | PRESSURE ENGINEER |
| N. DANKER | - | LOGGING CREW CHIEF |
| B. GIFTSON | - | WELL LOGGER |
| A. McCONVILLE | - | WELL LOGGER |
| J. LANG | - | WELL LOGGER |

## 2 CORE LABORATORIES EQUIPMENT

Core Laboratories Field Laboratory 802 monitoring equipment includes the following :

### A. MUD LOGGING

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

### B. INTERMEDIATE EXTENDED SERVICE PACKAGE

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

## 3 CORE LABORATORIES MONITORING EQUIPMENT

### DEPTH

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

### WEIGHT ON BIT

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

### ROTARY SPEED

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

### PUMP PRESSURE

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

### PIT VOLUME

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

### PUMP STROKES

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

## MUD TEMPERATURE

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

## MUD CONDUCTIVITY

A Balsbaugh electrode-less conductivity sensor measures the current
in a closed loop of solution coupling a pair of toroidal transformer
coils.
The conductivity in and out is displayed on analog and digital meters,
and recorder chart.

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

## CUTTINGS

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

## GAS

1.Flame Ionization Total Hydrocarbon gas detector.
The T.H.M. accurately determines hydrocarbon concentrations up to
100% saturation.

2.Flame Ionization Detector chromatograph.
The F.I.D. is capable of accurate determination of hydrocarbon
concentration from C1 to C6+.

3.Hot wire gas detector(Wheatstone Bridge type)
A back up system for total gas detection.

## SHALE DENSITY

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

## 4 INTERMEDIATE EXTENDED SERVICE INTRODUCTION

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

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

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

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

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

CORELAB DRILL DATA PLOT

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

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

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

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

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

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

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

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

I.E.S. GEO-PLOT LOG

This is plotted by the computer while drilling is in progress.At a later date this plot can be re-run on different scales to suit the client. The data is stored on magnetic tape during the drilling operations. Functions plotted on this log are : rate of penetration,corrected "d" exponent,breakeven analysis,formation pore pressure,mud density in and formation fracture pressure.
Two Geo-plots are included in this report,at scales of 1:2000 and 1:5000.

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

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

ELECTRIC LOG PLOT

A plot of shale resistivity (ohm-metres squared/metre),sonic travel time (microseconds per foot),bulk density (gm./cc)and neutron porosity (%),is made,using data supplied by Schlumberger.Two-cycle semilog paper is used,with a vertical scale of 1:10,000.As far as possible only clean shale points are selected and plotted.The relatively compressed vertical scale makes deviations from the normal compaction trend easier to identify.
**The wireline log plot was omitted from this report as no suitable lithologies were drilled on Palmer N$^{o}$ 1.**

## PROGRESS LOG

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

## DATA RECORDING

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

## MUD DATA SHEETS

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

## DRILLING PARAMETER PLOT

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

## HYDRAULIC ANALYSES

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

## GAS COMPOSITION ANALYSIS

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

1. Log plot

2. Triangulation plot

Both plots are included in this report.

RAPHOLOG

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

ISCELLANEOUS

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

5 RIG INFORMATION SHEET

# RIG INFORMATION SHEET

CORE LAB

COMPANY ESSO AUSTRALIA LTD.

WELL PALMER # 1

| | |
|---|---|
| OWNER | SOUTH SEAS DRILLING COMPANY |
| NAME AND NUMBER | SOUTHERN CROSS ( N° 107 ) |
| TYPE | SEMI-SUBMERSIBLE , TWIN HULLED. |
| DERRICK, DRILL FLOOR & SUBSTRUCTURE | DERRICK: LEE C MOORE, 152' HIGH X 40' AT BASE.<br>LOAD CAPACITY OF 1 000 000 lbs |
| DRAWWORKS | OILWELL E-2000 DRIVEN BY 2 GE 752 ELECTRIC MOTORS. |
| CROWN BLOCK | LEE C MOORE 27-50 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 5¼" x 50' HEX KELLY |
| ROTARY TABLE | OILWELL A 37½ 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.<br>TWO MUD HOPPERS POWERED BY 2 MISSION 6x8" CENTRIFUGAL BY TWO 100 HP ELECTRIC MOTORS.<br>DESANDER : 1 DEMCO 4 CONE 12" MODEL N° 124<br>DESILTER : 1 DEMCO 4"-16H 16 CONE<br>DEGASSER : 1 SWACO MODEL N° 36<br>SHALE SHAKERS : 2 BRANDT DUAL UNIT TANDEM - GHI DUAL UNIT. |
| BLOW OUT PREVENTORS | THREE SHAFFER L.W.S. 18¾" - 10 000 psi<br>TWO HYDRIL G.L. 18¾" - 5000 psi |
| WELL CONTROL EQUIP. | FOUR VALCRON ACCUMULATORS. 2" - 10 000psi<br>CHOKES: 2 C.I.W. ABJ H2 2 1/16" - 10 000 psi, 1 SWACO SUPER CHOKE |
| TUBULAR DRILLING EQUIPMENT | DC : 6¼" x 2 13/16" (4" IF TJ)<br>8 " x 2 13/16" (6 5/8" H90 TJ)<br>9¾" x 3" (7 5/8" H90 YJ)<br>HWDP : 5" 50lb/ft GRADE G (6½" OD 4½" IF TJ)<br>DP : 5" 19.5lb/ft GRADE G&E (6 3/8" OD 4½" IF TJ) |
| CEMENTING UNIT | HALLIBURTON HT-400 UNIT |
| MONITORING EQUIPMENT | MARTIN DECKER : MUD VOLUME TOTALIZER<br>6 CHANNEL DRILLING RECORDER<br>4 PRESSURE GAUGES<br>FLOWSHOW INDICATOR |
| POWER SUPPLY | 2 EMD MD 18 DIESEL ENGINES RATED AT 1950 HP EACH<br>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: 6WESTERN GEAR, 50'STROKE, 80 000lbs.
MUD BULK TANKS: 3x1570cu ft. GUIDE LINE TENSIONERS : 4 WESTERN GEAR 16 000 lbs, 40'STROKE

752-485 (CL 1151)

6 WELL INFORMATION SHEET

# WELL INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.
WELL PALMER 1
Sheet No. 1

| | | | | |
|---|---|---|---|---|
| WELL NAME | PALMER 1 | | | |
| OPERATOR | ESSO EXPLORATION | | | |
| PARTNERS | B.H.P. | | | |
| RIG | OWNER | SOUTH SEAS DRILLING COMPANY | | |
| | NAME OR NUMBER | SOUTHERN CROSS | | |
| | TYPE | SEMI-SUBMERSIBLE | | |
| LOCATION | LATITUDE (X) | 38°33'49.536" | LONGITUDE (Y) | 147°19'46.776" |
| | FIELD | GIPPSLAND BASIN | AREA | BASS STRAIT |
| | COUNTY | - | STATE | - |
| | COUNTRY | AUSTRALIA | | |
| | DESCRIPTION | EXPLORATION | | |
| DATUM POINTS | Ground Elevation | - | RKB to Ground Level | - |
| | Mean Water Depth | 42m | RKB to Water Level | 22m |
| DATES | DRILL 20" SHOE ¢ | 30-SEPT-1981 | TOTAL DEPTH | 7-OCT-1981 |

HOLE SIZES

| Depth From | Depth To | Bit Size" | No. Of Bits | No. of Reamers | Date From | Date To | Cased | Logged |
|---|---|---|---|---|---|---|---|---|
| 64 | 203 | 26 | 1 | 0 | 12-8-81 | 12-8-81 | 20" | - |
| 203 | 786 | 17½ | 1 | 0 | 30-9-81 | 1-10-81 | 133/8 | * |
| 786 | 1723 | 12¼ | 4 | 0 | 2-10-81 | 7-10-81 | - | * |

DRILLING FLUID

| Depth From | Depth To | Weights | Type |
|---|---|---|---|
| 64 | 786 | 8.6 TO 8.6 | SEAWATER |
| 786 | 974 | 8.6 TO 8.7 | SEAWATER GEL |
| 974 | 1723 | 9.8 TO 10.5 | FRESHWATER GEL |
| | | TO | |
| | | TO | |
| | | TO | |
| | | TO | |
| | | TO | |

WIRELINE LOGGING

| Depth From | Depth To | Hole Size" | Date Run | Logs Run |
|---|---|---|---|---|
| | | 17½ | 1-10-81 | ISF-BHS-GR-CAL-SP |
| 1319 | 769 | 12¼ | 8-10-81 | ISF-BHS-GR-CAL-SP/LDT-CNL-GR-CAL/HDT |
| 1721 | 769 | 12¼ | 10-10-81 | ISF-BHS-GR-CAL-SP/LDT-CNL-GR-CAL/HDT |
| | - | 12¼ | 10-10-81 | VELOCITY/CSTx2 |

RISER, CASING & LINER

| Depth From | Depth To | OD " | ID " | Weight | Grade | Threads | Date Run | Cement | Stages | Excess |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 64 | 23 | 21 | - - - | - - - | - RISER | - - - - - | - - - | - - - | - - - |
| 64 | 188 | 20 | 19.124 | 92 | X52 | JV BOX | 13-8-81 | 'N' | 1 | - |
| 64 | 769 | 13 3/8 | 12.415 | 54.5 | K55 | BUTT | 1-10-81 | 'N' | 1 | - |

7520-484 (CL 1150)

¢ See well history

# 7 WELL HISTORY

WELL HISTORY

11 Aug 1981 — Towed to Palmer # 1 location and commenced anchoring. Completed anchoring and made up the B.H.A. to spud the hole.

12 Aug 1981 — Spudded the well at 03.30 hrs. Drilled a 26" hole from 62.56m to 67.44m. Jumped divers to check that the well was spudded correctly; - divers reported that the guide base was 2½° off level. Drilled from 67 to 100m and ran a deviation survey which was a misrun. Drilled to 109m and ran another deviation survey. (109m, ¼°). Drilled to 203m reaming each connection and spotting a 30 bbl. pill every second connection. Spotted a 150 bbl slug of hi-vis mud at 203m and took a deviation survey. (203m, ¼°) Circulated out the high viscosity mud with seawater and made a wiper trip to 71m, found no drag and ran in to 203m.

13 Aug 1981 — Displaced the 26" hole with seawater and P.O.O.H. Ran the 20" casing. (92 #/ft, x 52, 8 joints). Landing weight was 150 000 lbs. Cemented the casing with the shoe at 188m with 627 sx class "N" cement with 194 bbl. of prehydrated gel water. Slurry weight was 15.6 p.p.g. Displaced with 15 bbl. of water. The float equipment held.

16 Aug 1981 — Pulled the anchors and moved to the Bream # 4 A Location.

27 Sept 1981 — Completed pulling the anchors to move to Palmer # 1 location. Towed to Palmer # 1 location.

28 Sept 1981 — W.O.W. to run anchors

29 Sept 1981 — Ran the riser. Displaced the riser and tested the blind rams to 500 p.s.i. Moved the rig to retrieve the wear bushing.

30 Sept 1981 — Unlatched the wear bushing and P.O.O.H. Made up the B.H.A. and tagged the cement at 178m. Installed and tested the divertor. Drilled cement from 178 to 191m. Checked the divertor and reamed the rathole from 191m to 203m. Drilled at 17½" hole from 203m to 728m spotting 30 bbl pills of hi-vis mud every third connection. Flushed the riser at 400, 500 and 600m. Stopped drilling for 1 hr due to a power failure and drilled from 728m to 776m. Maximum gas detected in the section from 203m to 776m was a trace of Cl only. (Less than 10 p.p.m.)

1 Oct 1981 — Drilled from 776 to 785m, spotted a hi-vis pill and C.O. Circulated for 2 hors and ran a deviation survey. (785m, ½°) P.O.O.H. and strapped the pipe. (no change to tally) Ran wireline logs.
Run # 1: - ISF - BHC - GR. The hole took 69 bbl. while logging and out of hole. Ran in hole to 776m and washed to bottom. (no fill). Pumped a slug and P.O.O.H. Found no drag. Retrieved the wear bushing and ran the 13 3/8" casing. (54.5 # / ft, K55, 62 joints). Tested the cement lines and set the casing with the shoe at 769m.

2 Oct 1981

Tested the B.O.P., ran the wear bushing and broke down the 17½" B.H.A. Made up the 12¼" bit and new B.H.A. and ran in the hole with NB # 3. Tagged the cement at 739m and drilled the cement to 785m. Drilled 6m and conducted a P.I.T. to 600 p.s.i. giving a P.I.T. of 13.5 + p.p.g. E.M.W. Conducted an S.P.L. check and drilled to 803m where the kelly hose split. Pulled back to the shoe and changed the kelly hose, tested it to 3000 p.s.i. and ran back in the hole. Maximum gas was a trace of Cl.

3 Oct 1981

Drilled ahead building the mud weight to 10.2 p.p.g. and flushing the riser every second connection. Had to flush the riser and work the pipe at 1163m due to the 'gumbo' packing the riser. Performed a S.P.L. check at 1192m. Ran a carbide lag check. Average R.O.P. was 23m/hr, though the R.O.P. was controlled to around 20m/hr to prevent packing-off problems. Average and maximum gas was a trace of Cl only.

4 Oct 1981

Drilled to 1204m where the hole was circulated out due to a drilling break at 1204m, no sand was found in the sample though and no gas or hydrocarbon shows were detected. Drilled to 1214m and circulated out, 80% sand was found but no gas or shows. Drilled to 1220m and C.O., 100% sand was found but no gas or shows. Drilled to 1265m and C.O., 100% sand was found but no gas or shows. Lost 30 bbl. of mud at 1309m and cut the circulation rate from 700 to 600 g.p.m. Drilled and circulated out at 1323 and 1358m but found no shows. Drilled on to 1362m, at this point the R.O.P. had fallen to around 4m/hr and had been on-bottom for 27.3 hrs and made 227 thousand turns. The bit was expected to be worn at this point and had been run so long because it was expected that a core would have been taken. It was decided to pull out of the hole for a bit change at 1362m. A deviation survey was run at this depth. (1362m, 2 3/4$^{O}$) Pumped a 30 bbl. 11.3 p.p.g. slug and started P.O.O.H. After 7 stands it was found that the hole was not taking the correct volume of mud, being 5 bbl. short. Ran in the hole with two stands, but the string was found to be displacing too much mud. Checked for flow and a slight flow was thought to be observed. Closing the top annular and hung the pipe on the upper rams. Measured the S.I.D.P.P. at 75 p.s.i. and the S.I.C.P. at 75 p.s.i. (It was later found that there gauges were inaccurate). Pit gain was 9 bbl. Mixed 200 bbl of mud to 10.4 p.p.g. and started to circulate the heavy mud at 20 S.P.M.; - no increase in the casing pressure was noted. Increased the pump rate to 30 and then 40 S.P.M. When the influx was due at the shakers Core Laboratories analysed the mud for chloride level changes and hydrocarbon gases but did not detect any change in either level. P.O.O.H. with the hole taking the correct volume of fluid. It was later thought that the hole fill-up discrepency was due to a faulty trip tank pump, and the observed flow was due to the slug.

5 Oct 1981

Continued to P.O.O.H. and found 350000 lbs of drag at 900m; - worked the pipe, pumped a slug and continued to P.O.O.H. slowly. The bit was indeed found to be well worn and was graded at 8-8-3/4". Ran in the hole with NB # 4, H.T.C. x 1G, 12¼". Found tight hole at 841m and reamed from this depth to 861m. Ran in to 1315m, found tight hole and reamed from 1315m to 1362m. Found 2m of fill and 1u of trip gas. Drilled to 1450m, finding drilling breaks at 1379m, (8 to 50m/hr) 1417m (4 to 40 m/hr) and 1437m; (9 to 80 m/hr), no shows were found and the breaks were not circulated out. The average gas was 0.2u, the maximum gas was 0.5u at 1421m from coal. The lithology was alternating sandstone and coal seams. The coals were unusual in that they drilled slowly at around 5m/hr, when 100% coal was placed in a cuttings blender for one minute, only 12u gas was given off. The coal did give off hydrogen sulphide though. This was not given off to the atmosphere though as the mud pH was 10.9. (Further caustic was added to the mud).

6 Oct 1981

Drilled from 1450m to 1485m. Background gas 0.2u but included C1 to C4. At this point the bit had been on-bottom for 12.5 hrs and 100 thousand turns. The cumulative cost had also increased; - see data list B and the cost analysis plot. It was decided to change the bit. Circulated out and ran a deviation survey (1485m, 3¼°) and P.O.O.H. The bit was graded at 7-4-¼". A JD4 was chosen for the next bit run, having more suitable teeth. R.I.H. with NB # 5, H.T.C., JD4, 12¼". Found 1.5m of hole fill and 0.7u T.G. from 1485m. Drilled to 1576m, performed an S.P.L. check at 1570m and found drilling breaks at 1490m, (4 to 40 m/hr; - sandstone), 1535m, (7 to 50 m/hr; - sandstone), 1557m, (5 to 80 m/hr) and 1563m (8 to 40 m/hr; - sandstone) Average gas was 0.2u and maximum gas was 0.5u from 1530m. The lithology was still interbedded sands and coals, but the sand was becoming more angular leading to increased tooth wear.

7 Oct 1981

Drilled to 1605m; at this point the R.O.P. had decreased to 2 m/hr, the cumulative cost less than the incremental cost, and the cumulative cost had started to increase at 1602m; - see data lists A and B and the cost analysis plot. It was decided to pull the bit at this point. C.O. and ran a deviation survey, (1605m, 2¼°) and P.O.O.H. the hole took 3 bbl. more than the calculated volume. The bit was graded at 7-8-1/16". Expected T.D. was 115m deeper and an insert tooth bit was chosen to ensure no further bit changes would be required. R.I.H. with NB # 6, H.T.C. J22 12¼". Found 1.5m of fill and 0.2u T.G. from 1605m. A drilling break was found at 1615m, the R.O.P. increasing from 7 to 60 m/hr. This high R.O.P. was maintained throughout most of the bit run due to the predominance of the sand. A flow check was made at 1626m, where the R.O.P. was 96 m/hr. The flow check was negative. This high R.O.P. gave the bit run a relatively low cumulative cost but this was due to the different lithology rather than the bit type. Drilled to 1723, (not 1721m as 2m of hole fill was expected) reaching T.D. at 03.45 hrs. C.O., ran a deviation survey, (1723m, 1½°) and made a wiper trip to the shoe. Ran back to bottom, found no fill and circulated out. P.O.O.H. and strapped out; - 1722.43m. Found a tight spot while pulling out at 1353m.

8 Oct 1981

Attempted to run wireline logs but could not get below 1319m. The coal here was found to be heavily overgauge being off the caliper scale. Weight was added to the tools and another run was attempted but again the tool would not go deeper than 1319m. The coal seam was approximately 20m in thickness, (see Grapholog) and it was later found that the hole deviation suddenly increased at this point from around $1\frac{1}{2}^{o}$ to $3\frac{1}{4}^{o}$. R.I.H. to ream this section, 'Reamed' (did not rotate the pipe) from 1317m to 1355m. At 1317m the bit took 30,000 lbs weight. Trip gas from 1350m was 1.0u. Flushed the riser and circulated at 1355m for $1\frac{1}{2}$ hrs. Pumped a 40 bbl. slug of high viscosity mud which resulted in a large volume of coal cavings going over the shakers. Ran in the hole to T.D. found $2\frac{1}{2}$m of fill and reamed to 1723m. Flushed the riser and circulated out, trip gas was a trace only. Flushed the riser again; this resulted in an increase in the gas content to 0.2u due to the greater volume of cuttings going over the shakers. P.O.O.H. at 19.35 hrs and found 55,000 lbs drag from 1410m to 1329m.

9 Oct 1981

Completed P.O.O.H. the hole taking 11 bbl. of mud more than the calculated volume. No further drag was found. Rigged up Schlumberger and ran log # 3, H.D.T. but could not get deeper than 1314m. Ran in the hole and reamed from 1316m to 1340m, pumped a high viscosity slug resulting in a large volume of coal cavings over the shakers. Pumped a heavy weight slug (18 p.p.g.) and again got a large volume of coal cavings over the shakers; - the cavings were not as large as previously seen when circulating out. The pumps were stopped and tested the hole for weight. The bit again took 30 000 lbs. Pulled up 3 stands and went back in with the pumps only on 40 S.P.M. (to keep the nozzles clear) and attempted to break through. The bit still took weight at 1316m. Pumped a 40 bbl. heavy weight slug to the bit, waited 10 minutes and C.O. When the bottom of the slug was in the base of the riser, the riser was flushed. Very little coal was found to going over the shakers. Made a wiper trip to the shoe with very little drag (10 000 lbs on the first stand) Lost 1 bbl. of mud while making the wiper trip. Ran in the hole, found hole conditions good and P.O.O.H. Maximum gas while circulating was 1.5u.

10 Oct 1981

Continued to P.O.O.H.; - no drag over 6000 lbs was found. Rigged up Schlumberger and ran wireline logs: -

Run # 1: ISF - BCC - MSFL - GR
Run # 2: LDT - CNL - GR
Run # 3: HDT

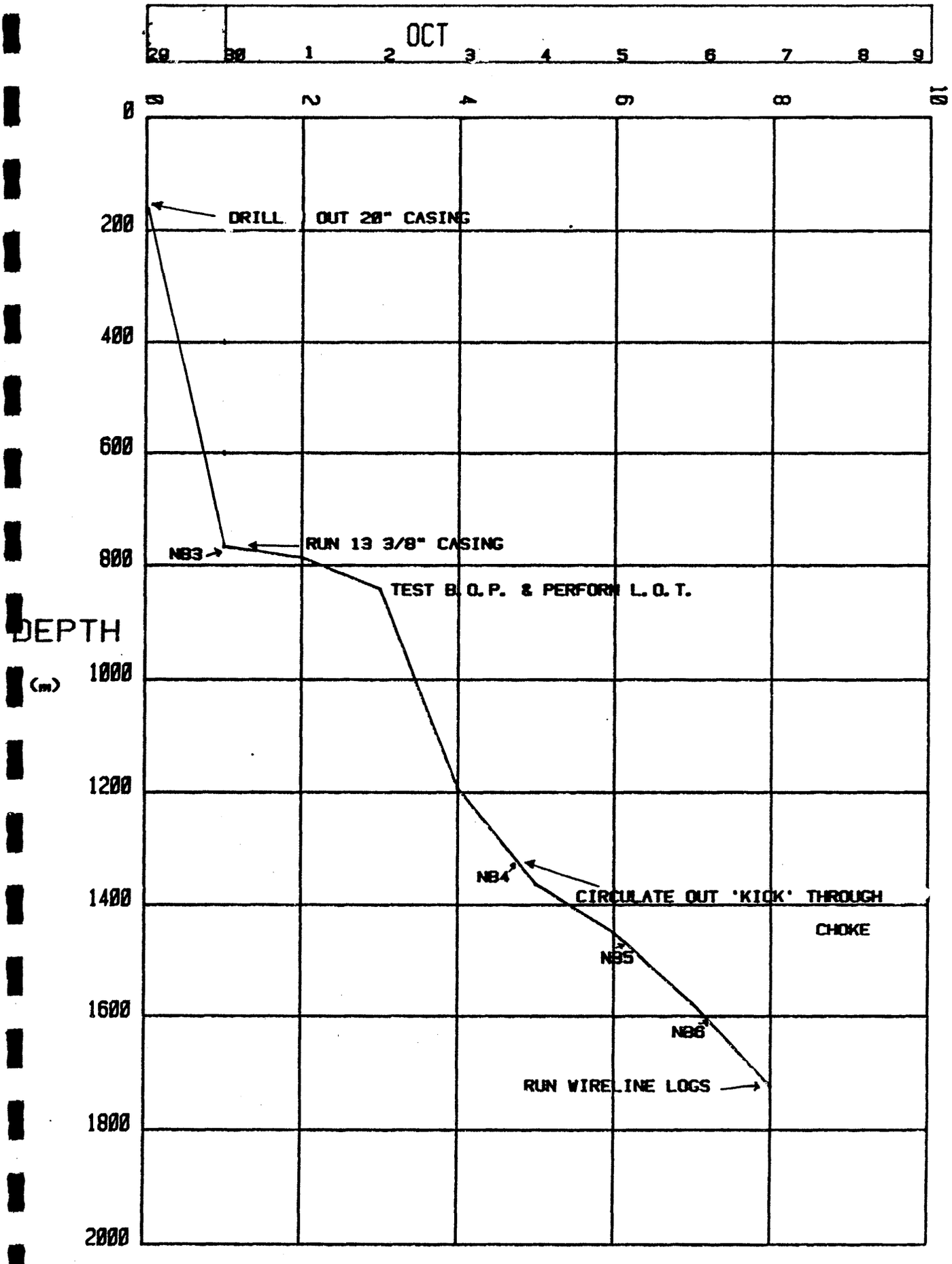
While logging there was a hole fill of 36 bbl. A velocity survey was conducted and two CST runs made. Rigged down Schlumberger and ran in the hole with O.E.D.P.

11 Oct 1981
to
13 Oct 1981

Set cement plugs one to three, recovered the riser and B.O.P. and the P.G.B. The baseplate did not come free immediately but was retrieved with the "J" tool.

# 8 PROGRESS REPORT

PROGRESS LOG
ESSO AUSTRALIA LTD. PALMER 1



## 9 BIT RECORD

BIT SIZE . . . . . inches

BIT COST . . . . . A dollars

JET SIZE . . . . . Thirty seconds of an inch

DEPTHS . . . . . Metres

HOLE MADE. . . . . Metres

DRILLING TIME. . . . . Hours

AVERAGE ROP. . . . . Metres/hour

AVERAGE COST/METRE . . A dollars

BIT CONDITION. . . . . Teeth

Bearings

Gauge . . . . inches

CORE LAB

# BIT RECORD

COMPANY ESSO AUSTRALIA LTD.

WELL PALMER 1

Sheet No. 1

| S/N | Bit No. | Make | Type | IADC Code | Size | Cost | Jets | Depth In | Depth Out | Hole Made | Drilling Time | On Bottom Hours | Turns | Average ROP | Average Cost/ | Condition T B G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LJ 321 | 1 RR | HTC | OSC3AJ | 111 | 26 | 4000 | 18/18/18 | 62 | 203 | 203 | 18.5 | - | - | - | - | - |
| CC 556 | 2 RR | HTC | OSC3AJ | 111 | 17½ | 2400 | 20/20/20 | 203 | 786 | 582 | 15.0 | 7.6 | 63 | 77 | 58 | 2-2-I |
| LR 691 | 3 | HTC | X3A | 114 | 12¼ | 1440 | 15/15/15 | 786 | 1362 | 577 | 37.2 | 27.3 | 228 | 21 | 178 | 8-8-¾ |
| KZ 216 | 4 | HTC | X1G | 135 | 12¼ | 1440 | 13/13/13 | 1362 | 1485 | 123 | 15 .7 | 12.5 | 100 | 10 | 430 | 7-4-¼ |
| EB 016 | 5 | HTC | JD4 | 217 | 12¼ | 1740 | 13/13/13 | 1485 | 1605 | 120 | 14.5 | 12.9 | 114 | 9 | 455 | 7-8-3/16 |
| 823-NL | 6 | HTC | J22 | 517 | 12¼ | 5240 | 13/13/13 | 1605 | 1723 | 118 | 8.7 | 7.0 | 48 | 17 | 309 | 2-2-I |

7520-486 (CL 1152)

# BIT RECORD

CORE LAB

COMPANY ESSO AUSTRALIA LTD.

WELL PALMER 1

Sheet No. 1

| S/N | Bit No. | Make | Type | IADC Code | Size | Jets | Depth In | Hole Made | Drilling Time | On Bottom Hours | Turns | Condition T B G | Remarks | BIT COST |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LJ321 | 1RR | HTC | OSC 3AJ | 111 | 26 | 18/18/18 | 62 | 141 | 18.5 | - | - | - | OUT FOR 20" CASING | 4000 |
| CC556 | 2RR | HTS | OSC 3AJ | 111 | 17½ | 20/20/20 | 203 | 582 | 15.0 | 7.6 | 63 | 2-2-I | OUT FOR 13⅜" CASING | 2400 |
| LR691 | 3 | HTC | X3A | 114 | 12¼ | 15/15/15 | 786 | 577 | 37.2 | 27.3 | 228 | 8-8-¾ | OUT DUE TO LOW ROP & HIGH TORQ | 1440 |
| KZ216 | 4 | HTC | X1G | 135 | 12¼ | 13/13/13 | 1362 | 123 | 15 .7 | 12.5 | 100 | 7-4-¼ | PULLED DUE TO LOW ROP | 1440 |
| EB016 | 5 | HTC | JD4 | 217 | 12¼ | 13/13/13 | 1485 | 120 | 14.5 | 12.9 | 114 | 7-8-3/16 | PULLED DUE TO LOW ROP | 1740 |
| 823-NL | 6 | HTC | J22 | 517 | 12¼ | 13/13/13 | 1605 | 118 | 8.7 | 7.0 | 48 | 2-2-I | OUT FOR WIRELINE LOGS | 5240 |
| | | | | | | | 1723 - T.D. | | | | | | | |

7520-487 (CL 1153)

## 10 MUD INFORMATION SHEETS

DEPTH . . . . . Metres

MUD WEIGHT . . . . . Pounds per gallon

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

PLASTIC VISCOSITY. . . Centipoise

YIELD POINT. . . . . Pounds/100 square feet

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

FILTRATE . . . . . A.P.I. cc

CAKE THICKNESS . . . . Thirty seconds of an inch

SALINITY : Ca/Cl . . . ppm

SOLIDS/SAND/OIL. . . . Percentage

CORE LAB

# MUD INFORMATION SHEET

COMPANY ESSO AUSTRALIA LTD.

WELL PALMER 1

Sheet No. 1

| DEPTH | 784 | 1230 | 842 | 1123 | 1240 | 1368 | 1504 |
|---|---|---|---|---|---|---|---|
| DATE | 30-9-81 | 1 -10-81 | 2-10-81 | 3-10-81 | 4-10-81 | 5-10-81 | 6-10-81 |
| TIME | | 12.30 | 23.50 | 14.4 | 07.30 | 14.30 | 15.00 |
| WEIGHT | | 8.9 | 8.8 | 10.2+ | 10.2 | 10.4 | 10.4 |
| FUNNEL VISCOSITY | | 32 | 32 | 47 | 49 | 45 | 42 |
| PV/YP | | 4/12 | 5/14 | 15/20 | 17/17 | 17/17 | 17/17 |
| N/K | | | | .51/1.42 | .58/.89 | .58/.89 | .58/.89 |
| GEL: INITIAL/10 MIN | | | | 7/37 | 2/16 | 3/20 | 2/13 |
| pH | | | | 10.4 | 11.6 | 10.6 | 10.7 |
| FILTRATE: API/API HTHP | | | | 6.2/7.8 | 4.9/11.6 | 5.8/12.4 | 6.2/13.2 |
| CAKE | | | | 1-3 | 1-3 | 1-3 | 1-3 |
| SALINITY Cl | | | | 5000 | 3500 | 3000 | 2800 |
| SAND | | | | ½ | ¼ | ¼ | ¼ |
| SOLIDS | | | | 9 | 10 | 11 | 11 |
| OIL | | | | 0 | 0 | 0 | 0 |
| SALINITY Ca | | | | 140 | 100 | 80 | 60 |
| M.B.C. ppb | | | | 17,5 | 15.0 | 15.0 | 15.0 |
| N ppm | | | | 0 | 0 | 55 | 55 |
| | | | | | | | |

REMARKS: SEAWATER GEL — SEAWATER DRILL CEMENT — - - - - - - DRILL 12 ¼" HOLE - -

| DEPTH | 1652 | 1723 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE | 7-1-81 | 7-1-81 | | | | | |
| TIME | 15.00 | 19.30 | | | | | |
| WEIGHT | 10.1 | 9.8 | | | | | |
| FUNNEL VISCOSITY | 41 | 45 | | | | | |
| PV/YP | 14/14 | 15/15 | | | | | |
| N/K | .58/.73 | .58/.78 | | | | | |
| GEL: INITIAL/10 MIN | 2/10 | 2/10 | | | | | |
| pH | 10.8 | 10.8 | | | | | |
| FILTRATE: API/API HTHP | 7.0/13.8 | 6.0/13.0 | | | | | |
| CAKE | 1-3 | 1-3 | | | | | |
| SALINITY Cl | 2800 | 2800 | | | | | |
| SAND | TR | ¼ | | | | | |
| SOLIDS | 7 | 8 | | | | | |
| OIL | 0 | 0 | | | | | |
| SALINITY Ca | 40 | 40 | | | | | |
| M.B.C. ppb | 15.0 | 15.0 | | | | | |
| N ppm | 70 | 50 | | | | | |
| | | | | | | | |

REMARKS: DRILL 12 ¼" HOLE

# 11 GEOLOGICAL SUMMARY

# PALMER No: 1

## GEOLOGICAL PROFILE

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

ALL DEPTHSMEASURED FROM KELLY BUSHING

## GIPPSLAND LIMESTONE 64m - 1050m

As predicted in this zone, Limestone was the most predominant lithology encountered. The limestone being calcarenite, white, grey to dark gray, tan, bioclastic, fine to medium grained with abundant fossil and shell fragments. It graded to marl with traces of dolomite and glauconite. From 203m to 260m Sandstone was present, being grey, grey white, glauconite, carbonaceous, slightly calcareous in part. It was moderately to well sorted and sub angular to sub spherical.

There was also sandstone present from 465m to 880m it was clear, white, tan, coarse to medium grained, clean, loss and well rounded to sub angular. It graded to calcarenite which was silty and marly with traces of glauconite and pyrite.

## LAKES ENTRANCE FORMATION 1050m - 1190m

The upper portion of this zone was found to be limestone which was very similar to those described above. Siltstone was first encountered as thin seams and gradually increased in thickness with depth. The siltstone was grey to medium grey and occasionally dark grey. It was friable to moderately hard, platy to blocky and carbonaceous, glauconite was abundant. The siltstone was sub-fissile, sandy in part, very fine grained and sub angular to sub rounded. Claystone was light grey, soft, sticky, carbonaceous, silty and in part gumbo.

## GURNARD FORMATION 1190m - 1211m

As predicted siltstone was dominant in this section and was found to be quite similar to those described above. Siltstone was grey to medium grey, light brown to brown, platy to blocky, moderately hard to hard, fissile, carbonaceous. Glauconite was abundant. Traces of pyrite and foraminifera were present throughout this section. Claystone was light grey, soft, sticky, carbonaceous, and silty in part.

## COARSE CLASTIC FORMATION 1211m - 1723m

This section was predominantly sandstone with thick beds of coal and thin beds of shale. The sandstone was clear, milky white, opaque, loose, medium to coarse grained. It was sub angular to sub rounded, with traces of pyrite and white mica. A few grains gave a dull orange fluorescence with a streaming cut and a pale yellow stain. The coal was dark brown, black, hard to very hard, platy to blocky, brittle, splintery and shiny. A thin stringer of shale at 1230m-1240m was brown to dark brown, mod hard to hard, platy to blocky, fissile, pyritic in part, carbonaceous and non calcareous. The maximum gas in this zone was 0.5 units C1 was present throughout this zone with traces of C2.

## 12 OVERBURDEN GRADIENT CALCULATIONS

DEPTH . . . . . .metres

BULK DENSITY . . . . . .gm/cc

OVERBURDEN PRESSURE INCREMENT .psi

CUMULATIVE OVERBURDEN PRESSURE .psi

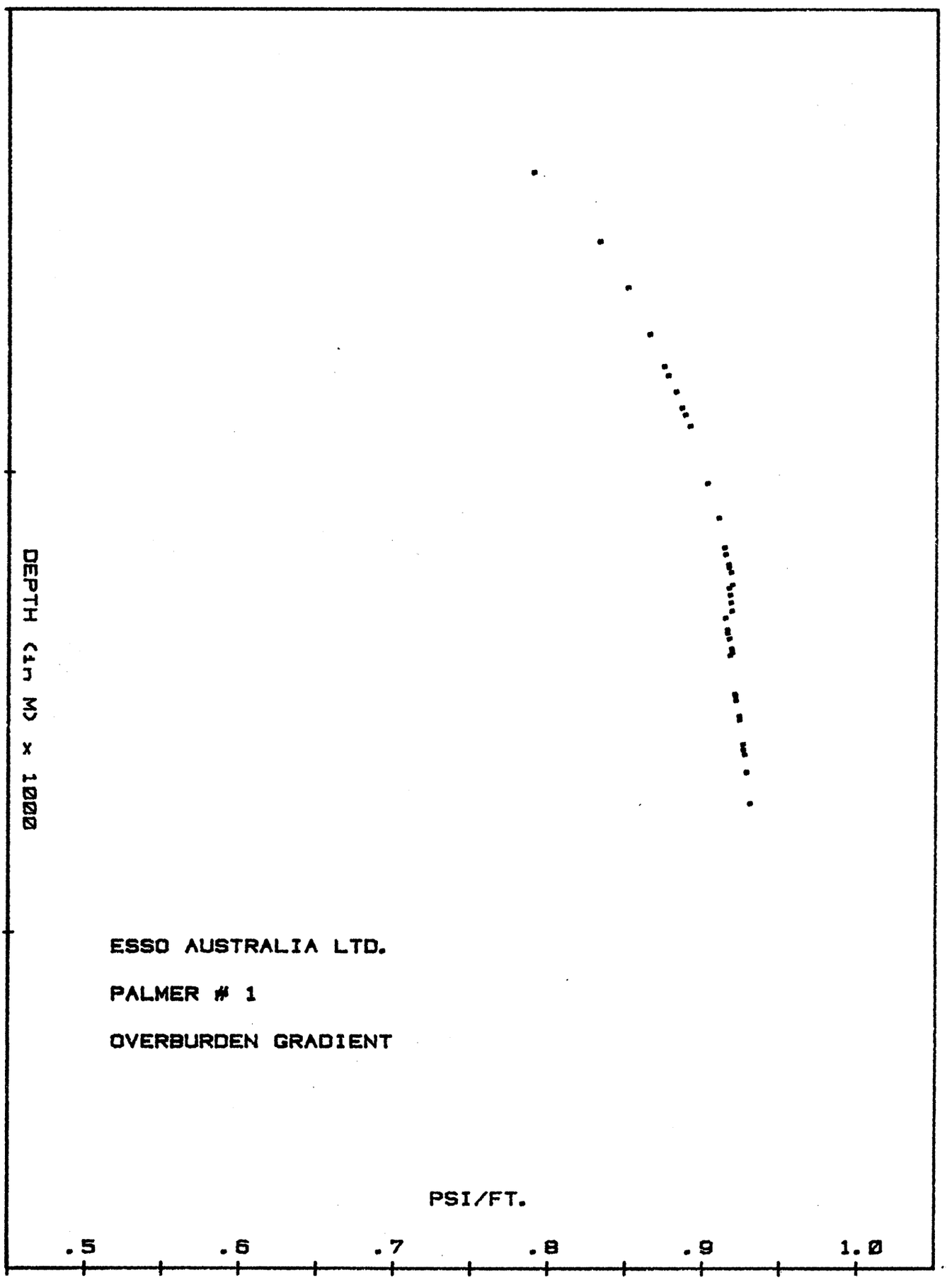
OVERBURDEN PRESSURE GRADIENT . .psi/ft

OVERBURDEN EQUIVILANT DENSITY .Pounds per gallon

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

# OVERBURDEN GRADIENT CALCULATIONS

| DEPTH from | DEPTH to | AVR.BULK DENSITY | O/BURDEN INCR. | O/BURDEN CUMM. | O/BURDEN GRAD. | O/BURDEN GRAD. |
|---|---|---|---|---|---|---|
| m | m | gms/cc | psi | psi | psi/ft | ppg |
| 0 | 64 | 1.02 | 28.27 | 28.27 | 0.442 | 8.49 |
| 64 | 350 | 2.00 | 247.68 | 275.94 | 0.788 | 15.16 |
| 350 | 500 | 2.15 | 139.64 | 415.58 | 0.831 | 15.98 |
| 500 | 600 | 2.17 | 93.96 | 509.55 | 0.849 | 16.33 |
| 600 | 700 | 2.19 | 94.83 | 604.37 | 0.863 | 16.60 |
| 700 | 770 | 2.23 | 67.59 | 671.96 | 0.873 | 16.78 |
| 770 | 790 | 2.25 | 19.49 | 691.45 | 0.875 | 16.83 |
| 790 | 825 | 2.30 | 34.86 | 726.31 | 0.880 | 16.93 |
| 825 | 860 | 2.25 | 34.10 | 760.40 | 0.884 | 17.00 |
| 860 | 875 | 2.35 | 15.26 | 775.67 | 0.886 | 17.05 |
| 875 | 900 | 2.30 | 24.90 | 800.57 | 0.890 | 17.11 |
| 900 | 1025 | 2.27 | 122.86 | 923.43 | 0.901 | 17.33 |
| 1025 | 1100 | 2.33 | 75.67 | 999.10 | 0.908 | 17.47 |
| 1100 | 1165 | 2.25 | 63.33 | 1062.42 | 0.912 | 17.54 |
| 1165 | 1180 | 2.22 | 14.42 | 1076.84 | 0.913 | 17.55 |
| 1180 | 1202 | 2.35 | 22.39 | 1099.23 | 0.914 | 17.59 |
| 1202 | 1209 | 2.26 | 6.85 | 1106.08 | 0.915 | 17.59 |
| 1209 | 1220 | 2.43 | 11.57 | 1117.65 | 0.916 | 17.62 |
| 1220 | 1248 | 2.20 | 26.67 | 1144.32 | 0.917 | 17.63 |
| 1248 | 1255 | 1.27 | 3.85 | 1148.17 | 0.915 | 17.59 |
| 1255 | 1270 | 2.25 | 14.61 | 1162.79 | 0.916 | 17.61 |
| 1270 | 1287 | 2.20 | 16.19 | 1178.98 | 0.916 | 17.62 |
| 1287 | 1305 | 2.22 | 17.30 | 1196.28 | 0.917 | 17.63 |
| 1305 | 1320 | 1.27 | 8.25 | 1204.53 | 0.913 | 17.55 |
| 1320 | 1345 | 2.25 | 24.36 | 1228.89 | 0.914 | 17.57 |
| 1345 | 1353 | 2.20 | 7.62 | 1236.51 | 0.914 | 17.58 |
| 1353 | 1365 | 2.45 | 12.73 | 1249.24 | 0.915 | 17.60 |
| 1365 | 1387 | 2.30 | 21.91 | 1271.15 | 0.916 | 17.62 |
| 1387 | 1395 | 2.35 | 8.14 | 1279.29 | 0.917 | 17.64 |
| 1395 | 1401 | 1.27 | 3.30 | 1282.59 | 0.915 | 17.61 |
| 1401 | 1484 | 2.25 | 80.86 | 1363.45 | 0.919 | 17.67 |
| 1484 | 1488 | 2.50 | 4.33 | 1367.78 | 0.919 | 17.68 |
| 1488 | 1498 | 2.20 | 9.53 | 1377.31 | 0.919 | 17.68 |
| 1498 | 1532 | 2.35 | 34.60 | 1411.90 | 0.922 | 17.72 |
| 1532 | 1540 | 2.20 | 7.62 | 1419.53 | 0.922 | 17.73 |
| 1540 | 1592 | 2.30 | 51.79 | 1471.31 | 0.924 | 17.77 |
| 1592 | 1603 | 2.20 | 10.48 | 1481.79 | 0.924 | 17.78 |
| 1603 | 1614 | 2.45 | 11.67 | 1493.46 | 0.925 | 17.79 |
| 1614 | 1652 | 2.25 | 37.02 | 1530.48 | 0.926 | 17.82 |
| 1652 | 1654 | 2.40 | 2.08 | 1532.56 | 0.927 | 17.82 |
| 1654 | 1721 | 2.27 | 65.85 | 1598.42 | 0.929 | 17.86 |


0
1
2
DEPTH (in M) x 1000
ESSO AUSTRALIA LTD.
PALMER # 1
OVERBURDEN GRADIENT
PSI/FT.
.5
.6
.7
.8
.9
1.0

## 13 SIDEWALL CORE GAS ANALYSIS

Chromatographic gas analysis was performed on the following sidewall core samples: -

| DEPTH (m) | GAS CONCENTRATION (p.p.m.) C1 | C2 | C3 | C4 | C5 | C6 |
|---|---|---|---|---|---|---|
| 1257 | tr | nil | nil | nil | nil | nil |
| 1260 | 142 | tr | nil | nil | nil | nil |
| 1264.5 | 328 | tr | nil | nil | nil | nil |
| 1265 | 416 | 18 | 4 | tr | nil | nil |
| 1192 | 58 | 7 | 2 | 1 | 1 | tr |
| 1198 | 100 | nil | nil | nil | nil | nil |

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

PALMER # 1, PORE PRESSURE AND L.O.T./P.I.T. SUMMARY

Palmer # 1 was drilled in the Gippsland Basin, it is thought that this basin is normally pressured and abnormal pressure was not expected. Core Laboratories unit F1802 monitored and calculated various parameters associated with pressure detection, the primary means of detection being the 'Drill Data Plot'. (see plots at end of this report)

The 'Drill Data Plot' shows the dc exponent trend. As can be seen from the plot a good trend does not develop until around 900m. A normal trend is followed to 1200m where the dc exponent points are completely scattered due to the widely varying lithology here; - sands and coals. A trend cannot be established in this section.

No interpretation can be made on the mud gas as the gas level exceeded 1u (0.05%) only rarely; - on trip gas peaks only.

No shale density measurements were taken as no true shales were encountered. The temperature plot shows a change in gradient at 1200m and 1240m. These changes though are due to the change in lithology here. The geothermal gradient was 3.5oC/100m.

As previously mentioned it was not possible to draw a 'Wireline Plot' as this log plots shale parameters and the few poor shales encountered in the well were insufficient to draw a plot from.

The 'Pressure Plot' is the conclusion log for the well. As can be seen it shows that the formations encountered in the drilling of Plamer # 1 are believed to be normally pressured throughout. The quantative data for this log is from the R.F.T. tests carried out in Bream # 4A, where the water saturated sands had a pressure gradient of 1445 p.s.i./m. This is equivilant to a pore pressure of 8.4 / 8.5 p.p.g. (from M.S.L.) It is believed that this pore pressure is representative of the formations above the Latrobe.

Overburden gradient calculations and a plot of the gradient are included in the report. It was not possible to derive a true fracture gradient as insufficient L.O.T. were taken. In fact only one P.I.T. was taken below the 13 3/8 " casing. There was no requirement to carry out L.O.T. as high mud weights were not anticipated. The P.I.T. that was carried out gave a value of 13.5 p.p.g. E.M.W. Based on this information the fracture gradient on the 'Pressure Plot' was drawn. The shape of the curve is based on data from wells in the U.S. Gulf Coast basin, and offset to match local data. A true fracture gradient for the Gippsland Basin cannot be drawn until further leak-off data is available.

## 15 COMPUTER DATA LISTINGS

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

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

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

The following data lists have been made for this well :

a. Bit record

b. Hydraulic analyses

c. Data list A

d. Data list B

e. Data list C

f. Data list D

### COMPUTER PLOTS

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

GEOPLOT - 1:5000 SCALE - 2m average

GEOPLOT 1:2000 SCALE - 2m average

DRILLING PARAMETER PLOT - 1:5000 SCALE - 2m average

COST ANALYSIS PLOT - 1:2000 SCALE - 2m average

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

## BIT RECORD

BIT SIZE . . . . . Inches

BIT COST . . . . . A dollars

JET SIZE . . . . . Thirty seconds of an inch

DEPTHS . . . . . Metres

BIT RUN (HOLE MADE). . Metres

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

AVERAGE ROP. . . . . Metres/hour

CUMULATIVE COST/METRE. A dollars

BIT CONDITION : Teeth

Bearings

Gauge . . . Inches

WELL: PALMER #1

BIT RECORD

| BIT No. | IADC CODE | MAKE & TYPE | SIZE | COST | NOZZLES | DEPTH IN | DEPTH OUT | BIT RUN | TOTAL HOURS | AROP | TRIP TIME | CCOST | TOTAL TURNS | CONDITION T | B | G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 111 | HTC OSC 3AJ | 17.500 | 2400.00 | 20 20 20 | 203.0 | 786.0 | 583.0 | 7.59 | 76.8 | 2.4 | 64.82 | 62594 | 2 | 2 | 0.000 |
| 3 | 114 | HTC X3A | 12.250 | 1440.00 | 15 15 15 | 786.0 | 1362.0 | 576.0 | 27.35 | 21.1 | 3.6 | 192.51 | 227640 | 8 | 8 | 0.750 |
| 4 | 135 | HTC XDG | 12.250 | 1440.00 | 13 13 13 | 1362.0 | 1485.0 | 123.0 | 12.50 | 9.8 | 4.0 | 486.82 | 100438 | 7 | 4 | 0.250 |
| 5 | 217 | HTC JD4 | 12.250 | 1740.00 | 13 13 13 | 1485.0 | 1605.6 | 120.6 | 12.88 | 9.4 | 4.6 | 527.94 | 113601 | 7 | 8 | 0.188 |
| 6 | 517 | HTC J22 | 12.250 | 5240.00 | 13 13 13 | 1605.6 | 1723.0 | 117.4 | 6.95 | 16.9 | 4.6 | 393.06 | 48561 | 2 | 2 | 0.000 |

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BIT PERFORMANCE ANALYSIS

DATA FROM WELL: PALMER #1

| BIT NUMBER | | BIT COST | HOLE MADE | BIT LIFE | TRIP TIME | AVERAGE ROP | CCOST |
|---|---|---|---|---|---|---|---|
| 2 | HTC OSC 3AJ | 2400.00 | 583.0 | 7.6 | 2.4 | 76.8 | 64.82 |
| 3 | HTC X3A | 1440.00 | 576.0 | 27.3 | 3.6 | 21.1 | 192.51 |
| 4 | HTC XDG | 1440.00 | 123.0 | 12.5 | 4.0 | 9.8 | 486.82 |
| 5 | HDT JD4 | 1740.00 | 120.6 | 12.9 | 4.6 | 9.4 | 527.94 |
| 6 | HTC J22 | 5240.00 | 117.4 | 6.9 | 4.6 | 16.9 | 393.06 |
| TOTAL | | 12260.00 | 1520.0 | 67.3 | 19.2 | 22.6 | 209.45 |

*

## HYDRAULIC ANALYSIS

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

DEPTH. . . . . Metres

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

ANNULAR VOLUMES. . . . Barrels, Barrels/metre

ANNULAR VELOCITIES . . Metres/minute

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

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

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

PRESSURE UNITS . . . . Pounds per square inch

HHP. . . . . Hydraulic horsepower at the bit

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

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

DENSITY UNITS. . . . . Pounds per gallon

CORE LAB

HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 300.0 AND TVD 300.0

SPM 1 118 SPM 2 122 FLOW RATE 1200

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| HWDC/OH | 0.673 | 13 | 42 | 19 | TURBULENT | | | 0.1 |
| DC/OH | 0.772 | 72 | 37 | 17 | TURBULENT | | | 0.2 |
| DC/CSG | 0.961 | 3 | 30 | 15 | TURBULENT | | | 0.0 |
| HWDP/CSG | 1.085 | 30 | 26 | 13 | TURBULENT | | | 0.0 |
| DP/CSG | 1.085 | 102 | 26 | 13 | TURBULENT | | | 0.1 |
| DP/RIS | 1.325 | 84 | 22 | 13 | TURBULENT | | | 0.0 |

TOTAL VOLUME 303 TOTAL PRESSURE DROP 0.4

LAG: 10.6 MINUTES 1253 STROKES #1 AND 1296 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1345.3 | HHP | 941 | IMPACT FORCE | 2233 |
| % SURFACE PRESSURE | 61.2 | HHP/sqin | 3.91 | JET VELOCITY | 127 |

PRESSURE BREAKDOWN:

| | |
|---|---|
| SURFACE | 110.3 |
| STRING | 711.7 |
| BIT | 1345.3 |
| ANNULUS | 0.4 |
| TOTAL | 2167.7 |

PUMP PRESSURE 2200.0 % DIFFERENCE 1.5

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 | 0.02 | ESTIMATED SWAB | 0.8 |
| | EFFECTIVE MUD WEIGHT | 8.58 | BOTTOM HOLE PRESSURE | 439.4 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 400.0 AND TVD 400.0

SPM 1 108 SPM 2 125 FLOW RATE 1165

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| HWDC/OH | 0.673 | 13 | 41 | 19 | TURBULENT | | | 0.1 |
| DC/OH | 0.772 | 74 | 36 | 17 | TURBULENT | | | 0.2 |
| HWDP/OH | 0.896 | 25 | 31 | 14 | TURBULENT | | | 0.0 |
| DP/OH | 0.896 | 62 | 31 | 14 | TURBULENT | | | 0.1 |
| DP/CSG | 1.085 | 135 | 26 | 13 | TURBULENT | | | 0.1 |
| DP/RIS | 1.325 | 84 | 21 | 13 | TURBULENT | | | 0.0 |
| TOTAL VOLUME | | 393 | | | | | TOTAL PRESSURE DROP | 0.5 |

LAG: 14.2 MINUTES 1531 STROKES #1 AND 1772 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1268.0 | HHP | 861 | IMPACT FORCE | 2105 |
| % SURFACE PRESSURE | 57.6 | HHP/sqin | 3.58 | JET VELOCITY | 123 |

PRESSURE BREAKDOWN:

| | |
|---|---|
| SURFACE | 104.5 |
| STRING | 735.0 |
| BIT | 1268.0 |
| ANNULUS | 0.5 |
| TOTAL | 2108.0 |

PUMP PRESSURE 2200.0 % DIFFERENCE 4.2

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 8.60 | HYDROSTATIC PRESSURE | 586.9 |
| CIRCULATING: | ECD | 8.61 | CIRCULATING PRESSURE | 587.4 |
| PULLING OUT: | TRIP MARGIN | 0.01 | ESTIMATED SWAB | 1.0 |
| | EFFECTIVE MUD WEIGHT | 8.59 | BOTTOM HOLE PRESSURE | 585.9 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 500.0 AND TVD 500.0

SPM 1 110 SPM 2 124 FLOW RATE 1170

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| HWDC/OH | 0.673 | 13 | 41 | 19 | TURBULENT | | | 0.1 |
| DC/OH | 0.772 | 74 | 36 | 17 | TURBULENT | | | 0.2 |
| HWDP/OH | 0.896 | 25 | 31 | 14 | TURBULENT | | | 0.0 |
| DP/OH | 0.896 | 152 | 31 | 14 | TURBULENT | | | 0.2 |
| DP/CSG | 1.085 | 135 | 26 | 13 | TURBULENT | | | 0.1 |
| DP/RIS | 1.325 | 84 | 21 | 13 | TURBULENT | | | 0.0 |
| TOTAL VOLUME | | 483 | | | | | TOTAL PRESSURE DROP | 0.6 |

LAG: 17.3 MINUTES 1906 STROKES #1 AND 2149 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1278.9 | HHP | 873 | IMPACT FORCE | 2123 |
| % SURFACE PRESSURE | 53.3 | HHP/sqin | 3.63 | JET VELOCITY | 124 |

PRESSURE BREAKDOWN:

| | | | |
|---|---|---|---|
| SURFACE | 105.3 | | |
| STRING | 801.4 | | |
| BIT | 1278.9 | | |
| ANNULUS | 0.6 | | |
| TOTAL | 2186.3 | PUMP PRESSURE 2400.0 | % DIFFERENCE 8.9 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 8.60 | HYDROSTATIC PRESSURE | 733.6 |
| CIRCULATING: | ECD | 8.61 | CIRCULATING PRESSURE | 734.2 |
| PULLING OUT: | TRIP MARGIN | 0.01 | ESTIMATED SWAB | 1.2 |
| | EFFECTIVE MUD WEIGHT | 8.59 | BOTTOM HOLE PRESSURE | 732.4 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 600.0 AND TVD 600.0

SPM 1 110 SPM 2 124 FLOW RATE 1170

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| HWDC/OH | 0.673 | 13 | 41 | 19 | TURBULENT | | | 0.1 |
| DC/OH | 0.772 | 74 | 36 | 17 | TURBULENT | | | 0.2 |
| HWDP/OH | 0.896 | 25 | 31 | 14 | TURBULENT | | | 0.0 |
| DP/OH | 0.896 | 242 | 31 | 14 | TURBULENT | | | 0.3 |
| DP/CSG | 1.085 | 135 | 26 | 13 | TURBULENT | | | 0.1 |
| DP/RIS | 1.325 | 84 | 21 | 13 | TURBULENT | | | 0.0 |
| TOTAL VOLUME | | 572 | | | | | TOTAL PRESSURE DROP | 0.7 |

LAG: 20.5 MINUTES 2260 STROKES #1 AND 2548 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1278.9 | HHP | 873 | IMPACT FORCE | 2123 |
| % SURFACE PRESSURE | 53.3 | HHP/sqin | 3.63 | JET VELOCITY | 124 |

PRESSURE BREAKDOWN:

| | | | | | |
|---|---|---|---|---|---|
| SURFACE | 105.3 | | | | |
| STRING | 862.1 | | | | |
| BIT | 1278.9 | | | | |
| ANNULUS | 0.7 | | | | |
| TOTAL | 2247.1 | PUMP PRESSURE | 2400.0 | % DIFFERENCE | 6.4 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 8.60 | HYDROSTATIC PRESSURE | 880.3 |
| CIRCULATING: | ECD | 8.61 | CIRCULATING PRESSURE | 881.0 |
| PULLING OUT: | TRIP MARGIN | 0.01 | ESTIMATED SWAB | 1.4 |
| | EFFECTIVE MUD WEIGHT | 8.59 | BOTTOM HOLE PRESSURE | 878.9 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 700.0 AND TVD 700.0

SPM 1 124 SPM 2 110 FLOW RATE 1170

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| HWDC/OH | 0.673 | 13 | 41 | 19 | TURBULENT | | | 0.1 |
| DC/OH | 0.772 | 74 | 36 | 17 | TURBULENT | | | 0.2 |
| HWDP/OH | 0.896 | 25 | 31 | 14 | TURBULENT | | | 0.0 |
| DP/OH | 0.896 | 331 | 31 | 14 | TURBULENT | | | 0.4 |
| DP/CSG | 1.085 | 135 | 26 | 13 | TURBULENT | | | 0.1 |
| DP/RIS | 1.325 | 84 | 21 | 13 | TURBULENT | | | 0.0 |
| TOTAL VOLUME | | 662 | | | | | TOTAL PRESSURE DROP | 0.8 |

LAG: 23.8 MINUTES 2947 STROKES #1 AND 2614 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1278.9 | HHP | 873 | IMPACT FORCE | 2123 |
| % SURFACE PRESSURE | 51.0 | HHP/sqin | 3.63 | JET VELOCITY | 124 |

PRESSURE BREAKDOWN:

| | | | |
|---|---|---|---|
| SURFACE | 105.3 | | |
| STRING | 922.9 | | |
| BIT | 1278.9 | | |
| ANNULUS | 0.8 | | |
| TOTAL | 2307.9 | PUMP PRESSURE 2510.0 | % DIFFERENCE 8.1 |

BOTTOM HOLE PRESSURES:

| | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 8.60 | HYDROSTATIC PRESSURE 1027.0 |
| CIRCULATING: | ECD | 8.61 | CIRCULATING PRESSURE 1027.9 |
| PULLING OUT: | TRIP MARGIN | 0.01 | ESTIMATED SWAB 1.7 |
| | EFFECTIVE MUD WEIGHT | 8.59 | BOTTOM HOLE PRESSURE 1025.4 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 800.0 AND TVD 800.0

SPM 1 76 SPM 2 84 FLOW RATE 800

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| DC/OH | 0.274 | 8 | 69 | 133 | LAMINAR | 3 | 67 | 1.6 |
| DC/CSG | 0.287 | 41 | 66 | 132 | LAMINAR | 3 | 64 | 6.8 |
| HWDP/CSG | 0.411 | 34 | 46 | 124 | LAMINAR | 1 | 45 | 1.7 |
| DP/CSG | 0.411 | 198 | 46 | 124 | LAMINAR | 1 | 45 | 9.7 |
| DP/RIS | 1.325 | 84 | 14 | 111 | LAMINAR | 0 | 14 | 0.3 |

TOTAL VOLUME 365 TOTAL PRESSURE DROP 20.0

LAG: 19.2 MINUTES 1459 STROKES #1 AND 1612 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1955.6 | HHP | 912 | IMPACT FORCE | 1826 |
| % SURFACE PRESSURE | 65.8 | HHP/sqin | 7.74 | JET VELOCITY | 151 |

PRESSURE BREAKDOWN:

| | |
|---|---|
| SURFACE | 61.4 |
| STRING | 808.9 |
| BIT | 1955.6 |
| ANNULUS | 20.0 |
| TOTAL | 2846.0 |

PUMP PRESSURE 2970.0 % DIFFERENCE 4.2

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 8.90 | HYDROSTATIC PRESSURE | 1214.7 |
| CIRCULATING: | ECD | 9.05 | CIRCULATING PRESSURE | 1234.7 |
| PULLING OUT: | TRIP MARGIN | 0.29 | ESTIMATED SWAB | 40.1 |
| | EFFECTIVE MUD WEIGHT | 8.61 | BOTTOM HOLE PRESSURE | 1174.6 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 900.0 AND TVD 900.0

SPM 1 80 SPM 2 83 FLOW RATE 815

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| DC/OH | 0.274 | 36 | 71 | 140 | LAMINAR | 3 | 68 | 7.4 |
| DC/CSG | 0.287 | 12 | 68 | 139 | LAMINAR | 2 | 65 | 2.2 |
| HWDP/CSG | 0.411 | 34 | 47 | 128 | LAMINAR | 1 | 46 | 1.8 |
| DP/CSG | 0.411 | 239 | 47 | 128 | LAMINAR | 1 | 46 | 12.7 |
| DP/RIS | 1.325 | 84 | 15 | 114 | LAMINAR | 0 | 14 | 0.3 |
| TOTAL VOLUME | | 405 | | | TOTAL PRESSURE DROP | | | 24.4 |

LAG: 20.9 MINUTES 1671 STROKES #1 AND 1734 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 2020.5 | HHP | 960 | IMPACT FORCE | 1887 |
| % SURFACE PRESSURE | 65.4 | HHP/sqin | 8.15 | JET VELOCITY | 153 |

PRESSURE BREAKDOWN:

| | |
|---|---|
| SURFACE | 65.9 |
| STRING | 905.5 |
| BIT | 2020.5 |
| ANNULUS | 24.4 |
| TOTAL | 3016.3 |

PUMP PRESSURE 3090.0 % DIFFERENCE 2.4

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 8.86 | HYDROSTATIC PRESSURE | 1360.4 |
| CIRCULATING: | ECD | 9.02 | CIRCULATING PRESSURE | 1384.7 |
| PULLING OUT: | TRIP MARGIN | 0.32 | ESTIMATED SWAB | 48.7 |
| | EFFECTIVE MUD WEIGHT | 8.54 | BOTTOM HOLE PRESSURE | 1311.7 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1000.0 AND TVD 1000.0

SPM 1 50 SPM 2 0 FLOW RATE 250

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 | 22 | 107 | LAMINAR | 1 | 21 | 4.0 |
| HWDP/OH | 0.398 | 23 | 15 | 97 | LAMINAR | 0 | 14 | 0.5 |
| HWDP/CSG | 0.411 | 10 | 14 | 97 | LAMINAR | 0 | 14 | 0.2 |
| DP/CSG | 0.411 | 280 | 14 | 97 | LAMINAR | 0 | 14 | 6.0 |
| DP/RIS | 1.325 | 84 | 4 | 85 | LAMINAR | 0 | 4 | 0.1 |
| TOTAL VOLUME | | 445 | | | TOTAL PRESSURE DROP | | | 10.8 |

LAG: 74.8 MINUTES 3740 STROKES #1 AND 0 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 206.0 | HHP | 30 | IMPACT FORCE | 192 |
| % SURFACE PRESSURE | 60.6 | HHP/sqin | 0.25 | JET VELOCITY | 47 |

PRESSURE BREAKDOWN:

| | | | |
|---|---|---|---|
| SURFACE | 7.9 | | |
| STRING | 112.5 | | |
| BIT | 206.0 | | |
| ANNULUS | 10.8 | | |
| TOTAL | 337.2 | PUMP PRESSURE | 340.0 |
| | | % DIFFERENCE | 0.8 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 9.60 | HYDROSTATIC PRESSURE | 1637.8 |
| CIRCULATING: | ECD | 9.66 | CIRCULATING PRESSURE | 1648.6 |
| PULLING OUT: | TRIP MARGIN | 0.13 | ESTIMATED SWAB | 21.7 |
| | EFFECTIVE MUD WEIGHT | 9.47 | BOTTOM HOLE PRESSURE | 1616.1 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1100.0 AND TVD 1100.0

SPM 1 76 SPM 2 64 FLOW RATE 700

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 | 61 | 120 | LAMINAR | 2 | 59 | 8.2 |
| HWDP/OH | 0.398 | 33 | 42 | 105 | LAMINAR | 1 | 41 | 1.5 |
| DP/OH | 0.398 | 30 | 42 | 105 | LAMINAR | 1 | 41 | 1.3 |
| DP/CSG | 0.411 | 290 | 40 | 104 | LAMINAR | 1 | 40 | 11.7 |
| DP/RIS | 1.325 | 84 | 13 | 87 | LAMINAR | 0 | 12 | 0.2 |
| TOTAL VOLUME | | 485 | | | | TOTAL PRESSURE DROP | | 22.9 |

LAG: 29.1 MINUTES 2212 STROKES #1 AND 1863 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1716.0 | HHP | 701 | IMPACT FORCE | 1602 |
| % SURFACE PRESSURE | 61.3 | HHP/sqin | 5.94 | JET VELOCITY | 132 |

PRESSURE BREAKDOWN:

| | | | | | |
|---|---|---|---|---|---|
| SURFACE | 59.7 | | | | |
| STRING | 888.9 | | | | |
| BIT | 1716.0 | | | | |
| ANNULUS | 22.9 | | | | |
| TOTAL | 2687.4 | PUMP PRESSURE | 2800.0 | % DIFFERENCE | 4.0 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 10.20 | HYDROSTATIC PRESSURE | 1914.1 |
| CIRCULATING: | ECD | 10.32 | CIRCULATING PRESSURE | 1937.0 |
| PULLING OUT: | TRIP MARGIN | 0.24 | ESTIMATED SWAB | 45.8 |
| | EFFECTIVE MUD WEIGHT | 9.96 | BOTTOM HOLE PRESSURE | 1868.4 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1200.0 AND TVD 1200.0

SPM 1 70 SPM 2 76 FLOW RATE 730

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 | 63 | 120 | LAMINAR | 2 | 61 | 8.4 |
| HWDP/OH | 0.398 | 33 | 44 | 105 | LAMINAR | 1 | 43 | 1.5 |
| DP/OH | 0.398 | 70 | 44 | 105 | LAMINAR | 1 | 43 | 3.1 |
| DP/CSG | 0.411 | 290 | 42 | 104 | LAMINAR | 1 | 41 | 12.0 |
| DP/RIS | 1.325 | 84 | 13 | 87 | LAMINAR | 0 | 13 | 0.2 |
| TOTAL VOLUME | | 525 | | | TOTAL PRESSURE DROP | | | 25.2 |

LAG: 30.2 MINUTES 2114 STROKES #1 AND 2296 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1866.2 | HHP | 795 | IMPACT FORCE | 1743 |
| % SURFACE PRESSURE | 63.9 | HHP/sqin | 6.74 | JET VELOCITY | 137 |

PRESSURE BREAKDOWN:

| | | | | | |
|---|---|---|---|---|---|
| SURFACE | 64.4 | | | | |
| STRING | 995.7 | | | | |
| BIT | 1866.2 | | | | |
| ANNULUS | 25.2 | | | | |
| TOTAL | 2951.5 | PUMP PRESSURE | 2920.0 | % DIFFERENCE | 1.1 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 10.20 | HYDROSTATIC PRESSURE | 2088.2 |
| CIRCULATING: | ECD | 10.32 | CIRCULATING PRESSURE | 2113.3 |
| PULLING OUT: | TRIP MARGIN | 0.25 | ESTIMATED SWAB | 50.4 |
| | EFFECTIVE MUD WEIGHT | 9.95 | BOTTOM HOLE PRESSURE | 2037.8 |

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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1300.0 AND TVD 1300.0

SPM 1 72 SPM 2 70 FLOW RATE 710

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 | 62 | 120 | LAMINAR | 2 | 59 | 8.3 |
| HWDP/OH | 0.398 | 33 | 42 | 105 | LAMINAR | 1 | 41 | 1.5 |
| DP/OH | 0.398 | 110 | 42 | 105 | LAMINAR | 1 | 41 | 4.9 |
| DP/CSG | 0.411 | 290 | 41 | 104 | LAMINAR | 1 | 40 | 11.8 |
| DP/RIS | 1.325 | 84 | 13 | 87 | LAMINAR | 0 | 13 | 0.2 |
| TOTAL VOLUME | | 565 | | | TOTAL PRESSURE DROP | | | 26.6 |

LAG: 33.4 MINUTES 2406 STROKES #1 AND 2339 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 1765.4 | HHP | 731 | IMPACT FORCE | 1649 |
| % SURFACE PRESSURE | 60.9 | HHP/sqin | 6.20 | JET VELOCITY | 134 |

PRESSURE BREAKDOWN:

| | | | | | |
|---|---|---|---|---|---|
| SURFACE | 61.2 | | | | |
| STRING | 982.4 | | | | |
| BIT | 1765.4 | | | | |
| ANNULUS | 26.6 | | | | |
| TOTAL | 2835.6 | PUMP PRESSURE | 2900.0 | % DIFFERENCE | 2.2 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 10.20 | HYDROSTATIC PRESSURE | 2262.2 |
| CIRCULATING: | ECD | 10.32 | CIRCULATING PRESSURE | 2288.8 |
| PULLING OUT: | TRIP MARGIN | 0.24 | ESTIMATED SWAB | 53.2 |
| | EFFECTIVE MUD WEIGHT | 9.96 | BOTTOM HOLE PRESSURE | 2209.0 |

CORE LAB

HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1400.0 AND TVD 1400.0

SPM 1 65 SPM 2 62 FLOW RATE 635

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| DC/OH | 0.274 | 47 | 55 | 114 | LAMINAR | 1 | 54 | 7.4 |
| HWDP/OH | 0.398 | 33 | 38 | 97 | LAMINAR | 0 | 38 | 1.2 |
| DP/OH | 0.398 | 150 | 38 | 97 | LAMINAR | 0 | 38 | 5.6 |
| DP/CSG | 0.411 | 290 | 37 | 96 | LAMINAR | 0 | 36 | 9.9 |
| DP/RIS | 1.325 | 84 | 11 | 75 | LAMINAR | 0 | 11 | 0.1 |
| TOTAL VOLUME | | 604 | | | TOTAL PRESSURE DROP | | | 24.4 |

LAG: 40.0 MINUTES 2600 STROKES #1 AND 2480 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 2552.0 | HHP | 945 | IMPACT FORCE | 1790 |
| % SURFACE PRESSURE | 85.1 | HHP/sqin | 8.02 | JET VELOCITY | 159 |

PRESSURE BREAKDOWN:

| | | | |
|---|---|---|---|
| SURFACE | 53.3 | | |
| STRING | 886.4 | | |
| BIT | 2552.0 | | |
| ANNULUS | 24.4 | | |
| TOTAL | 3516.1 | PUMP PRESSURE 3000.0 | % DIFFERENCE 17.2 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 10.40 | HYDROSTATIC PRESSURE | 2484.0 |
| CIRCULATING: | ECD | 10.50 | CIRCULATING PRESSURE | 2508.3 |
| PULLING OUT: | TRIP MARGIN | 0.20 | ESTIMATED SWAB | 48.7 |
| | EFFECTIVE MUD WEIGHT | 10.20 | BOTTOM HOLE PRESSURE | 2435.3 |

CORE LAB
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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1500.0 AND TVD 1500.0

SPM 1 63 SPM 2 67 FLOW RATE 650

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| DC/OH | 0.274 | 47 | 56 | 106 | LAMINAR | 1 | 55 | 6.7 |
| HWDP/OH | 0.398 | 33 | 39 | 90 | LAMINAR | 0 | 38 | 1.1 |
| DP/OH | 0.398 | 190 | 39 | 90 | LAMINAR | 0 | 38 | 6.5 |
| DP/CSG | 0.411 | 290 | 38 | 90 | LAMINAR | 0 | 37 | 9.1 |
| DP/RIS | 1.325 | 84 | 12 | 71 | LAMINAR | 0 | 12 | 0.1 |
| TOTAL VOLUME | | 644 | | | TOTAL PRESSURE DROP | | | 23.6 |

LAG: 41.6 MINUTES 2624 STROKES #1 AND 2790 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 2674.0 | HHP | 1014 | IMPACT FORCE | 1876 |
| % SURFACE PRESSURE | 89.1 | HHP/sqin | 8.60 | JET VELOCITY | 163 |

PRESSURE BREAKDOWN:

| | | | |
|---|---|---|---|
| SURFACE | 53.7 | | |
| STRING | 924.2 | | |
| BIT | 2674.0 | | |
| ANNULUS | 23.6 | | |
| TOTAL | 3675.6 | PUMP PRESSURE 3000.0 | % DIFFERENCE 22.5 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 10.40 | HYDROSTATIC PRESSURE | 2661.4 |
| CIRCULATING: | ECD | 10.49 | CIRCULATING PRESSURE | 2685.0 |
| PULLING OUT: | TRIP MARGIN | 0.18 | ESTIMATED SWAB | 47.2 |
| | EFFECTIVE MUD WEIGHT | 10.22 | BOTTOM HOLE PRESSURE | 2614.2 |

CORE LAB

HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1600.0 AND TVD 1600.0

SPM 1 65 SPM 2 65 FLOW RATE 650

ANNULAR HYDRAULICS:

| ANNULUS TYPE | VOL/ UNIT | VOL | ANN VEL | CRIT VEL | TYPE OF FLOW | SLIP VEL | ASCEND VEL | PRESSURE DROP |
|---|---|---|---|---|---|---|---|---|
| DC/OH | 0.274 | 47 | 56 | 108 | LAMINAR | 1 | 55 | 6.7 |
| HWDP/OH | 0.398 | 33 | 39 | 92 | LAMINAR | 0 | 38 | 1.1 |
| DP/OH | 0.398 | 229 | 39 | 92 | LAMINAR | 0 | 38 | 7.9 |
| DP/CSG | 0.411 | 290 | 38 | 91 | LAMINAR | 0 | 37 | 9.1 |
| DP/RIS | 1.325 | 84 | 12 | 72 | LAMINAR | 0 | 12 | 0.1 |
| TOTAL VOLUME | | 684 | | | TOTAL PRESSURE DROP | | | 25.0 |

LAG: 44.2 MINUTES 2875 STROKES #1 AND 2875 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 2612.3 | HHP | 990 | IMPACT FORCE | 1832 |
| % SURFACE PRESSURE | 88.6 | HHP/sqin | 8.40 | JET VELOCITY | 163 |

PRESSURE BREAKDOWN:

| | | | |
|---|---|---|---|
| SURFACE | 52.7 | | |
| STRING | 937.5 | | |
| BIT | 2612.3 | | |
| ANNULUS | 25.0 | | |
| TOTAL | 3627.5 | PUMP PRESSURE 2950.0 | % DIFFERENCE 23.0 |

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 10.16 | HYDROSTATIC PRESSURE | 2773.3 |
| CIRCULATING: | ECD | 10.25 | CIRCULATING PRESSURE | 2798.3 |
| PULLING OUT: | TRIP MARGIN | 0.18 | ESTIMATED SWAB | 49.9 |
| | EFFECTIVE MUD WEIGHT | 9.98 | BOTTOM HOLE PRESSURE | 2723.4 |

CORE LAB
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HYDRAULICS ANALYSIS PROGRAM

HYDRAULICS CALCULATIONS AT DEPTH 1700.0 AND TVD 1700.0

SPM 1 62 SPM 2 63 FLOW RATE 625

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 | 54 | 104 | LAMINAR | 1 | 53 | 6.2 |
| HWDP/OH | 0.398 | 33 | 37 | 88 | LAMINAR | 0 | 37 | 1.0 |
| DP/OH | 0.398 | 269 | 37 | 88 | LAMINAR | 0 | 37 | 8.4 |
| DP/CSG | 0.411 | 290 | 36 | 87 | LAMINAR | 0 | 36 | 8.3 |
| DP/RIS | 1.325 | 84 | 11 | 68 | LAMINAR | 0 | 11 | 0.1 |
| TOTAL VOLUME | | 724 | | | TOTAL PRESSURE DROP | | | 24.0 |

LAG: 48.7 MINUTES 3018 STROKES #1 AND 3066 STROKES #2

BIT HYDRAULICS:

| | | | | | |
|---|---|---|---|---|---|
| PRESSURE DROP | 2401.0 | HHP | 875 | IMPACT FORCE | 1684 |
| % SURFACE PRESSURE | 82.8 | HHP/sqin | 7.43 | JET VELOCITY | 157 |

PRESSURE BREAKDOWN:

| | |
|---|---|
| SURFACE | 48.9 |
| STRING | 897.6 |
| BIT | 2401.0 |
| ANNULUS | 24.0 |
| TOTAL | 3371.6 |

PUMP PRESSURE 2900.0 % DIFFERENCE 16.3

BOTTOM HOLE PRESSURES:

| | | DENSITY UNITS | | PRESSURE UNITS |
|---|---|---|---|---|
| NOT CIRCULATING: | MUD WEIGHT | 10.10 | HYDROSTATIC PRESSURE | 2929.2 |
| CIRCULATING: | ECD | 10.18 | CIRCULATING PRESSURE | 2953.3 |
| PULLING OUT: | TRIP MARGIN | 0.17 | ESTIMATED SWAB | 48.1 |
| | EFFECTIVE MUD WEIGHT | 9.93 | BOTTOM HOLE PRESSURE | 2881.1 |

## 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 revoloutions per minute

MW . . . . . Mud weight in,in pounds per gallon

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

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

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

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

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

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

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

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

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 2 | IADC CODE | 111 | INTERVAL | 203.0- 786.0 |
| HTC OSC 3AJ | | SIZE | 17.500 | NOZZLES | 20 20 20 |
| COST | 2400.00 | TRIP TIME | 2.4 | BIT RUN | 583.0 |
| TOTAL HOURS | 7.59 | TOTAL TURNS | 62594 | CONDITION | T2 R2 G0.000 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 210.0 | 30.0 | 12.0 | 130 | 8.6 | 1.06 | 0.23 | 1820 | 118 | 1675 | 8.4 | 11.3 |
| 220.0 | 60.0 | 12.0 | 130 | 8.6 | 0.89 | 0.40 | 3120 | 59.03 | 724.56 | 8.4 | 11.3 |
| 230.0 | 150.0 | 10.0 | 130 | 8.6 | 0.64 | 0.47 | 3640 | 23.61 | 464.95 | 8.4 | 11.4 |
| 240.0 | 100.0 | 8.0 | 130 | 8.6 | 0.71 | 0.57 | 4420 | 35.42 | 348.86 | 8.4 | 11.4 |
| 250.0 | 105.0 | 8.0 | 130 | 8.6 | 0.70 | 0.66 | 5163 | 33.73 | 281.81 | 8.4 | 11.4 |
| 260.0 | 75.0 | 8.0 | 130 | 8.6 | 0.77 | 0.80 | 6203 | 47.23 | 240.66 | 8.4 | 11.5 |
| 265.0 | 50.0 | 6.0 | 130 | 8.6 | 0.82 | 0.90 | 6983 | 70.84 | 226.96 | 8.4 | 11.5 |
| 270.0 | 100.0 | 8.0 | 130 | 8.6 | 0.71 | 0.95 | 7373 | 35.42 | 212.67 | 8.4 | 11.5 |
| 275.0 | 75.0 | 8.0 | 130 | 8.6 | 0.77 | 1.01 | 7893 | 47.23 | 201.18 | 8.4 | 11.5 |
| 280.0 | 60.0 | 9.0 | 130 | 8.6 | 0.84 | 1.10 | 8543 | 59.03 | 191.95 | 8.4 | 11.5 |
| 285.0 | 82.0 | 8.0 | 127 | 8.6 | 0.75 | 1.16 | 9007 | 43.20 | 182.88 | 8.4 | 11.6 |
| 290.0 | 82.0 | 10.0 | 127 | 8.6 | 0.78 | 1.22 | 9472 | 43.20 | 174.85 | 8.4 | 11.6 |
| 295.0 | 36.0 | 10.0 | 125 | 8.6 | 0.97 | 1.36 | 10514 | 98.39 | 170.70 | 8.4 | 11.6 |
| 300.0 | 36.0 | 10.0 | 125 | 8.6 | 0.97 | 1.49 | 11555 | 98.39 | 166.97 | 8.4 | 11.6 |
| 305.0 | 72.0 | 10.0 | 140 | 8.6 | 0.83 | 1.56 | 12139 | 49.19 | 161.20 | 8.4 | 11.6 |
| 310.0 | 72.0 | 8.0 | 140 | 8.6 | 0.80 | 1.63 | 12722 | 49.19 | 155.96 | 8.4 | 11.6 |
| 315.0 | 110.0 | 8.0 | 140 | 8.6 | 0.70 | 1.68 | 13104 | 32.20 | 150.44 | 8.4 | 11.7 |
| 320.0 | 110.0 | 6.0 | 135 | 8.6 | 0.66 | 1.72 | 13472 | 32.20 | 145.38 | 8.4 | 11.7 |
| 325.0 | 136.0 | 8.0 | 135 | 8.6 | 0.65 | 1.76 | 13770 | 26.04 | 140.49 | 8.4 | 11.7 |
| 330.0 | 136.0 | 10.0 | 135 | 8.6 | 0.68 | 1.80 | 14068 | 26.04 | 135.99 | 8.4 | 11.7 |
| 335.0 | 151.0 | 11.0 | 140 | 8.6 | 0.67 | 1.83 | 14346 | 23.46 | 131.72 | 8.4 | 11.7 |
| 340.0 | 151.0 | 11.0 | 140 | 8.6 | 0.67 | 1.86 | 14624 | 23.46 | 127.77 | 8.4 | 11.8 |
| 345.0 | 141.0 | 8.0 | 135 | 8.6 | 0.64 | 1.90 | 14911 | 25.12 | 124.16 | 8.4 | 11.8 |
| 350.0 | 142.0 | 12.0 | 135 | 8.6 | 0.69 | 1.94 | 15196 | 24.94 | 120.78 | 8.4 | 11.8 |
| 355.0 | 153.0 | 12.0 | 130 | 8.6 | 0.66 | 1.97 | 15451 | 23.15 | 117.57 | 8.4 | 11.8 |
| 360.0 | 198.0 | 10.0 | 135 | 8.6 | 0.59 | 1.99 | 15656 | 17.89 | 114.40 | 8.4 | 11.8 |
| 365.0 | 198.0 | 10.0 | 135 | 8.6 | 0.59 | 2.02 | 15860 | 17.89 | 111.42 | 8.4 | 11.8 |
| 370.0 | 166.0 | 10.0 | 140 | 8.6 | 0.64 | 2.05 | 16113 | 21.34 | 108.72 | 8.4 | 11.9 |
| 375.0 | 166.0 | 10.0 | 140 | 8.6 | 0.64 | 2.08 | 16366 | 21.34 | 106.18 | 8.4 | 11.9 |
| 380.0 | 165.0 | 12.0 | 145 | 8.6 | 0.67 | 2.11 | 16630 | 21.47 | 103.79 | 8.4 | 11.9 |
| 385.0 | 165.0 | 12.0 | 145 | 8.6 | 0.67 | 2.14 | 16894 | 21.47 | 101.53 | 8.4 | 11.9 |
| 390.0 | 205.0 | 12.0 | 145 | 8.6 | 0.62 | 2.16 | 17106 | 17.28 | 99.27 | 8.4 | 11.9 |
| 395.0 | 200.0 | 15.0 | 140 | 8.6 | 0.65 | 2.19 | 17316 | 17.71 | 97.15 | 8.4 | 11.9 |
| 400.0 | 165.0 | 8.0 | 140 | 8.6 | 0.61 | 2.22 | 17570 | 21.47 | 95.23 | 8.4 | 12.0 |
| 405.0 | 160.0 | 10.0 | 142 | 8.6 | 0.65 | 2.25 | 17837 | 22.14 | 93.42 | 8.4 | 12.0 |
| 410.0 | 185.0 | 15.0 | 140 | 8.6 | 0.67 | 2.28 | 18064 | 19.15 | 91.63 | 8.4 | 12.0 |
| 415.0 | 185.0 | 14.0 | 140 | 8.6 | 0.66 | 2.30 | 18291 | 19.15 | 89.92 | 8.4 | 12.0 |
| 420.0 | 227.0 | 12.0 | 140 | 8.6 | 0.59 | 2.33 | 18476 | 15.60 | 88.20 | 8.4 | 12.0 |
| 425.0 | 220.0 | 10.0 | 140 | 8.6 | 0.57 | 2.35 | 18667 | 16.10 | 86.58 | 8.4 | 12.0 |
| 430.0 | 202.0 | 15.0 | 145 | 8.6 | 0.65 | 2.37 | 18882 | 17.53 | 85.06 | 8.4 | 12.1 |
| 435.0 | 202.0 | 16.0 | 145 | 8.6 | 0.66 | 2.40 | 19097 | 17.53 | 83.60 | 8.4 | 12.1 |
| 440.0 | 141.0 | 15.0 | 140 | 8.6 | 0.74 | 2.43 | 19395 | 25.12 | 82.37 | 8.4 | 12.1 |
| 445.0 | 144.0 | 10.0 | 140 | 8.6 | 0.67 | 2.47 | 19687 | 24.60 | 81.18 | 8.4 | 12.1 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 450.0 | 144.0 | 15.0 | 142 | 8.6 | 0.73 | 2.50 | 19983 | 24.60 | 80.03 | 8.4 | 12.1 |
| 455.0 | 128.0 | 16.0 | 140 | 8.6 | 0.77 | 2.54 | 20311 | 27.67 | 78.99 | 8.4 | 12.1 |
| 460.0 | 128.0 | 13.0 | 140 | 8.6 | 0.74 | 2.58 | 20639 | 27.67 | 77.99 | 8.4 | 12.2 |
| 465.0 | 161.0 | 14.0 | 140 | 8.6 | 0.69 | 2.61 | 20900 | 22.00 | 76.93 | 8.4 | 12.2 |
| 470.0 | 161.0 | 13.0 | 140 | 8.6 | 0.68 | 2.64 | 21161 | 22.00 | 75.90 | 8.4 | 12.2 |
| 475.0 | 130.0 | 15.0 | 140 | 8.6 | 0.76 | 2.68 | 21484 | 27.25 | 75.00 | 8.4 | 12.2 |
| 480.0 | 130.0 | 15.0 | 140 | 8.6 | 0.76 | 2.72 | 21807 | 27.25 | 74.14 | 8.4 | 12.2 |
| 485.0 | 114.0 | 18.0 | 142 | 8.6 | 0.83 | 2.76 | 22181 | 31.07 | 73.38 | 8.4 | 12.2 |
| 490.0 | 114.0 | 18.0 | 142 | 8.6 | 0.83 | 2.81 | 22554 | 31.07 | 72.64 | 8.4 | 12.2 |
| 495.0 | 60.0 | 17.0 | 140 | 8.6 | 0.98 | 2.89 | 23254 | 59.03 | 72.41 | 8.4 | 12.3 |
| 500.0 | 60.0 | 19.0 | 140 | 8.6 | 1.01 | 2.97 | 23954 | 59.03 | 72.18 | 8.4 | 12.3 |
| 505.0 | 143.0 | 18.0 | 140 | 8.6 | 0.76 | 3.01 | 24248 | 24.77 | 71.40 | 8.4 | 12.3 |
| 510.0 | 143.0 | 19.0 | 140 | 8.6 | 0.77 | 3.04 | 24542 | 24.77 | 70.64 | 8.4 | 12.3 |
| 515.0 | 120.0 | 16.0 | 140 | 8.6 | 0.79 | 3.09 | 24892 | 29.52 | 69.98 | 8.4 | 12.3 |
| 520.0 | 120.0 | 10.0 | 140 | 8.6 | 0.71 | 3.13 | 25242 | 29.52 | 69.34 | 8.4 | 12.3 |
| 525.0 | 100.0 | 19.0 | 140 | 8.6 | 0.87 | 3.18 | 25662 | 35.42 | 68.81 | 8.4 | 12.4 |
| 530.0 | 152.0 | 17.0 | 140 | 8.6 | 0.74 | 3.21 | 25938 | 23.30 | 68.12 | 8.4 | 12.4 |
| 535.0 | 176.0 | 13.0 | 140 | 8.6 | 0.66 | 3.24 | 26177 | 20.13 | 67.39 | 8.4 | 12.4 |
| 540.0 | 141.0 | 14.0 | 140 | 8.6 | 0.73 | 3.27 | 26475 | 25.12 | 66.77 | 8.4 | 12.4 |
| 545.0 | 133.0 | 13.0 | 145 | 8.6 | 0.74 | 3.31 | 26802 | 26.63 | 66.18 | 8.4 | 12.4 |
| 550.0 | 123.0 | 13.0 | 140 | 8.6 | 0.75 | 3.35 | 27143 | 28.80 | 65.64 | 8.4 | 12.4 |
| 555.0 | 90.0 | 10.0 | 140 | 8.6 | 0.78 | 3.41 | 27610 | 39.36 | 65.27 | 8.4 | 12.4 |
| 560.0 | 190.0 | 10.0 | 140 | 8.6 | 0.61 | 3.44 | 27831 | 18.64 | 64.62 | 8.4 | 12.5 |
| 565.0 | 188.0 | 13.0 | 140 | 8.6 | 0.64 | 3.46 | 28054 | 18.84 | 63.98 | 8.4 | 12.5 |
| 570.0 | 170.0 | 13.0 | 140 | 8.6 | 0.67 | 3.49 | 28301 | 20.84 | 63.40 | 8.4 | 12.5 |
| 575.0 | 174.0 | 8.0 | 140 | 8.6 | 0.60 | 3.52 | 28543 | 20.36 | 62.82 | 8.4 | 12.5 |
| 580.0 | 184.0 | 10.0 | 140 | 8.6 | 0.61 | 3.55 | 28771 | 19.25 | 62.24 | 8.4 | 12.5 |
| 585.0 | 173.0 | 12.0 | 144 | 8.6 | 0.66 | 3.58 | 29021 | 20.47 | 61.69 | 8.4 | 12.5 |
| 590.0 | 163.0 | 12.0 | 144 | 8.6 | 0.67 | 3.61 | 29286 | 21.73 | 61.18 | 8.4 | 12.6 |
| 595.0 | 130.0 | 12.0 | 142 | 8.6 | 0.73 | 3.65 | 29613 | 27.25 | 60.74 | 8.4 | 12.6 |
| 600.0 | 75.0 | 20.0 | 140 | 8.6 | 0.96 | 3.71 | 30173 | 47.23 | 60.57 | 8.4 | 12.6 |
| 605.0 | 98.0 | 21.0 | 140 | 8.6 | 0.89 | 3.76 | 30602 | 36.14 | 60.27 | 8.4 | 12.6 |
| 610.0 | 80.0 | 22.0 | 140 | 8.6 | 0.96 | 3.83 | 31127 | 44.28 | 60.07 | 8.4 | 12.6 |
| 615.0 | 75.0 | 22.0 | 140 | 8.6 | 0.98 | 3.89 | 31687 | 47.23 | 59.92 | 8.4 | 12.6 |
| 620.0 | 36.0 | 16.0 | 140 | 8.6 | 1.10 | 4.03 | 32854 | 98.39 | 60.38 | 8.4 | 12.6 |
| 625.0 | 35.0 | 18.0 | 140 | 8.6 | 1.14 | 4.17 | 34054 | 101.20 | 60.86 | 8.4 | 12.7 |
| 630.0 | 42.0 | 15.0 | 140 | 8.6 | 1.04 | 4.29 | 35054 | 84.33 | 61.14 | 8.4 | 12.7 |
| 635.0 | 60.0 | 20.0 | 140 | 8.6 | 1.02 | 4.38 | 35754 | 59.03 | 61.11 | 8.4 | 12.7 |
| 640.0 | 110.0 | 15.0 | 140 | 8.6 | 0.80 | 4.42 | 36135 | 32.20 | 60.78 | 8.4 | 12.7 |
| 645.0 | 145.0 | 12.0 | 140 | 8.6 | 0.70 | 4.46 | 36425 | 24.43 | 60.37 | 8.4 | 12.7 |
| 650.0 | 200.0 | 15.0 | 140 | 8.6 | 0.65 | 4.48 | 36635 | 17.71 | 59.89 | 8.4 | 12.7 |
| 655.0 | 105.0 | 20.0 | 140 | 8.6 | 0.87 | 4.53 | 37035 | 33.73 | 59.60 | 8.4 | 12.7 |
| 660.0 | 64.0 | 20.0 | 140 | 8.6 | 1.00 | 4.61 | 37691 | 55.34 | 59.56 | 8.4 | 12.8 |
| 665.0 | 48.0 | 17.0 | 140 | 8.6 | 1.04 | 4.71 | 38566 | 73.79 | 59.71 | 8.4 | 12.8 |
| 670.0 | 115.0 | 15.0 | 140 | 8.6 | 0.79 | 4.75 | 38931 | 30.80 | 59.40 | 8.4 | 12.8 |
| 675.0 | 36.0 | 15.0 | 140 | 8.6 | 1.08 | 4.89 | 40098 | 98.39 | 59.81 | 8.4 | 12.8 |
| 680.0 | 74.0 | 15.0 | 140 | 8.6 | 0.90 | 4.96 | 40666 | 47.86 | 59.69 | 8.4 | 12.8 |
| 685.0 | 32.0 | 20.0 | 140 | 8.6 | 1.19 | 5.12 | 41978 | 110.69 | 60.22 | 8.4 | 12.8 |
| 690.0 | 41.0 | 22.0 | 140 | 8.6 | 1.15 | 5.24 | 43003 | 86.39 | 60.49 | 8.4 | 12.8 |
| 695.0 | 96.0 | 15.0 | 140 | 8.6 | 0.83 | 5.29 | 43440 | 36.90 | 60.25 | 8.4 | 12.9 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 700.0 | 84.0 | 15.0 | 140 | 8.6 | 0.87 | 5.35 | 43940 | 42.17 | 60.07 | 8.4 | 12.9 |
| 705.0 | 72.0 | 19.0 | 140 | 8.6 | 0.96 | 5.42 | 44523 | 49.19 | 59.96 | 8.4 | 12.9 |
| 710.0 | 35.0 | 22.0 | 140 | 8.6 | 1.19 | 5.56 | 45723 | 101.20 | 60.36 | 8.4 | 12.9 |
| 715.0 | 32.0 | 22.0 | 140 | 8.6 | 1.21 | 5.72 | 47036 | 110.69 | 60.86 | 8.4 | 12.9 |
| 720.0 | 36.0 | 20.0 | 140 | 8.6 | 1.16 | 5.86 | 48203 | 98.39 | 61.22 | 8.4 | 12.9 |
| 725.0 | 28.0 | 21.0 | 140 | 8.6 | 1.24 | 6.04 | 49703 | 126.50 | 61.84 | 8.4 | 12.9 |
| 730.0 | 25.0 | 22.0 | 137 | 8.6 | 1.28 | 6.24 | 51347 | 141.68 | 62.60 | 8.4 | 12.9 |
| 735.0 | 42.0 | 24.0 | 136 | 8.6 | 1.16 | 6.36 | 52318 | 84.33 | 62.81 | 8.4 | 13.0 |
| 740.0 | 45.0 | 26.0 | 140 | 8.6 | 1.17 | 6.47 | 53251 | 78.71 | 62.95 | 8.4 | 13.0 |
| 745.0 | 38.0 | 25.0 | 140 | 8.6 | 1.20 | 6.60 | 54357 | 93.21 | 63.23 | 8.4 | 13.0 |
| 750.0 | 33.0 | 23.0 | 140 | 8.6 | 1.22 | 6.75 | 55629 | 107.33 | 63.64 | 8.4 | 13.0 |
| 755.0 | 55.0 | 26.0 | 140 | 8.6 | 1.11 | 6.84 | 56393 | 64.40 | 63.64 | 8.4 | 13.0 |
| 760.0 | 62.0 | 26.0 | 138 | 8.6 | 1.07 | 6.92 | 57061 | 57.13 | 63.58 | 8.4 | 13.0 |
| 765.0 | 36.0 | 24.0 | 138 | 8.7 | 1.19 | 7.06 | 58211 | 98.39 | 63.89 | 8.4 | 13.0 |
| 770.0 | 43.0 | 24.0 | 138 | 8.7 | 1.14 | 7.18 | 59174 | 82.37 | 64.06 | 8.4 | 13.1 |
| 775.0 | 43.0 | 24.0 | 139 | 8.7 | 1.14 | 7.29 | 60143 | 82.37 | 64.22 | 8.4 | 13.1 |
| 780.0 | 50.0 | 26.0 | 142 | 8.7 | 1.13 | 7.39 | 60995 | 70.84 | 64.27 | 8.4 | 13.1 |
| 785.0 | 62.0 | 26.0 | 138 | 8.7 | 1.06 | 7.47 | 61663 | 57.13 | 64.21 | 8.4 | 13.1 |
| 786.0 | 55.0 | 26.0 | 138 | 8.7 | 1.09 | 7.49 | 61814 | 64.40 | 64.21 | 8.4 | 13.1 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 3 | IADC CODE | 114 | INTERVAL | 784.0- 1362.0 |
| HTC X3A | | SIZE | 12.250 | NOZZLES | 15 15 15 |
| COST | 1440.00 | TRIP TIME | 3.6 | BIT RUN | 576.0 |
| TOTAL HOURS | 27.35 | TOTAL TURNS | 227640 | CONDITION | T8 BG 60,750 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | TCOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 787.0 | 32.0 | 20.0 | 100 | 8.8 | 1.17 | 0.03 | 188 | 111 | 14175 | 8.4 | 13.1 |
| 788.0 | 38.0 | 20.0 | 105 | 8.8 | 1.13 | 0.06 | 353 | 93 | 7182 | 8.4 | 13.1 |
| 789.0 | 40.0 | 20.0 | 105 | 8.8 | 1.12 | 0.08 | 511 | 89 | 4762 | 8.4 | 13.1 |
| 790.0 | 35.0 | 20.0 | 105 | 8.8 | 1.16 | 0.11 | 691 | 101 | 3602 | 8.4 | 13.1 |
| 791.0 | 36.0 | 20.0 | 105 | 8.8 | 1.15 | 0.14 | 866 | 98 | 2901 | 8.4 | 13.1 |
| 792.0 | 35.0 | 22.0 | 120 | 8.9 | 1.21 | 0.17 | 1072 | 101 | 2435 | 8.4 | 13.1 |
| 793.0 | 27.0 | 22.0 | 120 | 8.9 | 1.29 | 0.20 | 1338 | 131 | 2106 | 8.4 | 13.1 |
| 794.0 | 46.0 | 15.0 | 120 | 8.9 | 1.03 | 0.23 | 1495 | 77 | 1852 | 8.4 | 13.1 |
| 795.0 | 26.0 | 15.0 | 120 | 8.9 | 1.18 | 0.26 | 1772 | 136 | 1661 | 8.4 | 13.1 |
| 796.0 | 24.0 | 18.0 | 120 | 8.9 | 1.26 | 0.31 | 2072 | 148 | 1510 | 8.4 | 13.1 |
| 797.0 | 38.0 | 18.0 | 144 | 8.9 | 1.18 | 0.33 | 2299 | 93 | 1381 | 8.4 | 13.1 |
| 798.0 | 76.0 | 18.0 | 144 | 8.9 | 0.99 | 0.35 | 2413 | 47 | 1270 | 8.4 | 13.1 |
| 799.0 | 31.0 | 18.0 | 144 | 8.9 | 1.24 | 0.38 | 2691 | 114 | 1181 | 8.4 | 13.1 |
| 800.0 | 56.0 | 18.0 | 144 | 8.9 | 1.07 | 0.40 | 2846 | 63 | 1101 | 8.4 | 13.1 |
| 801.0 | 40.0 | 18.0 | 144 | 8.9 | 1.17 | 0.42 | 3062 | 89 | 1034 | 8.4 | 13.1 |
| 802.0 | 45.0 | 17.0 | 145 | 8.9 | 1.12 | 0.44 | 3255 | 78.71 | 974.00 | 8.4 | 13.1 |
| 803.0 | 45.0 | 17.0 | 145 | 8.9 | 1.12 | 0.47 | 3448 | 78.71 | 921.33 | 8.4 | 13.1 |
| 804.0 | 45.0 | 22.0 | 145 | 8.9 | 1.12 | 0.49 | 3642 | 78.71 | 874.52 | 8.4 | 13.1 |
| 805.0 | 22.0 | 22.0 | 145 | 8.9 | 1.40 | 0.53 | 4037 | 161.00 | 836.97 | 8.4 | 13.1 |
| 806.0 | 45.0 | 18.0 | 144 | 8.9 | 1.13 | 0.56 | 4229 | 78.71 | 799.05 | 8.4 | 13.1 |
| 807.0 | 46.0 | 18.0 | 144 | 8.9 | 1.13 | 0.58 | 4417 | 77.00 | 764.67 | 8.4 | 13.1 |
| 808.0 | 63.0 | 18.0 | 144 | 8.9 | 1.04 | 0.59 | 4554 | 56.22 | 732.47 | 8.4 | 13.1 |
| 809.0 | 45.0 | 18.0 | 144 | 8.9 | 1.13 | 0.62 | 4746 | 78.71 | 704.04 | 8.4 | 13.2 |
| 810.0 | 63.0 | 20.0 | 144 | 8.9 | 1.07 | 0.63 | 4883 | 56.22 | 677.05 | 8.4 | 13.2 |
| 811.0 | 52.0 | 20.0 | 144 | 8.9 | 1.12 | 0.65 | 5049 | 68.12 | 652.69 | 8.4 | 13.2 |
| 812.0 | 32.0 | 20.0 | 144 | 8.9 | 1.26 | 0.68 | 5319 | 110.69 | 631.85 | 8.4 | 13.2 |
| 813.0 | 10.0 | 20.0 | 144 | 8.9 | 1.59 | 0.78 | 6183 | 354.20 | 621.56 | 8.4 | 13.2 |
| 814.0 | 56.0 | 18.0 | 144 | 8.9 | 1.07 | 0.80 | 6338 | 63.25 | 601.62 | 8.4 | 13.2 |
| 815.0 | 78.0 | 18.0 | 145 | 8.9 | 0.98 | 0.81 | 6449 | 45.41 | 582.44 | 8.4 | 13.2 |
| 816.0 | 67.0 | 18.0 | 145 | 8.9 | 1.02 | 0.83 | 6579 | 52.87 | 564.77 | 8.4 | 13.2 |
| 817.0 | 54.0 | 18.0 | 145 | 8.9 | 1.08 | 0.85 | 6740 | 65.59 | 548.69 | 8.4 | 13.2 |
| 818.0 | 67.0 | 18.0 | 145 | 8.9 | 1.02 | 0.86 | 6870 | 52.87 | 533.19 | 8.4 | 13.2 |
| 819.0 | 67.0 | 18.0 | 145 | 8.9 | 1.02 | 0.88 | 7000 | 52.87 | 518.64 | 8.4 | 13.2 |
| 820.0 | 64.0 | 18.0 | 145 | 8.9 | 1.04 | 0.89 | 7136 | 55.34 | 505.01 | 8.4 | 13.2 |
| 821.0 | 85.0 | 20.0 | 145 | 8.9 | 0.98 | 0.90 | 7238 | 41.67 | 491.77 | 8.4 | 13.2 |
| 822.0 | 84.0 | 20.0 | 145 | 8.9 | 0.99 | 0.91 | 7342 | 42.17 | 479.28 | 8.4 | 13.2 |
| 823.0 | 78.0 | 20.0 | 145 | 8.9 | 1.01 | 0.93 | 7453 | 45.41 | 467.56 | 8.4 | 13.2 |
| 824.0 | 62.0 | 20.0 | 145 | 8.9 | 1.07 | 0.94 | 7594 | 57.13 | 456.76 | 8.4 | 13.2 |
| 825.0 | 114.0 | 20.0 | 145 | 8.9 | 0.90 | 0.95 | 7670 | 31.07 | 445.84 | 8.4 | 13.2 |
| 826.0 | 78.0 | 20.0 | 145 | 8.9 | 1.01 | 0.97 | 7781 | 45.41 | 435.83 | 8.4 | 13.2 |
| 827.0 | 85.0 | 20.0 | 145 | 8.9 | 0.98 | 0.98 | 7884 | 41.67 | 426.72 | 8.4 | 13.2 |
| 828.0 | 87.0 | 20.0 | 145 | 8.9 | 0.97 | 0.99 | 7982 | 39.80 | 417.02 | 8.4 | 13.2 |
| 829.0 | 85.0 | 20.0 | 145 | 8.9 | 0.98 | 1.00 | 8084 | 41.67 | 408.29 | 8.4 | 13.2 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 830.0 | 78.0 | 22.0 | 145 | 8.9 | 1.03 | 1.01 | 8195 | 45.41 | 406.04 | 8.4 | 13.2 |
| 831.0 | 82.0 | 22.0 | 145 | 8.9 | 1.02 | 1.03 | 8302 | 43.20 | 392.63 | 8.4 | 13.2 |
| 832.0 | 15.0 | 22.0 | 145 | 8.9 | 1.52 | 1.09 | 8882 | 236.13 | 388.72 | 8.4 | 13.2 |
| 833.0 | 85.0 | 22.0 | 142 | 8.9 | 1.00 | 1.10 | 8982 | 41.67 | 381.54 | 8.4 | 13.2 |
| 834.0 | 91.0 | 22.0 | 142 | 8.9 | 0.98 | 1.11 | 9075 | 38.92 | 374.20 | 8.4 | 13.2 |
| 835.0 | 91.0 | 22.0 | 142 | 8.9 | 0.98 | 1.13 | 9169 | 38.92 | 367.36 | 8.4 | 13.2 |
| 836.0 | 101.0 | 22.0 | 142 | 8.9 | 0.95 | 1.14 | 9253 | 35.07 | 360.71 | 8.4 | 13.2 |
| 837.0 | 101.0 | 22.0 | 142 | 8.9 | 0.95 | 1.15 | 9338 | 35.07 | 354.33 | 8.4 | 13.2 |
| 838.0 | 85.0 | 22.0 | 142 | 8.9 | 1.00 | 1.16 | 9438 | 41.67 | 348.32 | 8.4 | 13.2 |
| 839.0 | 67.0 | 22.0 | 142 | 8.9 | 1.07 | 1.17 | 9565 | 52.87 | 342.74 | 8.4 | 13.2 |
| 840.0 | 76.0 | 22.0 | 142 | 8.9 | 1.03 | 1.19 | 9677 | 46.61 | 337.26 | 8.4 | 13.2 |
| 841.0 | 85.0 | 22.0 | 142 | 8.9 | 1.00 | 1.20 | 9777 | 41.67 | 331.80 | 8.4 | 13.2 |
| 842.0 | 42.0 | 24.0 | 142 | 8.9 | 1.24 | 1.22 | 9980 | 84.33 | 327.46 | 8.4 | 13.2 |
| 843.0 | 67.0 | 24.0 | 142 | 8.9 | 1.10 | 1.24 | 10108 | 52.87 | 322.65 | 8.4 | 13.2 |
| 844.0 | 67.0 | 24.0 | 142 | 8.9 | 1.10 | 1.25 | 10235 | 52.87 | 317.99 | 8.4 | 13.2 |
| 845.0 | 101.0 | 25.0 | 142 | 8.9 | 0.98 | 1.26 | 10319 | 35.07 | 313.20 | 8.4 | 13.2 |
| 846.0 | 106.0 | 25.0 | 142 | 8.9 | 0.97 | 1.27 | 10399 | 33.42 | 308.54 | 8.4 | 13.2 |
| 847.0 | 120.0 | 25.0 | 142 | 8.9 | 0.93 | 1.28 | 10470 | 29.52 | 303.96 | 8.4 | 13.2 |
| 848.0 | 91.0 | 25.0 | 142 | 8.9 | 1.02 | 1.29 | 10564 | 38.92 | 299.69 | 8.4 | 13.3 |
| 849.0 | 129.0 | 25.0 | 142 | 8.9 | 0.91 | 1.30 | 10630 | 27.46 | 295.37 | 8.4 | 13.3 |
| 850.0 | 119.0 | 25.0 | 142 | 8.9 | 0.93 | 1.31 | 10702 | 29.76 | 291.22 | 8.4 | 13.3 |
| 851.0 | 76.0 | 25.0 | 142 | 8.9 | 1.07 | 1.32 | 10814 | 46.61 | 287.45 | 8.4 | 13.3 |
| 852.0 | 76.0 | 25.0 | 142 | 8.9 | 1.07 | 1.33 | 10926 | 46.61 | 283.80 | 8.4 | 13.3 |
| 853.0 | 73.0 | 25.0 | 142 | 8.9 | 1.08 | 1.35 | 11043 | 48.52 | 280.29 | 8.4 | 13.3 |
| 854.0 | 139.0 | 25.0 | 142 | 8.9 | 0.89 | 1.35 | 11104 | 25.48 | 276.54 | 8.4 | 13.3 |
| 855.0 | 91.0 | 25.0 | 142 | 8.9 | 1.02 | 1.36 | 11198 | 38.92 | 273.19 | 8.4 | 13.3 |
| 856.0 | 89.0 | 25.0 | 142 | 8.9 | 1.02 | 1.37 | 11293 | 39.80 | 269.97 | 8.4 | 13.3 |
| 857.0 | 96.0 | 25.0 | 142 | 8.9 | 1.00 | 1.39 | 11382 | 36.90 | 266.49 | 8.4 | 13.3 |
| 858.0 | 78.0 | 25.0 | 142 | 8.9 | 1.06 | 1.40 | 11491 | 45.41 | 263.42 | 8.4 | 13.3 |
| 859.0 | 67.0 | 25.0 | 142 | 8.9 | 1.10 | 1.41 | 11615 | 51.33 | 260.51 | 8.4 | 13.3 |
| 860.0 | 72.0 | 25.0 | 142 | 8.9 | 1.09 | 1.43 | 11733 | 49.19 | 257.66 | 8.4 | 13.3 |
| 861.0 | 72.0 | 25.0 | 142 | 8.9 | 1.09 | 1.44 | 11851 | 49.19 | 254.88 | 8.4 | 13.3 |
| 862.0 | 28.0 | 25.0 | 142 | 8.9 | 1.37 | 1.48 | 12156 | 126.50 | 253.19 | 8.4 | 13.3 |
| 863.0 | 56.0 | 23.0 | 140 | 8.9 | 1.13 | 1.49 | 12306 | 63.25 | 250.72 | 8.4 | 13.3 |
| 864.0 | 59.0 | 23.0 | 140 | 8.9 | 1.12 | 1.51 | 12448 | 60.03 | 248.28 | 8.4 | 13.3 |
| 865.0 | 69.0 | 23.0 | 140 | 8.9 | 1.07 | 1.53 | 12570 | 51.33 | 245.78 | 8.4 | 13.3 |
| 866.0 | 52.0 | 23.0 | 140 | 8.9 | 1.15 | 1.54 | 12731 | 68.12 | 243.56 | 8.4 | 13.3 |
| 867.0 | 39.0 | 23.0 | 140 | 8.9 | 1.24 | 1.57 | 12947 | 90.82 | 241.68 | 8.4 | 13.3 |
| 868.0 | 38.5 | 28.0 | 142 | 8.9 | 1.32 | 1.60 | 13168 | 92.00 | 239.85 | 8.4 | 13.3 |
| 869.0 | 38.0 | 28.0 | 142 | 8.9 | 1.32 | 1.62 | 13392 | 93.21 | 238.06 | 8.4 | 13.3 |
| 870.0 | 38.0 | 28.0 | 142 | 8.9 | 1.32 | 1.65 | 13616 | 93.21 | 236.36 | 8.4 | 13.3 |
| 871.0 | 16.0 | 18.0 | 142 | 8.9 | 1.42 | 1.71 | 14149 | 221.38 | 236.18 | 8.4 | 13.3 |
| 872.0 | 20.0 | 18.0 | 142 | 8.9 | 1.35 | 1.76 | 14575 | 177.10 | 235.50 | 8.4 | 13.3 |
| 873.0 | 16.0 | 18.0 | 142 | 8.9 | 1.42 | 1.82 | 15107 | 221.38 | 235.33 | 8.4 | 13.3 |
| 874.0 | 16.0 | 18.0 | 142 | 8.8 | 1.43 | 1.89 | 15640 | 221.38 | 235.18 | 8.4 | 13.3 |
| 875.0 | 15.6 | 19.0 | 142 | 8.8 | 1.46 | 1.95 | 16186 | 227.05 | 235.08 | 8.4 | 13.3 |
| 876.0 | 41.0 | 19.0 | 142 | 8.8 | 1.18 | 1.97 | 16394 | 86.39 | 233.43 | 8.4 | 13.3 |
| 877.0 | 25.0 | 20.0 | 142 | 8.8 | 1.34 | 2.01 | 16735 | 141.68 | 232.42 | 8.4 | 13.3 |
| 878.0 | 26.0 | 20.0 | 142 | 8.8 | 1.33 | 2.05 | 17062 | 136.23 | 231.30 | 8.4 | 13.3 |
| 879.0 | 28.0 | 20.0 | 142 | 8.8 | 1.31 | 2.09 | 17367 | 126.50 | 230.25 | 8.4 | 13.3 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 880.0 | 20.0 | 21.0 | 142 | 8.8 | 1.42 | 2.14 | 17793 | 177.10 | 229.69 | 8.4 | 13.3 |
| 881.0 | 22.0 | 21.0 | 142 | 8.8 | 1.40 | 2.18 | 18180 | 161.00 | 228.96 | 8.4 | 13.3 |
| 882.0 | 20.0 | 26.0 | 142 | 8.8 | 1.51 | 2.23 | 18606 | 177.10 | 228.42 | 8.4 | 13.3 |
| 883.0 | 30.0 | 26.0 | 142 | 8.9 | 1.37 | 2.27 | 18890 | 118.07 | 227.28 | 8.4 | 13.3 |
| 884.0 | 30.0 | 27.0 | 142 | 8.9 | 1.38 | 2.30 | 19174 | 118.07 | 226.17 | 8.4 | 13.3 |
| 885.0 | 21.0 | 27.0 | 142 | 8.9 | 1.49 | 2.35 | 19580 | 168.67 | 225.59 | 8.4 | 13.3 |
| 886.0 | 28.0 | 27.0 | 142 | 8.9 | 1.48 | 2.39 | 19967 | 161.00 | 224.94 | 8.4 | 13.3 |
| 887.0 | 22.0 | 27.0 | 142 | 8.9 | 1.48 | 2.44 | 20354 | 161.00 | 224.31 | 8.4 | 13.3 |
| 888.0 | 7.8 | 24.0 | 150 | 8.9 | 1.76 | 2.57 | 21508 | 454.10 | 226.56 | 8.4 | 13.4 |
| 889.0 | 10.4 | 24.0 | 150 | 8.9 | 1.67 | 2.66 | 22373 | 340.58 | 227.67 | 8.4 | 13.4 |
| 890.0 | 19.4 | 24.0 | 150 | 8.9 | 1.48 | 2.72 | 22837 | 182.58 | 227.24 | 8.4 | 13.4 |
| 891.0 | 18.0 | 24.0 | 150 | 8.9 | 1.51 | 2.77 | 23337 | 196.78 | 226.95 | 8.4 | 13.4 |
| 892.0 | 19.0 | 23.0 | 150 | 8.9 | 1.47 | 2.82 | 23811 | 186.42 | 226.56 | 8.4 | 13.4 |
| 893.0 | 24.0 | 24.0 | 150 | 8.9 | 1.42 | 2.87 | 24186 | 147.58 | 225.83 | 8.4 | 13.4 |
| 894.0 | 23.0 | 24.0 | 150 | 8.9 | 1.43 | 2.91 | 24577 | 154.00 | 225.16 | 8.4 | 13.4 |
| 895.0 | 39.0 | 22.0 | 155 | 8.9 | 1.26 | 2.93 | 24816 | 90.82 | 223.93 | 8.4 | 13.4 |
| 896.0 | 39.0 | 22.0 | 155 | 8.9 | 1.26 | 2.96 | 25054 | 90.82 | 222.72 | 8.4 | 13.4 |
| 897.0 | 34.0 | 22.0 | 155 | 8.9 | 1.30 | 2.99 | 25328 | 104.18 | 221.65 | 8.4 | 13.4 |
| 898.0 | 31.0 | 22.0 | 155 | 8.9 | 1.32 | 3.02 | 25628 | 114.26 | 220.69 | 8.4 | 13.4 |
| 899.0 | 43.0 | 25.0 | 155 | 8.9 | 1.27 | 3.05 | 25844 | 82.37 | 219.47 | 8.4 | 13.4 |
| 900.0 | 48.0 | 23.0 | 155 | 8.9 | 1.21 | 3.07 | 26038 | 73.79 | 218.19 | 8.4 | 13.4 |
| 901.0 | 42.0 | 23.0 | 145 | 8.9 | 1.23 | 3.09 | 26245 | 84.33 | 217.03 | 8.4 | 13.4 |
| 902.0 | 48.0 | 18.0 | 140 | 8.9 | 1.11 | 3.11 | 26420 | 73.79 | 215.79 | 8.4 | 13.4 |
| 903.0 | 27.0 | 18.0 | 140 | 8.9 | 1.27 | 3.15 | 26731 | 131.19 | 215.07 | 8.4 | 13.4 |
| 904.0 | 59.0 | 19.0 | 140 | 8.9 | 1.07 | 3.16 | 26873 | 60.03 | 213.75 | 8.4 | 13.4 |
| 905.0 | 42.0 | 19.0 | 140 | 8.9 | 1.16 | 3.19 | 27073 | 84.33 | 212.67 | 8.4 | 13.4 |
| 906.0 | 43.0 | 19.0 | 140 | 8.9 | 1.16 | 3.21 | 27269 | 82.37 | 211.58 | 8.4 | 13.4 |
| 907.0 | 45.0 | 19.0 | 140 | 8.9 | 1.14 | 3.23 | 27455 | 78.71 | 210.48 | 8.4 | 13.4 |
| 908.0 | 45.0 | 19.0 | 140 | 8.9 | 1.14 | 3.26 | 27642 | 78.71 | 209.40 | 8.4 | 13.4 |
| 909.0 | 35.0 | 24.0 | 140 | 8.9 | 1.29 | 3.28 | 27882 | 101.20 | 208.52 | 8.4 | 13.4 |
| 910.0 | 34.0 | 24.0 | 140 | 8.9 | 1.30 | 3.31 | 28129 | 104.18 | 207.68 | 8.4 | 13.4 |
| 911.0 | 40.0 | 25.0 | 140 | 8.9 | 1.27 | 3.34 | 28339 | 88.55 | 206.73 | 8.4 | 13.4 |
| 912.0 | 48.0 | 26.0 | 140 | 8.9 | 1.22 | 3.36 | 28514 | 73.79 | 205.67 | 8.4 | 13.4 |
| 913.0 | 44.0 | 26.0 | 140 | 8.9 | 1.25 | 3.38 | 28705 | 80.50 | 204.69 | 8.4 | 13.4 |
| 914.0 | 54.0 | 26.0 | 140 | 8.9 | 1.19 | 3.40 | 28861 | 65.59 | 203.60 | 8.4 | 13.4 |
| 915.0 | 48.0 | 26.0 | 140 | 8.9 | 1.22 | 3.42 | 29036 | 73.79 | 202.59 | 8.4 | 13.4 |
| 916.0 | 36.0 | 26.0 | 140 | 8.9 | 1.31 | 3.45 | 29269 | 98.39 | 201.77 | 8.4 | 13.4 |
| 917.0 | 38.0 | 26.0 | 140 | 8.9 | 1.29 | 3.48 | 29490 | 93.21 | 200.96 | 8.4 | 13.4 |
| 918.0 | 38.0 | 25.0 | 125 | 8.9 | 1.25 | 3.50 | 29687 | 93.21 | 200.15 | 8.4 | 13.4 |
| 919.0 | 40.0 | 25.0 | 125 | 8.9 | 1.23 | 3.53 | 29875 | 88.55 | 199.31 | 8.4 | 13.4 |
| 920.0 | 50.0 | 26.0 | 125 | 8.9 | 1.18 | 3.55 | 30025 | 70.84 | 198.35 | 8.4 | 13.4 |
| 921.0 | 61.0 | 26.0 | 125 | 8.9 | 1.11 | 3.56 | 30148 | 58.07 | 197.31 | 8.4 | 13.4 |
| 922.0 | 43.0 | 26.0 | 125 | 8.9 | 1.22 | 3.59 | 30322 | 82.37 | 196.47 | 8.4 | 13.4 |
| 923.0 | 48.0 | 26.0 | 125 | 8.9 | 1.19 | 3.61 | 30479 | 73.79 | 195.57 | 8.4 | 13.4 |
| 924.0 | 21.0 | 20.0 | 126 | 8.9 | 1.35 | 3.66 | 30839 | 168.67 | 195.38 | 8.4 | 13.4 |
| 925.0 | 25.0 | 20.0 | 126 | 8.9 | 1.30 | 3.70 | 31141 | 141.68 | 194.99 | 8.4 | 13.4 |
| 926.0 | 32.0 | 20.0 | 126 | 8.9 | 1.23 | 3.73 | 31377 | 110.69 | 194.39 | 8.4 | 13.4 |
| 927.0 | 32.0 | 20.0 | 126 | 8.9 | 1.23 | 3.76 | 31613 | 110.69 | 193.79 | 8.4 | 13.4 |
| 928.0 | 18.0 | 21.0 | 140 | 8.9 | 1.44 | 3.81 | 32080 | 196.78 | 193.81 | 8.4 | 13.4 |
| 929.0 | 55.0 | 21.0 | 140 | 8.9 | 1.12 | 3.83 | 32233 | 64.40 | 192.91 | 8.4 | 13.4 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 930.0 | 47.0 | 21.0 | 140 | 8.9 | 1.16 | 3.85 | 32412 | 75.36 | 192.09 | 8.4 | 13.4 |
| 931.0 | 30.0 | 21.0 | 140 | 8.9 | 1.29 | 3.89 | 32692 | 118.07 | 191.58 | 8.4 | 13.4 |
| 932.0 | 38.0 | 20.0 | 140 | 8.9 | 1.21 | 3.91 | 32913 | 93.21 | 190.91 | 8.4 | 13.5 |
| 933.0 | 41.0 | 20.0 | 140 | 8.9 | 1.19 | 3.94 | 33117 | 86.39 | 190.20 | 8.4 | 13.5 |
| 934.0 | 35.0 | 20.0 | 141 | 8.9 | 1.23 | 3.97 | 33359 | 101.20 | 189.60 | 8.4 | 13.5 |
| 935.0 | 33.0 | 20.0 | 141 | 8.9 | 1.25 | 4.00 | 33616 | 107.33 | 189.04 | 8.4 | 13.5 |
| 936.0 | 27.0 | 20.0 | 141 | 8.9 | 1.31 | 4.03 | 33929 | 131.19 | 188.66 | 8.4 | 13.5 |
| 937.0 | 18.0 | 22.0 | 141 | 8.9 | 1.46 | 4.09 | 34399 | 196.78 | 188.71 | 8.4 | 13.5 |
| 938.0 | 44.0 | 23.0 | 140 | 8.9 | 1.21 | 4.11 | 34590 | 80.50 | 188.00 | 8.4 | 13.5 |
| 939.0 | 58.0 | 23.0 | 140 | 8.9 | 1.12 | 4.13 | 34735 | 61.07 | 187.17 | 8.4 | 13.5 |
| 940.0 | 16.0 | 23.0 | 140 | 8.9 | 1.51 | 4.19 | 35260 | 221.38 | 187.39 | 8.4 | 13.5 |
| 941.0 | 35.0 | 23.0 | 140 | 8.9 | 1.27 | 4.22 | 35500 | 101.20 | 186.84 | 8.4 | 13.5 |
| 942.0 | 36.0 | 23.0 | 140 | 8.9 | 1.27 | 4.25 | 35733 | 98.39 | 186.27 | 8.4 | 13.5 |
| 943.0 | 46.0 | 23.0 | 140 | 8.9 | 1.19 | 4.27 | 35916 | 77.00 | 185.57 | 8.4 | 13.5 |
| 944.0 | 49.0 | 23.0 | 140 | 8.9 | 1.17 | 4.29 | 36087 | 72.29 | 184.86 | 8.4 | 13.5 |
| 945.0 | 28.0 | 24.0 | 140 | 8.9 | 1.36 | 4.33 | 36387 | 126.50 | 184.49 | 8.4 | 13.5 |
| 946.0 | 38.0 | 24.0 | 140 | 8.9 | 1.26 | 4.35 | 36608 | 93.21 | 183.92 | 8.4 | 13.5 |
| 947.0 | 50.0 | 24.0 | 140 | 8.9 | 1.18 | 4.37 | 36776 | 70.84 | 183.22 | 8.4 | 13.5 |
| 948.0 | 14.7 | 24.0 | 140 | 8.9 | 1.55 | 4.44 | 37347 | 240.95 | 183.57 | 8.4 | 13.5 |
| 949.0 | 28.0 | 24.0 | 140 | 8.9 | 1.36 | 4.48 | 37647 | 126.50 | 183.22 | 8.4 | 13.5 |
| 950.0 | 22.0 | 25.0 | 140 | 8.9 | 1.44 | 4.52 | 38029 | 161.00 | 183.09 | 8.4 | 13.5 |
| 951.0 | 22.0 | 25.0 | 140 | 8.9 | 1.44 | 4.57 | 38411 | 161.00 | 182.95 | 8.4 | 13.5 |
| 952.0 | 24.0 | 25.0 | 140 | 8.9 | 1.42 | 4.61 | 38761 | 147.58 | 182.74 | 8.4 | 13.5 |
| 953.0 | 30.0 | 23.0 | 142 | 8.9 | 1.32 | 4.64 | 39045 | 118.07 | 182.35 | 8.4 | 13.5 |
| 954.0 | 26.0 | 24.0 | 142 | 8.9 | 1.38 | 4.68 | 39373 | 136.23 | 182.08 | 8.4 | 13.5 |
| 955.0 | 31.0 | 24.0 | 142 | 8.9 | 1.33 | 4.71 | 39648 | 114.26 | 181.68 | 8.4 | 13.5 |
| 956.0 | 24.0 | 18.0 | 138 | 8.9 | 1.30 | 4.75 | 39993 | 147.58 | 181.48 | 8.4 | 13.5 |
| 957.0 | 31.0 | 18.0 | 138 | 8.9 | 1.23 | 4.79 | 40260 | 114.26 | 181.08 | 8.4 | 13.5 |
| 958.0 | 28.0 | 22.0 | 138 | 8.9 | 1.32 | 4.82 | 40555 | 126.50 | 180.77 | 8.4 | 13.5 |
| 959.0 | 41.0 | 22.0 | 138 | 8.9 | 1.21 | 4.85 | 40757 | 86.39 | 180.22 | 8.4 | 13.5 |
| 960.0 | 25.0 | 22.0 | 138 | 8.9 | 1.35 | 4.89 | 41089 | 141.68 | 180.00 | 8.4 | 13.5 |
| 961.0 | 31.0 | 22.0 | 138 | 8.9 | 1.27 | 4.92 | 41356 | 114.26 | 179.62 | 8.4 | 13.5 |
| 962.0 | 29.0 | 24.0 | 140 | 8.9 | 1.35 | 4.95 | 41645 | 122.14 | 179.30 | 8.4 | 13.5 |
| 963.0 | 44.0 | 24.0 | 140 | 8.9 | 1.22 | 4.98 | 41836 | 80.50 | 178.74 | 8.4 | 13.5 |
| 964.0 | 23.0 | 23.0 | 142 | 8.9 | 1.40 | 5.02 | 42207 | 154.00 | 178.60 | 8.4 | 13.5 |
| 965.0 | 23.0 | 23.0 | 142 | 8.9 | 1.40 | 5.06 | 42577 | 154.00 | 178.46 | 8.4 | 13.5 |
| 966.0 | 19.0 | 23.0 | 142 | 8.9 | 1.46 | 5.11 | 43026 | 186.42 | 178.51 | 8.4 | 13.5 |
| 967.0 | 43.0 | 25.0 | 142 | 8.9 | 1.24 | 5.14 | 43224 | 82.37 | 177.98 | 8.4 | 13.5 |
| 968.0 | 54.0 | 21.0 | 132 | 8.9 | 1.10 | 5.16 | 43370 | 65.59 | 177.36 | 8.4 | 13.5 |
| 969.0 | 62.0 | 21.0 | 132 | 8.9 | 1.06 | 5.17 | 43498 | 57.13 | 176.70 | 8.4 | 13.5 |
| 970.0 | 31.0 | 22.0 | 132 | 8.9 | 1.28 | 5.21 | 43754 | 114.26 | 176.36 | 8.4 | 13.5 |
| 971.0 | 36.0 | 22.0 | 132 | 8.9 | 1.23 | 5.23 | 43974 | 98.39 | 175.94 | 8.4 | 13.5 |
| 972.0 | 33.0 | 22.0 | 132 | 8.9 | 1.26 | 5.26 | 44214 | 107.33 | 175.57 | 8.4 | 13.5 |
| 973.0 | 36.0 | 22.0 | 132 | 8.9 | 1.23 | 5.29 | 44434 | 98.39 | 175.16 | 8.4 | 13.5 |
| 974.0 | 36.0 | 22.0 | 132 | 8.9 | 1.23 | 5.32 | 44654 | 98.39 | 174.75 | 8.4 | 13.5 |
| 975.0 | 17.0 | 22.0 | 132 | 8.9 | 1.45 | 5.38 | 45119 | 208.35 | 174.93 | 8.4 | 13.6 |
| 976.0 | 59.0 | 21.0 | 138 | 9.0 | 1.07 | 5.39 | 45260 | 60.03 | 174.32 | 8.4 | 13.6 |
| 977.0 | 34.0 | 21.0 | 138 | 9.0 | 1.23 | 5.42 | 45503 | 104.18 | 173.96 | 8.4 | 13.6 |
| 978.0 | 26.0 | 20.0 | 138 | 9.0 | 1.29 | 5.46 | 45822 | 136.23 | 173.76 | 8.4 | 13.6 |
| 979.0 | 23.0 | 20.0 | 138 | 9.0 | 1.33 | 5.51 | 46182 | 154.00 | 173.66 | 8.4 | 13.6 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 980.0 | 31.0 | 20.0 | 138 | 9.0 | 1.24 | 5.54 | 46449 | 114.26 | 173.35 | 8.4 | 13.6 |
| 981.0 | 31.0 | 20.0 | 140 | 9.1 | 1.23 | 5.57 | 46720 | 114.26 | 173.05 | 8.4 | 13.6 |
| 982.0 | 33.0 | 20.0 | 139 | 9.1 | 1.21 | 5.60 | 46973 | 107.33 | 172.71 | 8.4 | 13.6 |
| 983.0 | 32.0 | 20.0 | 139 | 9.1 | 1.22 | 5.63 | 47233 | 110.69 | 172.40 | 8.4 | 13.6 |
| 984.0 | 19.0 | 20.0 | 139 | 9.1 | 1.37 | 5.68 | 47672 | 186.42 | 172.47 | 8.4 | 13.6 |
| 985.0 | 22.0 | 20.0 | 139 | 9.2 | 1.31 | 5.73 | 48051 | 161.00 | 172.41 | 8.4 | 13.6 |
| 986.0 | 23.0 | 20.0 | 137 | 9.2 | 1.30 | 5.77 | 48409 | 154.00 | 172.32 | 8.4 | 13.6 |
| 987.0 | 16.0 | 20.0 | 138 | 9.2 | 1.40 | 5.84 | 48926 | 221.38 | 172.56 | 8.4 | 13.6 |
| 988.0 | 28.0 | 20.0 | 138 | 9.2 | 1.24 | 5.87 | 49222 | 126.50 | 172.34 | 8.4 | 13.6 |
| 989.0 | 31.0 | 20.0 | 138 | 9.2 | 1.22 | 5.90 | 49489 | 114.26 | 172.05 | 8.4 | 13.6 |
| 990.0 | 28.0 | 20.0 | 136 | 9.3 | 1.23 | 5.94 | 49780 | 126.50 | 171.83 | 8.4 | 13.6 |
| 991.0 | 22.0 | 20.0 | 136 | 9.3 | 1.29 | 5.99 | 50151 | 161.00 | 171.77 | 8.4 | 13.6 |
| 992.0 | 14.0 | 20.0 | 136 | 9.3 | 1.42 | 6.06 | 50734 | 253.00 | 172.17 | 8.4 | 13.6 |
| 993.0 | 19.0 | 20.0 | 136 | 9.4 | 1.32 | 6.11 | 51164 | 186.42 | 172.24 | 8.4 | 13.6 |
| 994.0 | 18.9 | 20.0 | 136 | 9.4 | 1.32 | 6.16 | 51595 | 187.41 | 172.31 | 8.4 | 13.6 |
| 995.0 | 8.2 | 20.0 | 136 | 9.4 | 1.55 | 6.28 | 52590 | 431.95 | 173.55 | 8.4 | 13.6 |
| 996.0 | 21.0 | 20.0 | 136 | 9.5 | 1.28 | 6.33 | 52979 | 168.67 | 173.53 | 8.4 | 13.6 |
| 997.0 | 11.0 | 20.0 | 128 | 9.5 | 1.43 | 6.42 | 53677 | 322.00 | 174.23 | 8.4 | 13.6 |
| 998.0 | 16.0 | 22.0 | 128 | 9.6 | 1.35 | 6.49 | 54157 | 221.38 | 174.45 | 8.4 | 13.6 |
| 999.0 | 18.0 | 22.0 | 128 | 9.6 | 1.32 | 6.54 | 54584 | 196.78 | 174.56 | 8.4 | 13.6 |
| 1000.0 | 8.2 | 22.0 | 128 | 9.6 | 1.53 | 6.66 | 55520 | 431.95 | 175.76 | 8.4 | 13.6 |
| 1001.0 | 8.0 | 22.0 | 128 | 9.7 | 1.53 | 6.79 | 56480 | 442.75 | 177.00 | 8.4 | 13.6 |
| 1002.0 | 11.0 | 22.0 | 128 | 9.7 | 1.44 | 6.88 | 57179 | 322.00 | 177.67 | 8.4 | 13.6 |
| 1003.0 | 8.9 | 22.0 | 128 | 9.7 | 1.50 | 6.99 | 58042 | 397.98 | 178.69 | 8.4 | 13.6 |
| 1004.0 | 16.0 | 26.0 | 139 | 9.8 | 1.41 | 7.05 | 58563 | 221.38 | 178.89 | 8.4 | 13.6 |
| 1005.0 | 30.0 | 27.0 | 139 | 9.8 | 1.25 | 7.09 | 58841 | 118.07 | 178.61 | 8.4 | 13.6 |
| 1006.0 | 47.0 | 27.0 | 139 | 9.8 | 1.12 | 7.11 | 59018 | 75.36 | 178.14 | 8.4 | 13.6 |
| 1007.0 | 31.0 | 27.0 | 139 | 9.8 | 1.24 | 7.14 | 59287 | 114.26 | 177.85 | 8.4 | 13.6 |
| 1008.0 | 26.0 | 32.0 | 139 | 9.8 | 1.35 | 7.18 | 59608 | 136.23 | 177.66 | 8.4 | 13.6 |
| 1009.0 | 33.0 | 33.0 | 139 | 9.8 | 1.29 | 7.21 | 59861 | 107.33 | 177.35 | 8.4 | 13.6 |
| 1010.0 | 33.0 | 31.0 | 139 | 9.8 | 1.27 | 7.24 | 60114 | 107.33 | 177.03 | 8.4 | 13.6 |
| 1011.0 | 24.0 | 31.0 | 145 | 9.8 | 1.37 | 7.28 | 60476 | 147.58 | 176.90 | 8.4 | 13.6 |
| 1012.0 | 22.0 | 31.0 | 147 | 9.8 | 1.40 | 7.33 | 60877 | 161.00 | 176.83 | 8.4 | 13.6 |
| 1013.0 | 22.0 | 31.0 | 147 | 9.8 | 1.40 | 7.37 | 61278 | 161.00 | 176.76 | 8.4 | 13.6 |
| 1014.0 | 12.0 | 31.0 | 147 | 9.8 | 1.58 | 7.46 | 62013 | 295.17 | 177.28 | 8.4 | 13.6 |
| 1015.0 | 20.0 | 31.0 | 147 | 9.8 | 1.43 | 7.51 | 62454 | 177.10 | 177.28 | 8.4 | 13.6 |
| 1016.0 | 18.0 | 26.0 | 147 | 9.8 | 1.39 | 7.56 | 62944 | 196.78 | 177.37 | 8.4 | 13.6 |
| 1017.0 | 16.5 | 26.0 | 147 | 9.8 | 1.42 | 7.62 | 63478 | 214.67 | 177.53 | 8.4 | 13.6 |
| 1018.0 | 29.0 | 25.0 | 140 | 9.9 | 1.22 | 7.66 | 63768 | 122.14 | 177.29 | 8.4 | 13.6 |
| 1019.0 | 25.0 | 25.0 | 140 | 9.9 | 1.26 | 7.70 | 64104 | 141.68 | 177.14 | 8.4 | 13.7 |
| 1020.0 | 16.0 | 25.0 | 137 | 9.9 | 1.38 | 7.76 | 64618 | 221.38 | 177.33 | 8.4 | 13.7 |
| 1021.0 | 18.0 | 25.0 | 137 | 9.9 | 1.34 | 7.81 | 65074 | 196.78 | 177.41 | 8.4 | 13.7 |
| 1022.0 | 16.0 | 25.0 | 138 | 9.9 | 1.38 | 7.88 | 65592 | 221.38 | 177.59 | 8.4 | 13.7 |
| 1023.0 | 17.0 | 25.0 | 135 | 10.0 | 1.34 | 7.94 | 66068 | 208.35 | 177.72 | 8.4 | 13.7 |
| 1024.0 | 20.0 | 28.0 | 135 | 10.0 | 1.34 | 7.99 | 66473 | 177.10 | 177.72 | 8.4 | 13.7 |
| 1025.0 | 22.0 | 28.0 | 135 | 10.0 | 1.31 | 8.03 | 66842 | 161.00 | 177.65 | 8.4 | 13.7 |
| 1026.0 | 23.0 | 32.0 | 135 | 10.0 | 1.35 | 8.07 | 67194 | 154.00 | 177.55 | 8.4 | 13.7 |
| 1027.0 | 18.0 | 32.0 | 135 | 10.0 | 1.42 | 8.13 | 67644 | 196.78 | 177.63 | 8.4 | 13.7 |
| 1028.0 | 17.0 | 28.0 | 135 | 10.0 | 1.38 | 8.19 | 68120 | 208.35 | 177.76 | 8.4 | 13.7 |
| 1029.0 | 14.0 | 28.0 | 135 | 10.1 | 1.42 | 8.26 | 68699 | 253.00 | 178.07 | 8.4 | 13.7 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | TCOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1030.0 | 19.0 | 25.0 | 136 | 10.1 | 1.30 | 8.31 | 69128 | 186.42 | 178.10 | 8.4 | 13.7 |
| 1031.0 | 18.0 | 25.0 | 136 | 10.1 | 1.32 | 8.37 | 69582 | 196.78 | 178.13 | 8.4 | 13.7 |
| 1032.0 | 29.0 | 34.0 | 136 | 10.1 | 1.30 | 8.40 | 69863 | 122.14 | 177.95 | 8.4 | 13.7 |
| 1033.0 | 32.0 | 34.0 | 136 | 10.1 | 1.27 | 8.43 | 70118 | 110.67 | 177.68 | 8.4 | 13.7 |
| 1034.0 | 34.0 | 28.0 | 133 | 10.1 | 1.18 | 8.46 | 70353 | 104.18 | 177.38 | 8.4 | 13.7 |
| 1035.0 | 24.0 | 28.0 | 133 | 10.1 | 1.27 | 8.50 | 70685 | 147.53 | 177.25 | 8.4 | 13.7 |
| 1036.0 | 27.0 | 28.0 | 133 | 10.1 | 1.24 | 8.54 | 70981 | 131.19 | 177.08 | 8.4 | 13.7 |
| 1037.0 | 28.0 | 23.0 | 133 | 10.1 | 1.25 | 8.58 | 71266 | 126.50 | 176.88 | 8.4 | 13.7 |
| 1038.0 | 22.0 | 28.0 | 133 | 10.1 | 1.30 | 8.62 | 71629 | 161.00 | 176.82 | 8.4 | 13.7 |
| 1039.0 | 15.0 | 28.0 | 133 | 10.2 | 1.37 | 8.69 | 72161 | 236.13 | 177.05 | 8.4 | 13.7 |
| 1040.0 | 25.0 | 28.0 | 133 | 10.2 | 1.25 | 8.73 | 72480 | 141.68 | 176.91 | 8.4 | 13.7 |
| 1041.0 | 10.0 | 28.0 | 133 | 10.2 | 1.50 | 8.83 | 73278 | 354.20 | 177.61 | 8.4 | 13.7 |
| 1042.0 | 36.0 | 26.0 | 135 | 10.2 | 1.13 | 8.86 | 73503 | 98.39 | 177.30 | 8.4 | 13.7 |
| 1043.0 | 33.0 | 26.0 | 135 | 10.2 | 1.15 | 8.89 | 73748 | 107.33 | 177.07 | 8.4 | 13.7 |
| 1044.0 | 34.0 | 26.0 | 136 | 10.2 | 1.15 | 8.92 | 73988 | 104.18 | 176.74 | 8.4 | 13.7 |
| 1045.0 | 33.0 | 26.0 | 136 | 10.2 | 1.15 | 8.95 | 74235 | 107.33 | 176.47 | 8.4 | 13.7 |
| 1046.0 | 30.0 | 28.0 | 136 | 10.2 | 1.20 | 8.98 | 74507 | 118.07 | 176.25 | 8.4 | 13.7 |
| 1047.0 | 28.0 | 28.0 | 136 | 10.2 | 1.22 | 9.02 | 74799 | 126.50 | 176.06 | 8.4 | 13.7 |
| 1048.0 | 23.0 | 28.0 | 136 | 10.2 | 1.28 | 9.06 | 75154 | 154.00 | 175.97 | 8.4 | 13.7 |
| 1049.0 | 21.0 | 28.0 | 136 | 10.2 | 1.30 | 9.11 | 75542 | 168.67 | 175.95 | 8.4 | 13.7 |
| 1050.0 | 21.0 | 28.0 | 136 | 10.2 | 1.30 | 9.16 | 75931 | 168.67 | 175.92 | 8.4 | 13.7 |
| 1051.0 | 22.0 | 28.0 | 136 | 10.2 | 1.29 | 9.20 | 76302 | 161.00 | 175.86 | 8.4 | 13.7 |
| 1052.0 | 33.0 | 28.0 | 136 | 10.2 | 1.18 | 9.23 | 76549 | 107.33 | 175.60 | 8.4 | 13.7 |
| 1053.0 | 26.0 | 28.0 | 136 | 10.2 | 1.24 | 9.27 | 76863 | 136.23 | 175.46 | 8.4 | 13.7 |
| 1054.0 | 28.0 | 30.0 | 136 | 10.2 | 1.25 | 9.31 | 77154 | 126.50 | 175.27 | 8.4 | 13.7 |
| 1055.0 | 28.0 | 30.0 | 136 | 10.2 | 1.25 | 9.34 | 77446 | 126.50 | 175.09 | 8.4 | 13.7 |
| 1056.0 | 27.0 | 28.0 | 137 | 10.2 | 1.24 | 9.38 | 77750 | 131.19 | 174.93 | 8.4 | 13.7 |
| 1057.0 | 22.0 | 28.0 | 137 | 10.2 | 1.29 | 9.42 | 78124 | 161.00 | 174.88 | 8.4 | 13.7 |
| 1058.0 | 19.0 | 28.0 | 137 | 10.2 | 1.33 | 9.48 | 78556 | 186.42 | 174.99 | 8.4 | 13.7 |
| 1059.0 | 17.0 | 28.0 | 137 | 10.2 | 1.34 | 9.53 | 78989 | 186.42 | 174.96 | 8.4 | 13.7 |
| 1060.0 | 56.0 | 30.0 | 131 | 10.2 | 1.04 | 9.55 | 79129 | 63.25 | 174.56 | 8.4 | 13.7 |
| 1061.0 | 37.0 | 30.0 | 131 | 10.2 | 1.16 | 9.57 | 79342 | 95.73 | 174.37 | 8.4 | 13.7 |
| 1062.0 | 35.0 | 30.0 | 131 | 10.2 | 1.17 | 9.60 | 79566 | 101.20 | 174.00 | 8.4 | 13.7 |
| 1063.0 | 31.0 | 30.0 | 131 | 10.2 | 1.21 | 9.63 | 79820 | 114.26 | 173.79 | 8.4 | 13.7 |
| 1064.0 | 38.0 | 31.0 | 136 | 10.2 | 1.17 | 9.66 | 80035 | 93.21 | 173.50 | 8.4 | 13.7 |
| 1065.0 | 34.0 | 31.0 | 136 | 10.2 | 1.20 | 9.69 | 80275 | 104.18 | 173.25 | 8.4 | 13.8 |
| 1066.0 | 37.0 | 33.0 | 135 | 10.2 | 1.20 | 9.72 | 80494 | 95.73 | 172.97 | 8.4 | 13.8 |
| 1067.0 | 44.0 | 33.0 | 135 | 10.2 | 1.15 | 9.74 | 80678 | 80.50 | 172.64 | 8.4 | 13.8 |
| 1068.0 | 46.0 | 32.0 | 138 | 10.2 | 1.13 | 9.76 | 80858 | 77.00 | 172.31 | 8.4 | 13.8 |
| 1069.0 | 27.0 | 32.0 | 138 | 10.2 | 1.28 | 9.80 | 81164 | 131.19 | 172.16 | 8.4 | 13.8 |
| 1070.0 | 38.0 | 32.0 | 138 | 10.2 | 1.19 | 9.83 | 81382 | 93.21 | 171.88 | 8.4 | 13.8 |
| 1071.0 | 38.0 | 32.0 | 138 | 10.2 | 1.19 | 9.85 | 81600 | 93.21 | 171.61 | 8.4 | 13.8 |
| 1072.0 | 40.0 | 35.0 | 142 | 10.2 | 1.21 | 9.88 | 81813 | 88.55 | 171.32 | 8.4 | 13.8 |
| 1073.0 | 38.0 | 35.0 | 142 | 10.2 | 1.23 | 9.90 | 82037 | 93.21 | 171.04 | 8.4 | 13.8 |
| 1074.0 | 32.0 | 33.0 | 142 | 10.2 | 1.26 | 9.93 | 82304 | 110.69 | 170.83 | 8.4 | 13.8 |
| 1075.0 | 37.0 | 32.0 | 142 | 10.2 | 1.20 | 9.96 | 82534 | 95.73 | 170.57 | 8.4 | 13.8 |
| 1076.0 | 22.0 | 32.0 | 139 | 10.2 | 1.34 | 10.01 | 82913 | 161.00 | 170.54 | 8.4 | 13.8 |
| 1077.0 | 23.0 | 32.0 | 139 | 10.2 | 1.33 | 10.05 | 83276 | 154.00 | 170.48 | 8.4 | 13.8 |
| 1078.0 | 28.0 | 33.0 | 136 | 10.2 | 1.28 | 10.09 | 83567 | 126.50 | 170.33 | 8.4 | 13.8 |
| 1079.0 | 31.0 | 33.0 | 136 | 10.2 | 1.25 | 10.12 | 83830 | 114.26 | 170.14 | 8.4 | 13.8 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1080.0 | 38.0 | 31.0 | 150 | 10.2 | 1.20 | 10.14 | 84067 | 93.21 | 169.88 | 8.4 | 13.8 |
| 1081.0 | 39.0 | 31.0 | 150 | 10.2 | 1.19 | 10.17 | 84298 | 90.82 | 169.61 | 8.4 | 13.8 |
| 1082.0 | 36.0 | 31.0 | 150 | 10.2 | 1.22 | 10.20 | 84548 | 98.39 | 169.37 | 8.4 | 13.8 |
| 1083.0 | 30.0 | 31.0 | 150 | 10.2 | 1.27 | 10.23 | 84848 | 118.07 | 169.20 | 8.4 | 13.8 |
| 1084.0 | 41.0 | 30.0 | 148 | 10.2 | 1.16 | 10.26 | 85064 | 86.39 | 168.92 | 8.4 | 13.8 |
| 1085.0 | 41.0 | 30.0 | 148 | 10.2 | 1.16 | 10.28 | 85281 | 86.39 | 168.65 | 8.4 | 13.8 |
| 1086.0 | 33.0 | 30.0 | 148 | 10.2 | 1.22 | 10.31 | 85550 | 107.33 | 168.44 | 8.4 | 13.8 |
| 1087.0 | 40.0 | 30.0 | 148 | 10.2 | 1.17 | 10.34 | 85772 | 88.55 | 168.18 | 8.4 | 13.8 |
| 1088.0 | 43.0 | 31.0 | 148 | 10.2 | 1.16 | 10.36 | 85979 | 82.37 | 167.89 | 8.4 | 13.8 |
| 1089.0 | 44.0 | 31.0 | 148 | 10.2 | 1.16 | 10.38 | 86180 | 80.50 | 167.60 | 8.4 | 13.8 |
| 1090.0 | 26.0 | 29.0 | 142 | 10.2 | 1.27 | 10.42 | 86508 | 136.23 | 167.50 | 8.4 | 13.8 |
| 1091.0 | 38.0 | 29.0 | 142 | 10.2 | 1.16 | 10.45 | 86732 | 93.21 | 167.26 | 8.4 | 13.8 |
| 1092.0 | 36.0 | 31.0 | 142 | 10.2 | 1.20 | 10.47 | 86969 | 98.39 | 167.03 | 8.4 | 13.8 |
| 1093.0 | 45.0 | 31.0 | 142 | 10.2 | 1.14 | 10.50 | 87158 | 78.71 | 166.74 | 8.4 | 13.8 |
| 1094.0 | 35.0 | 30.0 | 140 | 10.2 | 1.19 | 10.52 | 87398 | 101.20 | 166.53 | 8.4 | 13.8 |
| 1095.0 | 36.0 | 30.0 | 140 | 10.2 | 1.19 | 10.55 | 87632 | 98.39 | 166.31 | 8.4 | 13.8 |
| 1096.0 | 32.0 | 32.0 | 142 | 10.2 | 1.24 | 10.58 | 87898 | 110.69 | 166.13 | 8.4 | 13.8 |
| 1097.0 | 35.0 | 32.0 | 142 | 10.2 | 1.22 | 10.61 | 88141 | 101.20 | 165.92 | 8.4 | 13.8 |
| 1098.0 | 32.0 | 34.0 | 142 | 10.2 | 1.27 | 10.64 | 88408 | 110.69 | 165.75 | 8.4 | 13.8 |
| 1099.0 | 30.0 | 30.0 | 142 | 10.2 | 1.24 | 10.68 | 88692 | 118.07 | 165.59 | 8.4 | 13.8 |
| 1100.0 | 28.0 | 29.0 | 142 | 10.2 | 1.25 | 10.71 | 88996 | 126.50 | 165.47 | 8.4 | 13.8 |
| 1101.0 | 36.0 | 29.0 | 142 | 10.2 | 1.18 | 10.74 | 89233 | 98.39 | 165.26 | 8.4 | 13.8 |
| 1102.0 | 45.0 | 33.0 | 140 | 10.2 | 1.15 | 10.76 | 89419 | 78.71 | 164.98 | 8.4 | 13.8 |
| 1103.0 | 45.0 | 33.0 | 140 | 10.2 | 1.15 | 10.78 | 89606 | 78.71 | 164.71 | 8.4 | 13.8 |
| 1104.0 | 43.0 | 30.0 | 140 | 10.2 | 1.14 | 10.81 | 89801 | 82.37 | 164.45 | 8.4 | 13.8 |
| 1105.0 | 40.0 | 30.0 | 140 | 10.2 | 1.16 | 10.83 | 90011 | 88.55 | 164.21 | 8.4 | 13.8 |
| 1106.0 | 40.0 | 30.0 | 142 | 10.2 | 1.16 | 10.86 | 90224 | 88.55 | 163.98 | 8.4 | 13.8 |
| 1107.0 | 37.0 | 30.0 | 142 | 10.2 | 1.18 | 10.88 | 90454 | 95.73 | 163.76 | 8.4 | 13.8 |
| 1108.0 | 38.0 | 31.0 | 142 | 10.2 | 1.19 | 10.91 | 90679 | 93.21 | 163.54 | 8.4 | 13.8 |
| 1109.0 | 52.0 | 31.0 | 142 | 10.2 | 1.10 | 10.93 | 90843 | 68.12 | 163.25 | 8.4 | 13.8 |
| 1110.0 | 40.0 | 25.0 | 145 | 10.2 | 1.11 | 10.96 | 91060 | 88.55 | 163.02 | 8.4 | 13.8 |
| 1111.0 | 41.0 | 25.0 | 145 | 10.2 | 1.10 | 10.98 | 91272 | 86.39 | 162.78 | 8.4 | 13.8 |
| 1112.0 | 40.0 | 25.0 | 145 | 10.2 | 1.11 | 11.00 | 91490 | 88.55 | 162.55 | 8.4 | 13.8 |
| 1113.0 | 38.0 | 25.0 | 145 | 10.2 | 1.12 | 11.03 | 91719 | 93.21 | 162.34 | 8.4 | 13.9 |
| 1114.0 | 44.0 | 28.0 | 145 | 10.2 | 1.12 | 11.05 | 91916 | 80.50 | 162.09 | 8.4 | 13.9 |
| 1115.0 | 34.0 | 28.0 | 145 | 10.2 | 1.19 | 11.08 | 92172 | 104.18 | 161.92 | 8.4 | 13.9 |
| 1116.0 | 34.0 | 30.0 | 145 | 10.2 | 1.21 | 11.11 | 92428 | 104.18 | 161.74 | 8.4 | 13.9 |
| 1117.0 | 44.0 | 30.0 | 145 | 10.2 | 1.14 | 11.14 | 92626 | 80.50 | 161.50 | 8.4 | 13.9 |
| 1118.0 | 36.0 | 29.0 | 145 | 10.2 | 1.18 | 11.16 | 92868 | 98.39 | 161.31 | 8.4 | 13.9 |
| 1119.0 | 39.0 | 29.0 | 145 | 10.3 | 1.15 | 11.19 | 93091 | 90.82 | 161.09 | 8.4 | 13.9 |
| 1120.0 | 36.0 | 30.0 | 145 | 10.3 | 1.18 | 11.22 | 93332 | 98.39 | 160.91 | 8.4 | 13.9 |
| 1121.0 | 44.0 | 30.0 | 145 | 10.3 | 1.13 | 11.24 | 93530 | 80.50 | 160.67 | 8.4 | 13.9 |
| 1122.0 | 29.0 | 31.0 | 145 | 10.3 | 1.25 | 11.27 | 93830 | 122.14 | 160.55 | 8.4 | 13.9 |
| 1123.0 | 18.0 | 31.0 | 145 | 10.3 | 1.39 | 11.33 | 94313 | 196.78 | 160.66 | 8.4 | 13.9 |
| 1124.0 | 21.5 | 31.0 | 145 | 10.3 | 1.34 | 11.38 | 94718 | 164.74 | 160.67 | 8.4 | 13.9 |
| 1125.0 | 28.0 | 31.0 | 145 | 10.3 | 1.26 | 11.41 | 95029 | 126.50 | 160.57 | 8.4 | 13.9 |
| 1126.0 | 25.0 | 31.0 | 145 | 10.3 | 1.30 | 11.45 | 95377 | 141.68 | 160.52 | 8.4 | 13.9 |
| 1127.0 | 18.3 | 31.0 | 145 | 10.3 | 1.38 | 11.51 | 95852 | 193.55 | 160.61 | 8.4 | 13.9 |
| 1128.0 | 22.0 | 30.0 | 142 | 10.3 | 1.31 | 11.55 | 96239 | 161.00 | 160.61 | 8.4 | 13.9 |
| 1129.0 | 35.0 | 30.0 | 142 | 10.3 | 1.19 | 11.58 | 96483 | 101.20 | 160.44 | 8.4 | 13.9 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1130.0 | 30.0 | 32.0 | 145 | 10.3 | 1.26 | 11.61 | 96773 | 118.07 | 160.32 | 8.4 | 13.9 |
| 1131.0 | 25.0 | 32.0 | 145 | 10.3 | 1.31 | 11.65 | 97121 | 141.68 | 160.26 | 8.4 | 13.9 |
| 1132.0 | 32.0 | 32.0 | 145 | 10.3 | 1.24 | 11.68 | 97393 | 110.69 | 160.12 | 8.4 | 13.9 |
| 1133.0 | 33.0 | 32.0 | 145 | 10.3 | 1.23 | 11.72 | 97656 | 107.33 | 159.97 | 8.4 | 13.9 |
| 1134.0 | 24.0 | 32.0 | 145 | 10.3 | 1.32 | 11.76 | 98019 | 147.58 | 159.93 | 8.4 | 13.9 |
| 1135.0 | 24.6 | 32.0 | 145 | 10.3 | 1.31 | 11.80 | 98373 | 143.98 | 159.89 | 8.4 | 13.9 |
| 1136.0 | 25.0 | 32.0 | 145 | 10.3 | 1.31 | 11.84 | 98721 | 141.68 | 159.83 | 8.4 | 13.9 |
| 1137.0 | 17.6 | 25.0 | 145 | 10.3 | 1.31 | 11.89 | 99215 | 201.25 | 159.95 | 8.4 | 13.9 |
| 1138.0 | 17.7 | 20.0 | 145 | 10.3 | 1.24 | 11.95 | 99706 | 200.11 | 160.07 | 8.4 | 13.9 |
| 1139.0 | 13.0 | 21.0 | 145 | 10.3 | 1.33 | 12.03 | 100376 | 272.46 | 160.39 | 8.4 | 13.9 |
| 1140.0 | 13.8 | 22.0 | 145 | 10.3 | 1.33 | 12.10 | 101006 | 256.67 | 160.66 | 8.4 | 13.9 |
| 1141.0 | 22.0 | 21.0 | 145 | 10.3 | 1.20 | 12.15 | 101401 | 161.00 | 160.66 | 8.4 | 13.9 |
| 1142.0 | 15.0 | 21.0 | 145 | 10.3 | 1.29 | 12.21 | 101981 | 236.13 | 160.87 | 8.4 | 13.9 |
| 1143.0 | 17.0 | 21.0 | 145 | 10.3 | 1.26 | 12.27 | 102493 | 208.35 | 161.00 | 8.4 | 13.9 |
| 1144.0 | 19.0 | 21.0 | 145 | 10.3 | 1.23 | 12.32 | 102951 | 186.42 | 161.07 | 8.4 | 13.9 |
| 1145.0 | 12.0 | 12.0 | 145 | 10.3 | 1.18 | 12.41 | 103676 | 295.17 | 161.45 | 8.4 | 13.9 |
| 1146.0 | 12.0 | 11.0 | 150 | 10.3 | 1.16 | 12.49 | 104426 | 295.17 | 161.82 | 8.4 | 13.9 |
| 1147.0 | 10.6 | 8.0 | 150 | 10.3 | 1.11 | 12.58 | 105275 | 334.15 | 162.30 | 8.4 | 13.9 |
| 1148.0 | 7.1 | 8.0 | 150 | 10.3 | 1.19 | 12.73 | 106543 | 498.87 | 163.23 | 8.4 | 13.9 |
| 1149.0 | 5.6 | 11.0 | 148 | 10.3 | 1.32 | 12.90 | 108129 | 632.50 | 164.52 | 8.4 | 13.9 |
| 1150.0 | 8.9 | 10.0 | 152 | 10.3 | 1.21 | 13.02 | 109153 | 397.98 | 165.16 | 8.4 | 13.9 |
| 1151.0 | 12.0 | 10.0 | 152 | 10.3 | 1.14 | 13.10 | 109913 | 295.17 | 165.52 | 8.4 | 13.9 |
| 1152.0 | 11.8 | 9.0 | 152 | 10.3 | 1.12 | 13.18 | 110686 | 300.17 | 165.88 | 8.4 | 13.9 |
| 1153.0 | 11.0 | 11.0 | 152 | 10.3 | 1.19 | 13.28 | 111515 | 322.00 | 166.31 | 8.4 | 13.9 |
| 1154.0 | 7.8 | 10.0 | 154 | 10.3 | 1.24 | 13.40 | 112700 | 454.10 | 167.09 | 8.4 | 13.9 |
| 1155.0 | 8.2 | 10.0 | 154 | 10.3 | 1.23 | 13.53 | 113827 | 431.95 | 167.81 | 8.4 | 13.9 |
| 1156.0 | 8.2 | 12.0 | 152 | 10.3 | 1.27 | 13.65 | 114939 | 431.95 | 168.52 | 8.4 | 13.9 |
| 1157.0 | 3.3 | 13.0 | 145 | 10.3 | 1.49 | 13.95 | 117575 | 1073 | 171 | 8.4 | 13.9 |
| 1158.0 | 8.5 | 14.0 | 150 | 10.3 | 1.31 | 14.07 | 118634 | 416.71 | 171.62 | 8.4 | 13.9 |
| 1159.0 | 10.0 | 13.0 | 150 | 10.3 | 1.25 | 14.17 | 119534 | 354.20 | 172.11 | 8.4 | 13.9 |
| 1160.0 | 8.9 | 15.0 | 145 | 10.3 | 1.31 | 14.28 | 120512 | 397.98 | 172.72 | 8.4 | 13.9 |
| 1161.0 | 9.1 | 15.0 | 145 | 10.3 | 1.31 | 14.39 | 121468 | 389.23 | 173.29 | 8.4 | 13.9 |
| 1162.0 | 10.0 | 15.0 | 145 | 10.3 | 1.28 | 14.49 | 122338 | 354.20 | 173.77 | 8.4 | 14.0 |
| 1163.0 | 10.0 | 15.0 | 145 | 10.3 | 1.28 | 14.59 | 123208 | 354.20 | 174.25 | 8.4 | 14.0 |
| 1164.0 | 8.5 | 15.0 | 145 | 10.3 | 1.32 | 14.71 | 124231 | 416.71 | 174.89 | 8.4 | 14.0 |
| 1165.0 | 13.3 | 15.0 | 145 | 10.3 | 1.22 | 14.78 | 124885 | 266.32 | 175.14 | 8.4 | 14.0 |
| 1166.0 | 20.3 | 15.0 | 122 | 10.3 | 1.08 | 14.83 | 125246 | 174.48 | 175.13 | 8.4 | 14.0 |
| 1167.0 | 12.3 | 17.0 | 122 | 10.2 | 1.25 | 14.91 | 125841 | 287.97 | 175.43 | 8.4 | 14.0 |
| 1168.0 | 5.6 | 16.0 | 108 | 10.2 | 1.38 | 15.09 | 126998 | 632.50 | 176.43 | 8.4 | 14.0 |
| 1169.0 | 10.6 | 16.0 | 108 | 10.2 | 1.23 | 15.19 | 127609 | 334.15 | 177.04 | 8.4 | 14.0 |
| 1170.0 | 12.6 | 11.0 | 108 | 10.2 | 1.09 | 15.27 | 128124 | 281.11 | 177.31 | 8.4 | 14.0 |
| 1171.0 | 14.5 | 11.0 | 108 | 10.2 | 1.06 | 15.34 | 128571 | 244.25 | 177.48 | 8.4 | 14.0 |
| 1173.0 | 13.2 | 12.0 | 145 | 10.1 | 1.18 | 15.49 | 129889 | 268.33 | 177.95 | 8.4 | 14.0 |
| 1174.0 | 12.7 | 12.0 | 145 | 10.1 | 1.12 | 15.57 | 130574 | 278.90 | 178.21 | 8.4 | 14.0 |
| 1175.0 | 4.4 | 12.0 | 145 | 10.1 | 1.43 | 15.79 | 132551 | 805.00 | 179.82 | 8.4 | 14.0 |
| 1176.0 | 12.0 | 12.0 | 145 | 10.1 | 1.20 | 15.88 | 133276 | 295.17 | 180.12 | 8.4 | 14.0 |
| 1177.0 | 9.1 | 12.0 | 145 | 10.1 | 1.26 | 15.99 | 134232 | 389.23 | 180.65 | 8.4 | 14.0 |
| 1178.0 | 7.3 | 13.0 | 146 | 10.1 | 1.34 | 16.12 | 135432 | 485.21 | 181.43 | 8.4 | 14.0 |
| 1179.0 | 7.2 | 9.0 | 140 | 10.1 | 1.23 | 16.26 | 136599 | 491.94 | 182.22 | 8.4 | 14.0 |
| 1180.0 | 6.9 | 9.0 | 140 | 10.1 | 1.24 | 16.41 | 137816 | 513.33 | 183.06 | 8.4 | 14.0 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1181.0 | 9.1 | 8.0 | 140 | 10.2 | 1.14 | 16.52 | 138739 | 389.23 | 183.58 | 8.4 | 14.0 |
| 1182.0 | 12.9 | 10.0 | 140 | 10.2 | 1.12 | 16.59 | 139390 | 274.57 | 183.81 | 8.4 | 14.0 |
| 1183.0 | 8.9 | 10.0 | 140 | 10.2 | 1.20 | 16.71 | 140334 | 397.98 | 184.35 | 8.4 | 14.0 |
| 1184.0 | 8.2 | 10.0 | 140 | 10.2 | 1.22 | 16.83 | 141359 | 431.95 | 184.98 | 8.4 | 14.0 |
| 1185.0 | 12.5 | 10.0 | 140 | 10.2 | 1.13 | 16.91 | 142031 | 283.36 | 185.22 | 8.4 | 14.0 |
| 1186.0 | 9.1 | 8.0 | 140 | 10.2 | 1.14 | 17.02 | 142954 | 389.23 | 185.73 | 8.4 | 14.0 |
| 1187.0 | 12.1 | 9.0 | 140 | 10.2 | 1.11 | 17.10 | 143648 | 292.73 | 186.00 | 8.4 | 14.0 |
| 1188.0 | 6.9 | 10.0 | 140 | 10.2 | 1.25 | 17.25 | 144865 | 513.33 | 186.81 | 8.4 | 14.0 |
| 1189.0 | 7.8 | 10.0 | 140 | 10.2 | 1.23 | 17.37 | 145942 | 454.10 | 187.48 | 8.4 | 14.0 |
| 1190.0 | 9.6 | 10.0 | 140 | 10.2 | 1.18 | 17.48 | 146817 | 368.96 | 187.93 | 8.4 | 14.0 |
| 1191.0 | 9.6 | 8.0 | 135 | 10.2 | 1.12 | 17.58 | 147661 | 368.96 | 188.37 | 8.4 | 14.0 |
| 1192.0 | 10.5 | 8.0 | 135 | 10.2 | 1.10 | 17.68 | 148432 | 337.33 | 188.74 | 8.4 | 14.0 |
| 1193.0 | 3.0 | 8.0 | 135 | 10.2 | 1.34 | 18.01 | 151132 | 1181 | 191 | 8.4 | 14.0 |
| 1194.0 | 6.9 | 10.0 | 135 | 10.2 | 1.25 | 18.16 | 152306 | 513.33 | 191.97 | 8.4 | 14.0 |
| 1195.0 | 4.7 | 10.0 | 135 | 10.2 | 1.33 | 18.37 | 154030 | 753.62 | 193.34 | 8.4 | 14.0 |
| 1196.0 | 2.4 | 10.0 | 135 | 10.2 | 1.47 | 18.79 | 157405 | 1476 | 196 | 8.4 | 14.0 |
| 1197.0 | 3.4 | 24.0 | 130 | 10.2 | 1.71 | 19.08 | 159699 | 1042 | 199 | 8.4 | 14.0 |
| 1198.0 | 16.8 | 24.0 | 130 | 10.2 | 1.29 | 19.14 | 160163 | 210.83 | 198.55 | 8.4 | 14.0 |
| 1199.0 | 10.6 | 24.0 | 130 | 10.2 | 1.42 | 19.23 | 160899 | 334.15 | 198.88 | 8.4 | 14.0 |
| 1200.0 | 6.8 | 26.0 | 136 | 10.2 | 1.58 | 19.38 | 162099 | 520.88 | 199.66 | 8.4 | 14.0 |
| 1201.0 | 6.4 | 26.0 | 136 | 10.2 | 1.59 | 19.54 | 163374 | 553.44 | 200.51 | 8.4 | 14.0 |
| 1202.0 | 22.0 | 24.0 | 136 | 10.2 | 1.24 | 19.58 | 163745 | 161.00 | 200.42 | 8.4 | 14.0 |
| 1203.0 | 25.1 | 24.0 | 136 | 10.2 | 1.20 | 19.62 | 164070 | 141.12 | 200.28 | 8.4 | 14.0 |
| 1204.0 | 22.0 | 24.0 | 136 | 10.2 | 1.24 | 19.67 | 164441 | 161.00 | 200.18 | 8.4 | 14.0 |
| 1205.0 | 30.3 | 24.0 | 138 | 10.2 | 1.16 | 19.70 | 164714 | 116.90 | 199.98 | 8.4 | 14.0 |
| 1206.0 | 18.8 | 23.0 | 138 | 10.2 | 1.27 | 19.75 | 165155 | 188.40 | 199.96 | 8.4 | 14.0 |
| 1207.0 | 13.6 | 25.0 | 138 | 10.2 | 1.38 | 19.83 | 165763 | 260.44 | 200.10 | 8.4 | 14.0 |
| 1208.0 | 14.0 | 25.0 | 138 | 10.2 | 1.37 | 19.90 | 166355 | 253.00 | 200.22 | 8.4 | 14.0 |
| 1209.0 | 17.6 | 25.0 | 138 | 10.2 | 1.31 | 19.96 | 166825 | 201.25 | 200.23 | 8.4 | 14.0 |
| 1210.0 | 17.0 | 25.0 | 138 | 10.2 | 1.32 | 20.01 | 167312 | 208.35 | 200.25 | 8.4 | 14.0 |
| 1211.0 | 17.0 | 25.0 | 138 | 10.2 | 1.32 | 20.07 | 167799 | 208.35 | 200.26 | 8.4 | 14.1 |
| 1212.0 | 22.0 | 25.0 | 137 | 10.2 | 1.25 | 20.12 | 168173 | 161.00 | 200.17 | 8.4 | 14.1 |
| 1213.0 | 33.0 | 24.0 | 137 | 10.2 | 1.13 | 20.15 | 168422 | 107.33 | 199.96 | 8.4 | 14.1 |
| 1214.0 | 23.5 | 24.0 | 137 | 10.2 | 1.22 | 20.19 | 168772 | 150.72 | 199.84 | 8.4 | 14.1 |
| 1215.0 | 15.0 | 24.0 | 137 | 10.2 | 1.34 | 20.26 | 169320 | 236.13 | 199.92 | 8.4 | 14.1 |
| 1216.0 | 12.1 | 24.0 | 137 | 10.2 | 1.39 | 20.34 | 169999 | 292.73 | 200.14 | 8.4 | 14.1 |
| 1217.0 | 13.9 | 25.0 | 136 | 10.2 | 1.37 | 20.41 | 170586 | 254.82 | 200.27 | 8.4 | 14.1 |
| 1218.0 | 12.4 | 25.0 | 136 | 10.2 | 1.40 | 20.49 | 171244 | 285.65 | 200.47 | 8.4 | 14.1 |
| 1219.0 | 41.0 | 25.0 | 136 | 10.2 | 1.09 | 20.52 | 171443 | 86.39 | 200.20 | 8.4 | 14.1 |
| 1220.0 | 51.2 | 25.0 | 136 | 10.2 | 1.03 | 20.54 | 171603 | 69.18 | 199.90 | 8.4 | 14.1 |
| 1221.0 | 20.0 | 21.0 | 140 | 10.2 | 1.22 | 20.59 | 172023 | 177.10 | 199.85 | 8.4 | 14.1 |
| 1222.0 | 21.7 | 21.0 | 140 | 10.2 | 1.20 | 20.63 | 172410 | 163.23 | 199.76 | 8.4 | 14.1 |
| 1223.0 | 25.0 | 21.0 | 140 | 10.2 | 1.17 | 20.67 | 172746 | 141.68 | 199.63 | 8.4 | 14.1 |
| 1224.0 | 27.3 | 21.0 | 140 | 10.2 | 1.15 | 20.71 | 173054 | 129.74 | 199.47 | 8.4 | 14.1 |
| 1225.0 | 33.0 | 21.0 | 140 | 10.2 | 1.10 | 20.74 | 173308 | 107.33 | 199.26 | 8.4 | 14.1 |
| 1226.0 | 27.0 | 21.0 | 140 | 10.2 | 1.15 | 20.78 | 173619 | 131.19 | 199.11 | 8.4 | 14.1 |
| 1227.0 | 27.0 | 21.0 | 140 | 10.2 | 1.15 | 20.81 | 173930 | 131.19 | 198.95 | 8.4 | 14.1 |
| 1228.0 | 31.7 | 21.0 | 140 | 10.2 | 1.11 | 20.85 | 174195 | 111.74 | 198.75 | 8.4 | 14.1 |
| 1229.0 | 31.0 | 21.0 | 140 | 10.2 | 1.11 | 20.88 | 174466 | 114.26 | 198.56 | 8.4 | 14.1 |
| 1230.0 | 31.0 | 24.0 | 140 | 10.2 | 1.15 | 20.91 | 174737 | 114.26 | 198.37 | 8.4 | 14.1 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | TCOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1231.0 | 22.0 | 24.0 | 140 | 10.2 | 1.24 | 20.96 | 175119 | 161.00 | 198.29 | 8.4 | 14.1 |
| 1232.0 | 23.0 | 22.0 | 140 | 10.2 | 1.29 | 21.00 | 175484 | 154.00 | 198.19 | 8.4 | 14.1 |
| 1233.0 | 27.0 | 22.0 | 140 | 10.2 | 1.16 | 21.04 | 175795 | 131.19 | 198.04 | 8.4 | 14.1 |
| 1234.0 | 26.3 | 22.0 | 140 | 10.2 | 1.17 | 21.07 | 176115 | 134.68 | 197.90 | 8.4 | 14.1 |
| 1235.0 | 20.0 | 22.0 | 140 | 10.2 | 1.24 | 21.12 | 176535 | 177.10 | 197.85 | 8.4 | 14.1 |
| 1236.0 | 22.6 | 22.0 | 140 | 10.2 | 1.21 | 21.17 | 176907 | 156.73 | 197.76 | 8.4 | 14.1 |
| 1237.0 | 11.8 | 22.0 | 140 | 10.2 | 1.37 | 21.25 | 177618 | 300.17 | 197.99 | 8.4 | 14.1 |
| 1238.0 | 17.0 | 26.0 | 140 | 10.2 | 1.34 | 21.31 | 178113 | 208.35 | 198.01 | 8.4 | 14.1 |
| 1239.0 | 18.0 | 26.0 | 140 | 10.2 | 1.32 | 21.37 | 178579 | 196.78 | 198.01 | 8.4 | 14.1 |
| 1240.0 | 15.0 | 22.0 | 140 | 10.2 | 1.31 | 21.43 | 179139 | 236.13 | 198.09 | 8.4 | 14.1 |
| 1241.0 | 21.0 | 22.0 | 140 | 10.2 | 1.23 | 21.48 | 179539 | 168.67 | 198.03 | 8.4 | 14.1 |
| 1242.0 | 22.0 | 22.0 | 140 | 10.2 | 1.22 | 21.53 | 179921 | 161.00 | 197.95 | 8.4 | 14.1 |
| 1243.0 | 22.0 | 22.0 | 140 | 10.2 | 1.22 | 21.57 | 180303 | 161.00 | 197.87 | 8.4 | 14.1 |
| 1244.0 | 20.0 | 22.0 | 140 | 10.2 | 1.24 | 21.62 | 180723 | 177.10 | 197.82 | 8.4 | 14.1 |
| 1245.0 | 10.0 | 22.0 | 140 | 10.2 | 1.42 | 21.72 | 181563 | 354.20 | 196.16 | 8.4 | 14.1 |
| 1246.0 | 25.0 | 22.0 | 140 | 10.2 | 1.13 | 21.76 | 181899 | 141.68 | 198.04 | 8.4 | 14.1 |
| 1247.0 | 12.0 | 22.0 | 140 | 10.2 | 1.37 | 21.85 | 182599 | 295.17 | 198.25 | 8.4 | 14.1 |
| 1248.0 | 51.0 | 22.0 | 140 | 10.2 | 1.00 | 21.87 | 182764 | 69.45 | 197.77 | 8.4 | 14.1 |
| 1249.0 | 43.0 | 22.0 | 140 | 10.2 | 1.04 | 21.89 | 182959 | 82.37 | 197.72 | 8.4 | 14.1 |
| 1250.0 | 36.0 | 22.0 | 140 | 10.2 | 1.07 | 21.92 | 183192 | 98.39 | 197.51 | 8.4 | 14.1 |
| 1251.0 | 45.0 | 22.0 | 140 | 10.2 | 1.03 | 21.94 | 183379 | 78.71 | 197.25 | 8.4 | 14.1 |
| 1252.0 | 41.0 | 22.0 | 140 | 10.2 | 1.06 | 21.96 | 183584 | 86.39 | 197.01 | 8.4 | 14.1 |
| 1253.0 | 61.0 | 22.0 | 140 | 10.2 | 0.95 | 21.98 | 183721 | 58.07 | 196.72 | 8.4 | 14.1 |
| 1254.0 | 67.0 | 20.0 | 140 | 10.2 | 0.91 | 21.99 | 183847 | 52.87 | 196.41 | 8.4 | 14.1 |
| 1255.0 | 32.0 | 20.0 | 140 | 10.2 | 1.09 | 22.03 | 184109 | 110.69 | 196.23 | 8.4 | 14.1 |
| 1256.0 | 42.0 | 20.0 | 140 | 10.2 | 1.02 | 22.05 | 184309 | 84.33 | 195.99 | 8.4 | 14.1 |
| 1257.0 | 25.0 | 20.0 | 140 | 10.2 | 1.15 | 22.09 | 184645 | 141.68 | 195.87 | 8.4 | 14.1 |
| 1258.0 | 25.0 | 20.0 | 140 | 10.2 | 1.15 | 22.13 | 184981 | 141.68 | 195.76 | 8.4 | 14.1 |
| 1259.0 | 28.0 | 20.0 | 140 | 10.2 | 1.13 | 22.17 | 185281 | 126.50 | 195.61 | 8.4 | 14.1 |
| 1260.0 | 70.0 | 20.0 | 140 | 10.2 | 0.90 | 22.18 | 185401 | 50.60 | 195.31 | 8.4 | 14.1 |
| 1261.0 | 51.0 | 20.0 | 140 | 10.2 | 0.98 | 22.20 | 185566 | 69.45 | 195.04 | 8.4 | 14.1 |
| 1262.0 | 52.0 | 20.0 | 140 | 10.2 | 0.97 | 22.22 | 185728 | 68.12 | 194.77 | 8.4 | 14.1 |
| 1263.0 | 67.0 | 20.0 | 140 | 10.2 | 0.91 | 22.23 | 185853 | 52.87 | 194.48 | 8.4 | 14.1 |
| 1264.0 | 64.0 | 20.0 | 140 | 10.2 | 0.92 | 22.25 | 185984 | 55.34 | 194.19 | 8.4 | 14.2 |
| 1265.0 | 100.0 | 20.0 | 140 | 10.2 | 0.81 | 22.26 | 186068 | 35.42 | 193.85 | 8.4 | 14.2 |
| 1266.0 | 85.0 | 20.0 | 140 | 10.2 | 0.85 | 22.27 | 186167 | 41.67 | 193.54 | 8.4 | 14.2 |
| 1267.0 | 51.0 | 20.0 | 140 | 10.2 | 0.98 | 22.29 | 186332 | 69.45 | 193.28 | 8.4 | 14.2 |
| 1268.0 | 54.0 | 20.0 | 140 | 10.2 | 0.96 | 22.31 | 186487 | 65.59 | 193.01 | 8.4 | 14.2 |
| 1269.0 | 41.0 | 22.0 | 140 | 10.2 | 1.06 | 22.33 | 186692 | 86.39 | 192.79 | 8.4 | 14.2 |
| 1270.0 | 150.0 | 22.0 | 140 | 10.2 | 0.72 | 22.34 | 186748 | 23.61 | 192.44 | 8.4 | 14.2 |
| 1271.0 | 100.0 | 22.0 | 140 | 10.2 | 0.83 | 22.35 | 186832 | 35.42 | 192.12 | 8.4 | 14.2 |
| 1272.0 | 96.0 | 22.0 | 140 | 10.2 | 0.84 | 22.36 | 186920 | 36.90 | 191.80 | 8.4 | 14.2 |
| 1273.0 | 82.0 | 22.0 | 140 | 10.2 | 0.88 | 22.37 | 187022 | 43.20 | 191.50 | 8.4 | 14.2 |
| 1274.0 | 45.0 | 22.0 | 140 | 10.2 | 1.03 | 22.39 | 187209 | 78.71 | 191.26 | 8.4 | 14.2 |
| 1275.0 | 47.0 | 22.0 | 140 | 10.2 | 1.02 | 22.42 | 187387 | 75.36 | 191.03 | 8.4 | 14.2 |
| 1276.0 | 38.0 | 22.0 | 140 | 10.2 | 1.08 | 22.44 | 187609 | 93.21 | 190.83 | 8.4 | 14.2 |
| 1277.0 | 17.0 | 22.0 | 140 | 10.2 | 1.28 | 22.50 | 188103 | 208.35 | 190.86 | 8.4 | 14.2 |
| 1278.0 | 13.3 | 22.0 | 140 | 10.2 | 1.34 | 22.58 | 188734 | 266.32 | 191.02 | 8.4 | 14.2 |
| 1279.0 | 20.4 | 22.0 | 140 | 10.2 | 1.23 | 22.63 | 189146 | 173.63 | 190.98 | 8.4 | 14.2 |
| 1280.0 | 66.0 | 22.0 | 140 | 10.2 | 0.93 | 22.64 | 189273 | 53.67 | 190.70 | 8.4 | 14.2 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1281.0 | 22.0 | 22.0 | 140 | 10.2 | 1.22 | 22.69 | 189655 | 161.00 | 190.64 | 8.4 | 14.2 |
| 1282.0 | 26.0 | 22.0 | 140 | 10.2 | 1.17 | 22.72 | 189978 | 136.23 | 190.53 | 8.4 | 14.2 |
| 1283.0 | 37.0 | 22.0 | 140 | 10.2 | 1.08 | 22.75 | 190205 | 95.73 | 190.34 | 8.4 | 14.2 |
| 1284.0 | 32.0 | 22.0 | 140 | 10.2 | 1.12 | 22.78 | 190468 | 110.69 | 190.18 | 8.4 | 14.2 |
| 1285.0 | 23.0 | 22.0 | 140 | 10.2 | 1.20 | 22.83 | 190833 | 154.00 | 190.11 | 8.4 | 14.2 |
| 1286.0 | 12.0 | 20.0 | 140 | 10.2 | 1.34 | 22.91 | 191533 | 295.17 | 190.32 | 8.4 | 14.2 |
| 1287.0 | 12.0 | 20.0 | 140 | 10.2 | 1.34 | 22.99 | 192233 | 295.17 | 190.53 | 8.4 | 14.2 |
| 1288.0 | 20.0 | 24.0 | 140 | 10.2 | 1.27 | 23.04 | 192653 | 177.10 | 190.50 | 8.4 | 14.2 |
| 1289.0 | 40.0 | 24.0 | 140 | 10.2 | 1.09 | 23.07 | 192863 | 88.55 | 190.30 | 8.4 | 14.2 |
| 1290.0 | 82.0 | 24.0 | 140 | 10.2 | 0.90 | 23.08 | 192965 | 43.20 | 190.01 | 8.4 | 14.2 |
| 1291.0 | 12.0 | 24.0 | 140 | 10.2 | 1.40 | 23.16 | 193665 | 295.17 | 190.22 | 8.4 | 14.2 |
| 1292.0 | 23.0 | 26.0 | 136 | 10.2 | 1.25 | 23.21 | 194020 | 154.00 | 190.15 | 8.4 | 14.2 |
| 1293.0 | 21.0 | 26.0 | 136 | 10.2 | 1.28 | 23.25 | 194409 | 168.67 | 190.10 | 8.4 | 14.2 |
| 1294.0 | 20.0 | 28.0 | 136 | 10.2 | 1.31 | 23.30 | 194817 | 177.10 | 190.08 | 8.4 | 14.2 |
| 1295.0 | 100.0 | 28.0 | 136 | 10.2 | 0.88 | 23.31 | 194898 | 35.42 | 189.77 | 8.4 | 14.2 |
| 1296.0 | 85.0 | 28.0 | 136 | 10.2 | 0.92 | 23.33 | 194994 | 41.67 | 189.48 | 8.4 | 14.2 |
| 1297.0 | 34.0 | 28.0 | 136 | 10.2 | 1.17 | 23.36 | 195234 | 104.18 | 189.32 | 8.4 | 14.2 |
| 1298.0 | 85.0 | 26.0 | 136 | 10.2 | 0.90 | 23.37 | 195330 | 41.67 | 189.03 | 8.4 | 14.2 |
| 1299.0 | 85.0 | 26.0 | 136 | 10.2 | 0.90 | 23.38 | 195426 | 41.67 | 188.74 | 8.4 | 14.2 |
| 1300.0 | 61.7 | 26.0 | 136 | 10.2 | 0.99 | 23.40 | 195559 | 57.41 | 188.49 | 8.4 | 14.2 |
| 1301.0 | 56.2 | 26.0 | 136 | 10.2 | 1.01 | 23.41 | 195704 | 63.02 | 188.24 | 8.4 | 14.2 |
| 1302.0 | 10.1 | 20.0 | 138 | 10.2 | 1.38 | 23.51 | 196524 | 350.69 | 188.56 | 8.4 | 14.2 |
| 1303.0 | 42.7 | 20.0 | 138 | 10.2 | 1.02 | 23.54 | 196717 | 82.95 | 188.35 | 8.4 | 14.2 |
| 1304.0 | 12.0 | 20.0 | 138 | 10.2 | 1.33 | 23.62 | 197407 | 295.17 | 188.56 | 8.4 | 14.2 |
| 1305.0 | 111.0 | 20.0 | 138 | 10.2 | 0.78 | 23.63 | 197482 | 31.91 | 188.26 | 8.4 | 14.2 |
| 1306.0 | 18.0 | 20.0 | 138 | 10.2 | 1.23 | 23.68 | 197942 | 196.78 | 188.27 | 8.4 | 14.2 |
| 1307.0 | 63.0 | 20.0 | 138 | 10.2 | 0.92 | 23.70 | 198074 | 56.22 | 188.02 | 8.4 | 14.2 |
| 1308.0 | 25.0 | 20.0 | 138 | 10.2 | 1.15 | 23.74 | 198405 | 141.68 | 187.73 | 8.4 | 14.2 |
| 1309.0 | 24.3 | 20.0 | 138 | 10.2 | 1.16 | 23.78 | 198745 | 145.76 | 187.65 | 8.4 | 14.2 |
| 1310.0 | 27.0 | 20.0 | 138 | 10.2 | 1.13 | 23.82 | 199052 | 131.17 | 187.74 | 8.4 | 14.2 |
| 1311.0 | 69.0 | 20.0 | 138 | 10.2 | 0.90 | 23.83 | 199172 | 51.33 | 187.48 | 8.4 | 14.2 |
| 1312.0 | 96.0 | 20.0 | 138 | 10.2 | 0.81 | 23.84 | 199258 | 36.90 | 187.20 | 8.4 | 14.2 |
| 1313.0 | 91.0 | 20.0 | 138 | 10.2 | 0.83 | 23.85 | 199349 | 38.92 | 186.91 | 8.4 | 14.2 |
| 1314.0 | 40.0 | 22.0 | 135 | 10.2 | 1.05 | 23.88 | 199552 | 88.55 | 186.73 | 8.4 | 14.2 |
| 1315.0 | 29.0 | 22.0 | 135 | 10.2 | 1.14 | 23.91 | 199831 | 122.14 | 186.61 | 8.4 | 14.2 |
| 1316.0 | 10.0 | 22.0 | 135 | 10.2 | 1.41 | 24.01 | 200641 | 354.20 | 186.92 | 8.4 | 14.2 |
| 1317.0 | 8.2 | 18.0 | 135 | 10.2 | 1.39 | 24.14 | 201629 | 431.95 | 187.38 | 8.4 | 14.2 |
| 1318.0 | 8.9 | 18.0 | 135 | 10.2 | 1.37 | 24.25 | 202539 | 397.98 | 187.78 | 8.4 | 14.2 |
| 1319.0 | 9.6 | 18.0 | 135 | 10.2 | 1.35 | 24.35 | 203383 | 368.96 | 188.12 | 8.4 | 14.3 |
| 1320.0 | 18.0 | 18.0 | 135 | 10.2 | 1.19 | 24.41 | 203833 | 196.78 | 188.14 | 8.4 | 14.3 |
| 1321.0 | 103.0 | 18.0 | 135 | 10.2 | 0.77 | 24.42 | 203911 | 34.39 | 187.85 | 8.4 | 14.3 |
| 1322.0 | 227.0 | 18.0 | 135 | 10.2 | 0.58 | 24.42 | 203947 | 15.60 | 187.53 | 8.4 | 14.3 |
| 1323.0 | 200.0 | 18.0 | 135 | 10.2 | 0.61 | 24.43 | 203988 | 17.71 | 187.21 | 8.4 | 14.3 |
| 1324.0 | 114.0 | 7.0 | 135 | 10.2 | 0.61 | 24.44 | 204059 | 31.07 | 186.92 | 8.4 | 14.3 |
| 1325.0 | 96.0 | 13.0 | 140 | 10.1 | 0.75 | 24.45 | 204146 | 36.90 | 186.64 | 8.4 | 14.3 |
| 1326.0 | 63.0 | 13.0 | 140 | 10.1 | 0.84 | 24.46 | 204280 | 56.22 | 186.40 | 8.4 | 14.3 |
| 1327.0 | 64.0 | 13.0 | 140 | 10.0 | 0.85 | 24.48 | 204411 | 55.34 | 186.16 | 8.4 | 14.3 |
| 1328.0 | 15.5 | 20.0 | 140 | 10.0 | 1.30 | 24.54 | 204953 | 228.52 | 186.24 | 8.4 | 14.3 |
| 1329.0 | 136.0 | 20.0 | 140 | 10.0 | 0.75 | 24.55 | 205014 | 26.04 | 185.94 | 8.4 | 14.3 |
| 1330.0 | 185.0 | 20.0 | 140 | 10.0 | 0.67 | 24.55 | 205060 | 19.15 | 185.63 | 8.4 | 14.3 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1331.0 | 102.0 | 20.0 | 140 | 10.0 | 0.82 | 24.56 | 205142 | 34.73 | 185.36 | 8.4 | 14.3 |
| 1332.0 | 85.0 | 20.0 | 140 | 10.0 | 0.87 | 24.58 | 205241 | 41.67 | 185.09 | 8.4 | 14.3 |
| 1333.0 | 85.0 | 20.0 | 140 | 10.0 | 0.87 | 24.59 | 205340 | 41.67 | 184.83 | 8.4 | 14.3 |
| 1334.0 | 85.0 | 20.0 | 140 | 10.0 | 0.87 | 24.60 | 205439 | 41.67 | 184.57 | 8.4 | 14.3 |
| 1335.0 | 52.0 | 15.0 | 140 | 10.0 | 0.92 | 24.62 | 205600 | 68.12 | 184.36 | 8.4 | 14.3 |
| 1336.0 | 51.0 | 15.0 | 140 | 10.0 | 0.93 | 24.64 | 205765 | 69.45 | 184.15 | 8.4 | 14.3 |
| 1337.0 | 125.0 | 18.0 | 140 | 10.0 | 0.75 | 24.65 | 205832 | 28.34 | 183.87 | 8.4 | 14.3 |
| 1338.0 | 77.0 | 18.0 | 140 | 10.0 | 0.87 | 24.66 | 205941 | 46.00 | 183.62 | 8.4 | 14.3 |
| 1339.0 | 17.0 | 22.0 | 140 | 10.0 | 1.31 | 24.72 | 206435 | 208.35 | 183.66 | 8.4 | 14.3 |
| 1340.0 | 9.6 | 22.0 | 137 | 10.0 | 1.45 | 24.82 | 207292 | 368.96 | 184.00 | 8.4 | 14.3 |
| 1341.0 | 12.0 | 22.0 | 137 | 10.0 | 1.39 | 24.91 | 207977 | 295.17 | 184.20 | 8.4 | 14.3 |
| 1342.0 | 16.0 | 23.0 | 135 | 10.0 | 1.33 | 24.97 | 208483 | 221.38 | 184.26 | 8.4 | 14.3 |
| 1343.0 | 56.0 | 23.0 | 135 | 10.0 | 1.00 | 24.99 | 208628 | 63.25 | 184.05 | 8.4 | 14.3 |
| 1344.0 | 106.0 | 23.0 | 135 | 10.0 | 0.83 | 25.00 | 208704 | 33.42 | 183.78 | 8.4 | 14.3 |
| 1345.0 | 30.0 | 24.0 | 135 | 10.0 | 1.18 | 25.03 | 208974 | 118.07 | 183.66 | 8.4 | 14.3 |
| 1346.0 | 78.0 | 24.0 | 135 | 10.0 | 0.92 | 25.04 | 209078 | 45.41 | 183.41 | 8.4 | 14.3 |
| 1347.0 | 104.0 | 24.0 | 135 | 10.0 | 0.84 | 25.05 | 209156 | 34.06 | 183.15 | 8.4 | 14.3 |
| 1348.0 | 77.0 | 21.0 | 133 | 10.0 | 0.89 | 25.06 | 209259 | 46.00 | 182.90 | 8.4 | 14.3 |
| 1349.0 | 77.0 | 21.0 | 133 | 10.0 | 0.89 | 25.08 | 209363 | 46.00 | 182.66 | 8.4 | 14.3 |
| 1350.0 | 84.0 | 20.0 | 133 | 10.0 | 0.86 | 25.09 | 209458 | 42.17 | 182.41 | 8.4 | 14.3 |
| 1351.0 | 12.1 | 23.0 | 133 | 10.0 | 1.40 | 25.17 | 210117 | 292.73 | 182.61 | 8.4 | 14.3 |
| 1352.0 | 13.7 | 23.0 | 133 | 10.0 | 1.37 | 25.24 | 210700 | 258.54 | 182.74 | 8.4 | 14.3 |
| 1353.0 | 4.5 | 23.0 | 133 | 10.0 | 1.66 | 25.47 | 212473 | 787.11 | 183.81 | 8.4 | 14.3 |
| 1354.0 | 9.6 | 23.0 | 134 | 10.0 | 1.46 | 25.57 | 213311 | 368.96 | 184.13 | 8.4 | 14.3 |
| 1355.0 | 73.0 | 23.0 | 134 | 9.9 | 0.94 | 25.58 | 213421 | 48.52 | 183.89 | 8.4 | 14.3 |
| 1356.0 | 3.4 | 23.0 | 133 | 9.9 | 1.75 | 25.88 | 215768 | 1042 | 185 | 8.4 | 14.3 |
| 1357.0 | 3.6 | 23.0 | 133 | 9.9 | 1.74 | 26.16 | 217985 | 983.89 | 186.80 | 8.4 | 14.3 |
| 1358.0 | 4.4 | 16.0 | 132 | 9.9 | 1.53 | 26.38 | 219785 | 805.00 | 187.88 | 8.4 | 14.3 |
| 1359.0 | 4.0 | 18.0 | 136 | 9.9 | 1.61 | 26.63 | 221825 | 885.50 | 189.09 | 8.4 | 14.3 |
| 1360.0 | 4.4 | 24.0 | 136 | 9.8 | 1.72 | 26.86 | 223679 | 805.00 | 190.17 | 8.4 | 14.3 |
| 1361.0 | 4.3 | 26.0 | 135 | 9.8 | 1.76 | 27.09 | 225563 | 823.72 | 191.27 | 8.4 | 14.3 |
| 1362.0 | 4.2 | 26.0 | 135 | 9.9 | 1.76 | 27.33 | 227491 | 843.33 | 192.40 | 8.4 | 14.3 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 4 | IADC CODE | 135 | INTERVAL | 1362.0- 1405.0 |
| HTC XDG | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1440.00 | TRIP TIME | 4.0 | BIT RUN | 123.0 |
| TOTAL HOURS | 12.50 | TOTAL TURNS | 100438 | CONDITION | T7 B4 G0.250 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | TCOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1363.0 | 4.2 | 18.0 | 140 | 10.5 | 1.51 | 0.24 | 2000 | 843 | 16451 | 8.4 | 14.3 |
| 1364.0 | 34.0 | 27.0 | 133 | 10.5 | 1.10 | 0.27 | 2222 | 98 | 8275 | 8.4 | 14.3 |
| 1365.0 | 31.0 | 28.0 | 133 | 10.5 | 1.16 | 0.30 | 2479 | 114 | 5555 | 8.4 | 14.3 |
| 1366.0 | 46.0 | 30.0 | 133 | 10.5 | 1.07 | 0.32 | 2653 | 77 | 4185 | 8.4 | 14.3 |
| 1367.0 | 5.9 | 28.0 | 133 | 10.5 | 1.59 | 0.49 | 4005 | 600 | 3468 | 8.4 | 14.3 |
| 1368.0 | 3.2 | 34.0 | 133 | 10.5 | 1.86 | 0.80 | 6499 | 1107 | 3075 | 8.4 | 14.3 |
| 1369.0 | 3.4 | 40.0 | 133 | 10.4 | 1.95 | 1.10 | 8846 | 1042 | 2784 | 8.4 | 14.3 |
| 1370.0 | 2.8 | 30.0 | 133 | 10.4 | 1.84 | 1.45 | 11696 | 1265 | 2574 | 8.4 | 14.3 |
| 1371.0 | 6.7 | 29.0 | 133 | 10.4 | 1.59 | 1.60 | 12887 | 529 | 2365 | 8.4 | 14.3 |
| 1372.0 | 21.0 | 30.0 | 133 | 10.4 | 1.30 | 1.65 | 13267 | 169 | 2145 | 8.4 | 14.3 |
| 1373.0 | 14.7 | 24.0 | 135 | 10.4 | 1.31 | 1.72 | 13818 | 241 | 1972 | 8.4 | 14.3 |
| 1374.0 | 8.2 | 25.0 | 135 | 10.4 | 1.48 | 1.84 | 14806 | 432 | 1844 | 8.4 | 14.4 |
| 1375.0 | 8.5 | 23.0 | 135 | 10.4 | 1.44 | 1.96 | 15759 | 417 | 1734 | 8.4 | 14.4 |
| 1376.0 | 7.2 | 20.0 | 135 | 10.4 | 1.43 | 2.10 | 16884 | 492 | 1645 | 8.4 | 14.4 |
| 1377.0 | 5.6 | 20.0 | 135 | 10.4 | 1.49 | 2.28 | 18330 | 633 | 1578 | 8.4 | 14.4 |
| 1378.0 | 34.0 | 30.0 | 135 | 10.4 | 1.17 | 2.30 | 18568 | 104 | 1486 | 8.4 | 14.4 |
| 1379.0 | 50.1 | 35.0 | 135 | 10.4 | 1.11 | 2.32 | 18730 | 71 | 1407 | 8.4 | 14.4 |
| 1380.0 | 50.0 | 35.0 | 135 | 10.4 | 1.11 | 2.34 | 18892 | 71 | 1328 | 8.4 | 14.4 |
| 1381.0 | 17.1 | 34.0 | 135 | 10.4 | 1.41 | 2.40 | 19366 | 207 | 1269 | 8.4 | 14.4 |
| 1382.0 | 30.0 | 34.0 | 135 | 10.4 | 1.25 | 2.44 | 19636 | 118 | 1212 | 8.4 | 14.4 |
| 1383.0 | 50.0 | 34.0 | 135 | 10.4 | 1.10 | 2.46 | 19798 | 71 | 1158 | 8.4 | 14.4 |
| 1384.0 | 25.0 | 38.0 | 135 | 10.4 | 1.34 | 2.50 | 20122 | 142 | 1111 | 8.4 | 14.4 |
| 1385.0 | 38.0 | 14.0 | 135 | 10.4 | 0.94 | 2.52 | 20335 | 93 | 1067 | 8.4 | 14.4 |
| 1386.0 | 38.0 | 14.0 | 135 | 10.4 | 0.94 | 2.55 | 20548 | 93 | 1027 | 8.4 | 14.4 |
| 1387.0 | 5.9 | 25.0 | 135 | 10.4 | 1.56 | 2.72 | 21921 | 600 | 1009 | 8.4 | 14.4 |
| 1388.0 | 4.3 | 28.0 | 135 | 10.4 | 1.70 | 2.95 | 23805 | 824 | 1002 | 8.4 | 14.4 |
| 1389.0 | 5.0 | 28.0 | 135 | 10.4 | 1.66 | 3.15 | 25425 | 708.40 | 991.43 | 8.4 | 14.4 |
| 1390.0 | 15.6 | 28.0 | 135 | 10.4 | 1.35 | 3.22 | 25944 | 227.05 | 964.13 | 8.4 | 14.4 |
| 1391.0 | 6.9 | 28.0 | 135 | 10.4 | 1.57 | 3.36 | 27118 | 513.33 | 948.59 | 8.4 | 14.4 |
| 1392.0 | 3.8 | 28.0 | 135 | 10.4 | 1.73 | 3.62 | 29249 | 932.11 | 948.04 | 8.4 | 14.4 |
| 1393.0 | 7.3 | 28.0 | 135 | 10.4 | 1.56 | 3.76 | 30359 | 485.21 | 933.11 | 8.4 | 14.4 |
| 1394.0 | 4.5 | 28.0 | 135 | 10.4 | 1.62 | 3.98 | 32159 | 787.11 | 928.55 | 8.4 | 14.4 |
| 1395.0 | 14.6 | 32.0 | 135 | 10.4 | 1.42 | 4.05 | 32714 | 242.60 | 907.76 | 8.4 | 14.4 |
| 1396.0 | 10.3 | 32.0 | 135 | 10.4 | 1.52 | 4.15 | 33500 | 343.86 | 891.17 | 8.4 | 14.4 |
| 1397.0 | 8.9 | 32.0 | 132 | 10.4 | 1.56 | 4.26 | 34390 | 397.98 | 877.08 | 8.4 | 14.4 |
| 1398.0 | 11.1 | 32.0 | 132 | 10.4 | 1.49 | 4.35 | 35104 | 319.10 | 861.58 | 8.4 | 14.4 |
| 1399.0 | 13.2 | 32.0 | 132 | 10.4 | 1.45 | 4.43 | 35704 | 268.33 | 845.55 | 8.4 | 14.4 |
| 1400.0 | 13.2 | 32.0 | 132 | 10.4 | 1.45 | 4.50 | 36304 | 268.33 | 830.36 | 8.4 | 14.4 |
| 1401.0 | 13.0 | 35.0 | 132 | 10.4 | 1.49 | 4.58 | 36913 | 272.46 | 816.06 | 8.4 | 14.4 |
| 1402.0 | 5.4 | 35.0 | 132 | 10.4 | 1.74 | 4.76 | 38379 | 655.73 | 812.05 | 8.4 | 14.4 |
| 1403.0 | 3.0 | 35.0 | 132 | 10.4 | 1.91 | 5.10 | 41019 | 1181 | 821 | 8.4 | 14.4 |
| 1405.0 | 3.7 | 35.0 | 132 | 10.4 | 1.85 | 5.64 | 45301 | 957.30 | 827.36 | 8.4 | 14.4 |
| 1406.0 | 2.7 | 36.0 | 132 | 10.4 | 1.95 | 6.01 | 48234 | 1312 | 838 | 8.4 | 14.4 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | TCOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1407.0 | 10.3 | 36.0 | 132 | 10.4 | 1.57 | 6.11 | 49003 | 343.68 | 827.40 | 8.4 | 14.4 |
| 1408.0 | 49.0 | 28.0 | 132 | 10.4 | 1.04 | 6.13 | 49164 | 72.29 | 810.99 | 8.4 | 14.4 |
| 1409.0 | 36.0 | 28.0 | 132 | 10.4 | 1.12 | 6.15 | 49384 | 98.39 | 795.82 | 8.4 | 14.4 |
| 1410.0 | 41.9 | 32.0 | 135 | 10.4 | 1.13 | 6.18 | 49578 | 84.53 | 781.01 | 8.4 | 14.4 |
| 1411.0 | 17.0 | 32.0 | 135 | 10.4 | 1.38 | 6.24 | 50054 | 208.35 | 7[illegible] | 8.4 | 14.4 |
| 1412.0 | 8.2 | 28.0 | 135 | 10.4 | 1.53 | 6.36 | 51046 | 433.54 | 7[illegible] | 8.4 | 14.4 |
| 1413.0 | 8.2 | 30.0 | 145 | 10.4 | 1.58 | 6.48 | 52107 | 431.95 | 7[illegible] | 8.4 | 14.4 |
| 1414.0 | 3.2 | 32.0 | 140 | 10.4 | 1.86 | 6.79 | 54732 | 1107 | 7[illegible] | 8.4 | 14.4 |
| 1415.0 | 4.6 | 30.0 | 140 | 10.4 | 1.72 | 7.01 | 56558 | 779.00 | 767.00 | 8.4 | 14.4 |
| 1416.0 | 3.3 | 30.0 | 140 | 10.4 | 1.81 | 7.31 | 59105 | 1073 | 769 | 8.4 | 14.4 |
| 1417.0 | 42.0 | 30.0 | 140 | 10.4 | 1.12 | 7.34 | 59303 | 84.33 | 756.30 | 8.4 | 14.4 |
| 1418.0 | 44.0 | 30.0 | 140 | 10.4 | 1.11 | 7.36 | 59494 | 80.50 | 744.24 | 8.4 | 14.4 |
| 1419.0 | 54.0 | 30.0 | 140 | 10.4 | 1.05 | 7.38 | 59650 | 65.59 | 732.33 | 8.4 | 14.4 |
| 1420.0 | 12.0 | 32.0 | 140 | 10.4 | 1.49 | 7.46 | 60350 | 295.17 | 724.79 | 8.4 | 14.4 |
| 1421.0 | 50.0 | 32.0 | 140 | 10.4 | 1.09 | 7.48 | 60518 | 70.84 | 713.71 | 8.4 | 14.4 |
| 1422.0 | 24.0 | 30.0 | 140 | 10.4 | 1.27 | 7.52 | 60868 | 147.58 | 704.27 | 8.4 | 14.4 |
| 1423.0 | 19.0 | 30.0 | 140 | 10.4 | 1.34 | 7.58 | 61310 | 186.42 | 695.78 | 8.4 | 14.4 |
| 1424.0 | 28.4 | 30.0 | 140 | 10.4 | 1.23 | 7.61 | 61606 | 124.72 | 686.57 | 8.4 | 14.4 |
| 1425.0 | 40.2 | 30.0 | 140 | 10.4 | 1.13 | 7.64 | 61814 | 88.11 | 677.87 | 8.4 | 14.4 |
| 1426.0 | 35.0 | 30.0 | 140 | 10.4 | 1.17 | 7.66 | 62054 | 101.20 | 668.87 | 8.4 | 14.4 |
| 1427.0 | 38.0 | 30.0 | 140 | 10.4 | 1.15 | 7.69 | 62276 | 93.21 | 659.73 | 8.4 | 14.4 |
| 1428.0 | 48.0 | 30.0 | 140 | 10.4 | 1.08 | 7.71 | 62451 | 73.79 | 650.36 | 8.4 | 14.4 |
| 1429.0 | 51.0 | 30.0 | 140 | 10.4 | 1.07 | 7.73 | 62615 | 69.45 | 641.69 | 8.4 | 14.4 |
| 1430.0 | 34.0 | 30.0 | 140 | 10.4 | 1.18 | 7.76 | 62862 | 104.18 | 633.79 | 8.4 | 14.4 |
| 1431.0 | 8.9 | 30.0 | 140 | 10.4 | 1.54 | 7.87 | 63806 | 397.98 | 630.37 | 8.4 | 14.4 |
| 1432.0 | 8.9 | 30.0 | 140 | 10.4 | 1.54 | 7.99 | 64750 | 397.98 | 627.05 | 8.4 | 14.5 |
| 1433.0 | 4.4 | 30.0 | 140 | 10.4 | 1.74 | 8.21 | 66659 | 805.00 | 629.58 | 8.4 | 14.5 |
| 1434.0 | 5.4 | 28.0 | 140 | 10.4 | 1.65 | 8.40 | 68215 | 655.93 | 629.92 | 8.4 | 14.5 |
| 1435.0 | 14.2 | 28.0 | 140 | 10.4 | 1.39 | 8.47 | 68806 | 249.44 | 624.71 | 8.4 | 14.5 |
| 1436.0 | 63.0 | 28.0 | 140 | 10.4 | 0.99 | 8.48 | 68939 | 56.22 | 617.03 | 8.4 | 14.5 |
| 1437.0 | 89.0 | 28.0 | 140 | 10.4 | 0.90 | 8.50 | 69034 | 39.80 | 609.33 | 8.4 | 14.5 |
| 1438.0 | 82.0 | 28.0 | 140 | 10.4 | 0.92 | 8.51 | 69136 | 43.20 | 601.88 | 8.4 | 14.5 |
| 1439.0 | 69.0 | 24.0 | 130 | 10.4 | 0.91 | 8.52 | 69249 | 51.33 | 594.73 | 8.4 | 14.5 |
| 1440.0 | 141.0 | 24.0 | 130 | 10.4 | 0.72 | 8.53 | 69305 | 25.12 | 587.43 | 8.4 | 14.5 |
| 1441.0 | 33.0 | 24.0 | 130 | 10.4 | 1.10 | 8.56 | 69541 | 107.33 | 581.35 | 8.4 | 14.5 |
| 1442.0 | 56.0 | 24.0 | 130 | 10.4 | 0.96 | 8.58 | 69680 | 63.25 | 574.37 | 8.4 | 14.5 |
| 1443.0 | 48.0 | 24.0 | 135 | 10.4 | 1.01 | 8.60 | 69849 | 73.79 | 568.69 | 8.4 | 14.5 |
| 1444.0 | 40.0 | 25.0 | 135 | 10.4 | 1.07 | 8.62 | 70052 | 88.55 | 562.83 | 8.4 | 14.5 |
| 1445.0 | 40.0 | 25.0 | 135 | 10.4 | 1.07 | 8.65 | 70254 | 88.55 | 557.12 | 8.4 | 14.5 |
| 1446.0 | 43.5 | 25.0 | 135 | 10.4 | 1.05 | 8.67 | 70440 | 81.43 | 551.46 | 8.4 | 14.5 |
| 1447.0 | 30.0 | 25.0 | 135 | 10.4 | 1.14 | 8.70 | 70710 | 118.07 | 546.36 | 8.4 | 14.5 |
| 1448.0 | 30.0 | 26.0 | 135 | 10.4 | 1.16 | 8.74 | 70980 | 118.07 | 541.38 | 8.4 | 14.5 |
| 1449.0 | 14.7 | 27.0 | 135 | 10.4 | 1.36 | 8.81 | 71531 | 240.95 | 537.92 | 8.4 | 14.5 |
| 1450.0 | 2.9 | 36.0 | 135 | 10.4 | 1.94 | 9.15 | 74324 | 1221 | 546 | 8.4 | 14.5 |
| 1451.0 | 6.9 | 36.0 | 130 | 10.4 | 1.68 | 9.30 | 75455 | 513.33 | 545.33 | 8.4 | 14.5 |
| 1452.0 | 58.6 | 36.0 | 130 | 10.4 | 1.06 | 9.31 | 75588 | 60.44 | 539.94 | 8.4 | 14.5 |
| 1453.0 | 30.0 | 36.0 | 130 | 10.4 | 1.26 | 9.35 | 75848 | 118.07 | 535.30 | 8.4 | 14.5 |
| 1454.0 | 29.1 | 36.0 | 130 | 10.4 | 1.27 | 9.38 | 76116 | 121.72 | 530.81 | 8.4 | 14.5 |
| 1455.0 | 48.0 | 36.0 | 130 | 10.4 | 1.12 | 9.40 | 76278 | 73.79 | 525.89 | 8.4 | 14.5 |
| 1456.0 | 58.6 | 30.0 | 130 | 10.4 | 1.01 | 9.42 | 76412 | 60.44 | 520.94 | 8.4 | 14.5 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | TCOST | ECD | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1457.0 | 37.6 | 30.0 | 130 | 10.4 | 1.13 | 9.45 | 76619 | 94.70 | 516.40 | 8.4 | 14.5 |
| 1458.0 | 34.0 | 32.0 | 130 | 10.4 | 1.18 | 9.47 | 76840 | 104.18 | 512.[illegible] | 8.4 | 14.5 |
| 1459.0 | 14.5 | 32.0 | 130 | 10.4 | 1.42 | 9.54 | 77386 | 244.28 | 507.[illegible] | 8.4 | 14.5 |
| 1460.0 | 42.7 | 32.0 | 130 | 10.4 | 1.12 | 9.57 | 77569 | 82.95 | 505.04 | 8.4 | 14.5 |
| 1461.0 | 27.7 | 32.0 | 130 | 10.4 | 1.24 | 9.60 | 77851 | 127.87 | 501.23 | 8.4 | 14.5 |
| 1462.0 | 29.5 | 32.0 | 130 | 10.4 | 1.22 | 9.64 | 78115 | 120.07 | 497.47 | 8.4 | 14.5 |
| 1463.0 | 32.6 | 32.0 | 130 | 10.4 | 1.17 | 9.67 | 78354 | 108.65 | 493.57 | 8.4 | 14.5 |
| 1464.0 | 20.9 | 32.0 | 130 | 10.4 | 1.31 | 9.72 | 78728 | 169.47 | 490.39 | 8.4 | 14.5 |
| 1465.0 | 47.0 | 32.0 | 130 | 10.4 | 1.08 | 9.74 | 78887 | 72.29 | 486.34 | 8.4 | 14.5 |
| 1466.0 | 28.0 | 32.0 | 130 | 10.4 | 1.23 | 9.77 | 79165 | 126.50 | 482.68 | 8.4 | 14.5 |
| 1467.0 | 22.0 | 32.0 | 130 | 10.4 | 1.30 | 9.82 | 79520 | 161.00 | 479.81 | 8.4 | 14.5 |
| 1468.0 | 24.0 | 32.0 | 130 | 10.4 | 1.28 | 9.86 | 79845 | 147.58 | 476.68 | 8.4 | 14.5 |
| 1469.0 | 2.6 | 33.0 | 130 | 10.4 | 1.91 | 10.24 | 82845 | 1362 | 485 | 8.4 | 14.5 |
| 1470.0 | 2.6 | 34.0 | 130 | 10.4 | 1.93 | 10.63 | 85845 | 1362 | 493 | 8.4 | 14.5 |
| 1471.0 | 21.0 | 34.0 | 130 | 10.4 | 1.34 | 10.68 | 86216 | 168.[illegible] | 490.10 | 8.4 | 14.5 |
| 1472.0 | 56.0 | 29.0 | 130 | 10.4 | 1.01 | 10.69 | 86354 | 63.25 | 486.22 | 8.4 | 14.5 |
| 1473.0 | 27.0 | 29.0 | 130 | 10.4 | 1.21 | 10.73 | 86644 | 131.1[illegible] | 483.02 | 8.4 | 14.5 |
| 1474.0 | 32.0 | 29.0 | 130 | 10.4 | 1.16 | 10.76 | 86888 | 110.[illegible] | 479.70 | 8.4 | 14.5 |
| 1475.0 | 33.0 | 28.0 | 130 | 10.4 | 1.14 | 10.79 | 87125 | 107.33 | 476.40 | 8.4 | 14.5 |
| 1476.0 | 49.0 | 28.0 | 130 | 10.4 | 1.04 | 10.81 | 87284 | 72.29 | 472.84 | 8.4 | 14.5 |
| 1477.0 | 38.0 | 28.0 | 130 | 10.4 | 1.11 | 10.84 | 87489 | 93.21 | 469.56 | 8.4 | 14.5 |
| 1478.0 | 2.6 | 34.0 | 130 | 10.4 | 1.93 | 11.22 | 90489 | 1362 | 477 | 8.4 | 14.5 |
| 1479.0 | 3.4 | 34.0 | 130 | 10.4 | 1.85 | 11.52 | 92763 | 1042 | 482 | 8.4 | 14.5 |
| 1480.0 | 5.6 | 33.0 | 130 | 10.4 | 1.70 | 11.70 | 94176 | 632.50 | 483.35 | 8.4 | 14.5 |
| 1481.0 | 2.2 | 34.0 | 130 | 10.4 | 1.97 | 12.15 | 97721 | 1610 | 493 | 8.4 | 14.5 |
| 1482.0 | 20.3 | 34.0 | 130 | 10.4 | 1.35 | 12.20 | 98106 | 174.48 | 490.17 | 8.4 | 14.5 |
| 1483.0 | 22.0 | 8.0 | 130 | 10.4 | 0.93 | 12.25 | 98460 | 161.06 | 487.45 | 8.4 | 14.5 |
| 1484.0 | 36.0 | 12.0 | 130 | 10.4 | 0.91 | 12.27 | 98677 | 98.39 | 484.26 | 8.4 | 14.5 |
| 1485.0 | 4.4 | 32.0 | 130 | 10.4 | 1.75 | 12.50 | 100438 | 799.55 | 486.02 | 8.4 | 14.5 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 5 | IADC CODE | 217 | INTERVAL | 1485.0- 1605.6 |
| HTC JD4 | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1740.00 | TRIP TIME | 4.6 | BIT RUN | 120.6 |
| TOTAL HOURS | 12.88 | TOTAL TURNS | 113601 | CONDITION | T7 B8 G0.188 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1486.0 | 6.0 | 19.0 | 100 | 10.4 | 1.38 | 0.17 | 1000 | 590 | 18624 | 8.4 | 14.5 |
| 1487.0 | 4.2 | 24.0 | 100 | 10.4 | 1.56 | 0.40 | 2429 | 843 | 9733 | 8.4 | 14.5 |
| 1488.0 | 4.2 | 26.0 | 130 | 10.4 | 1.66 | 0.64 | 4286 | 843 | 6770 | 8.4 | 14.5 |
| 1489.0 | 5.9 | 28.0 | 130 | 10.4 | 1.60 | 0.81 | 5608 | 600 | 5228 | 8.4 | 14.5 |
| 1490.0 | 34.0 | 28.0 | 130 | 10.4 | 1.14 | 0.84 | 5837 | 104 | 4243 | 8.4 | 14.5 |
| 1491.0 | 52.0 | 28.0 | 130 | 10.4 | 1.02 | 0.86 | 5907 | 68 | 3814 | 8.4 | 14.5 |
| 1492.0 | 9.6 | 32.0 | 130 | 10.4 | 1.53 | 0.97 | 6800 | 369 | 3065 | 8.4 | 14.5 |
| 1493.0 | 25.0 | 32.0 | 150 | 10.4 | 1.30 | 1.01 | 7160 | 142 | 2699 | 8.4 | 14.6 |
| 1494.0 | 46.0 | 32.0 | 150 | 10.4 | 1.14 | 1.03 | 7355 | 77 | 2408 | 8.4 | 14.6 |
| 1495.0 | 52.0 | 32.0 | 150 | 10.4 | 1.10 | 1.05 | 7528 | 68 | 2174 | 8.4 | 14.6 |
| 1496.0 | 82.0 | 32.0 | 150 | 10.4 | 0.97 | 1.06 | 7638 | 43 | 1980 | 8.4 | 14.6 |
| 1497.0 | 61.0 | 30.0 | 150 | 10.4 | 1.04 | 1.07 | 7786 | 58 | 1820 | 8.4 | 14.6 |
| 1498.0 | 35.0 | 30.0 | 150 | 10.4 | 1.19 | 1.10 | 8043 | 101 | 1688 | 8.4 | 14.6 |
| 1499.0 | 40.0 | 30.0 | 150 | 10.4 | 1.15 | 1.13 | 8268 | 89 | 1574 | 8.4 | 14.6 |
| 1500.0 | 20.0 | 32.0 | 150 | 10.4 | 1.37 | 1.18 | 8718 | 177 | 1480 | 8.4 | 14.6 |
| 1501.0 | 5.9 | 33.0 | 150 | 10.4 | 1.72 | 1.35 | 10243 | 600 | 1425 | 8.4 | 14.6 |
| 1502.0 | 10.5 | 33.0 | 150 | 10.4 | 1.56 | 1.44 | 11100 | 337 | 1361 | 8.4 | 14.6 |
| 1503.0 | 11.5 | 39.0 | 150 | 10.4 | 1.61 | 1.53 | 11883 | 308 | 1303 | 8.4 | 14.6 |
| 1504.0 | 16.0 | 36.0 | 150 | 10.4 | 1.48 | 1.59 | 12446 | 221 | 1246 | 8.4 | 14.6 |
| 1505.0 | 59.0 | 35.0 | 150 | 10.4 | 1.09 | 1.61 | 12598 | 60 | 1187 | 8.4 | 14.6 |
| 1506.0 | 7.3 | 36.0 | 150 | 10.4 | 1.70 | 1.75 | 13831 | 485 | 1153 | 8.4 | 14.6 |
| 1507.0 | 17.0 | 39.0 | 150 | 10.4 | 1.50 | 1.81 | 14360 | 208 | 1110 | 8.4 | 14.6 |
| 1508.0 | 6.2 | 36.0 | 150 | 10.4 | 1.75 | 1.97 | 15812 | 571 | 1087 | 8.4 | 14.6 |
| 1509.0 | 6.0 | 38.0 | 150 | 10.4 | 1.79 | 2.13 | 17312 | 590 | 1066 | 8.4 | 14.6 |
| 1510.0 | 5.9 | 40.0 | 150 | 10.4 | 1.82 | 2.30 | 18837 | 600 | 1048 | 8.4 | 14.6 |
| 1511.0 | 16.0 | 41.0 | 150 | 10.4 | 1.54 | 2.37 | 19400 | 221 | 1016 | 8.4 | 14.6 |
| 1512.0 | 8.8 | 41.0 | 150 | 10.4 | 1.72 | 2.48 | 20423 | 402.50 | 993.08 | 8.4 | 14.6 |
| 1513.0 | 44.0 | 38.0 | 150 | 10.4 | 1.21 | 2.50 | 20627 | 80.50 | 960.49 | 8.4 | 14.6 |
| 1514.0 | 20.0 | 39.0 | 150 | 10.4 | 1.45 | 2.55 | 21077 | 177.10 | 933.47 | 8.4 | 14.6 |
| 1515.0 | 29.5 | 34.0 | 150 | 10.4 | 1.28 | 2.59 | 21382 | 120.07 | 906.36 | 8.4 | 14.6 |
| 1516.0 | 8.5 | 35.0 | 150 | 10.4 | 1.65 | 2.70 | 22441 | 416.71 | 890.57 | 8.4 | 14.6 |
| 1517.0 | 8.9 | 35.0 | 150 | 10.4 | 1.63 | 2.82 | 23452 | 397.98 | 875.17 | 8.4 | 14.6 |
| 1518.0 | 5.6 | 36.0 | 150 | 10.4 | 1.78 | 2.99 | 25059 | 632.50 | 867.82 | 8.4 | 14.6 |
| 1519.0 | 4.6 | 40.0 | 150 | 10.4 | 1.90 | 3.21 | 27012 | 768.33 | 864.89 | 8.4 | 14.6 |
| 1520.0 | 8.5 | 39.0 | 150 | 10.4 | 1.70 | 3.33 | 28071 | 416.71 | 852.09 | 8.4 | 14.6 |
| 1521.0 | 5.9 | 41.0 | 150 | 10.4 | 1.84 | 3.50 | 29596 | 600.34 | 845.09 | 8.4 | 14.6 |
| 1522.0 | 7.8 | 40.0 | 148 | 10.4 | 1.74 | 3.63 | 30734 | 454.10 | 834.53 | 8.4 | 14.6 |
| 1523.0 | 7.3 | 41.0 | 148 | 10.4 | 1.77 | 3.76 | 31951 | 485.21 | 825.33 | 8.4 | 14.6 |
| 1524.0 | 25.4 | 41.0 | 148 | 10.4 | 1.40 | 3.80 | 32300 | 139.45 | 807.75 | 8.4 | 14.6 |
| 1525.0 | 14.9 | 41.0 | 148 | 10.4 | 1.56 | 3.87 | 32896 | 237.72 | 793.50 | 8.4 | 14.6 |
| 1526.0 | 24.0 | 41.0 | 148 | 10.4 | 1.41 | 3.91 | 33266 | 147.58 | 777.74 | 8.4 | 14.6 |
| 1527.0 | 36.0 | 41.0 | 148 | 10.4 | 1.29 | 3.94 | 33513 | 98.39 | 761.57 | 8.4 | 14.6 |
| 1528.0 | 64.0 | 41.0 | 148 | 10.4 | 1.12 | 3.95 | 33652 | 55.34 | 745.14 | 8.4 | 14.6 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1529.0 | 10.0 | 41.0 | 148 | 10.4 | 1.68 | 4.05 | 34540 | 354.20 | 736.26 | 8.4 | 14.6 |
| 1530.0 | 5.6 | 42.0 | 148 | 10.4 | 1.86 | 4.23 | 36126 | 632.50 | 733.95 | 8.4 | 14.6 |
| 1531.0 | 8.5 | 42.0 | 148 | 10.4 | 1.74 | 4.35 | 37170 | 416.71 | 727.06 | 8.4 | 14.6 |
| 1532.0 | 7.7 | 39.0 | 148 | 10.4 | 1.73 | 4.48 | 38324 | 460.00 | 721.37 | 8.4 | 14.6 |
| 1533.0 | 38.5 | 38.0 | 148 | 10.4 | 1.24 | 4.51 | 38554 | 92.00 | 708.26 | 8.4 | 14.6 |
| 1534.0 | 59.0 | 38.0 | 148 | 10.4 | 1.12 | 4.52 | 38705 | 60.03 | 695.03 | 8.4 | 14.6 |
| 1535.0 | 59.0 | 41.0 | 148 | 10.4 | 1.14 | 4.54 | 38855 | 60.03 | 682.33 | 8.4 | 14.6 |
| 1536.0 | 67.0 | 42.0 | 148 | 10.4 | 1.11 | 4.56 | 38988 | 52.87 | 669.99 | 8.4 | 14.6 |
| 1537.0 | 62.0 | 42.0 | 148 | 10.4 | 1.14 | 4.57 | 39131 | 57.13 | 658.20 | 8.4 | 14.6 |
| 1538.0 | 56.0 | 40.0 | 148 | 10.4 | 1.15 | 4.59 | 39290 | 63.25 | 646.98 | 8.4 | 14.6 |
| 1539.0 | 47.0 | 40.0 | 148 | 10.4 | 1.20 | 4.61 | 39478 | 75.36 | 636.39 | 8.4 | 14.6 |
| 1540.0 | 44.0 | 40.0 | 148 | 10.4 | 1.22 | 4.63 | 39680 | 80.50 | 626.29 | 8.4 | 14.6 |
| 1541.0 | 41.0 | 40.0 | 148 | 10.4 | 1.24 | 4.66 | 39897 | 86.39 | 616.65 | 8.4 | 14.6 |
| 1542.0 | 12.0 | 41.0 | 148 | 10.4 | 1.62 | 4.74 | 40637 | 295.17 | 611.01 | 8.4 | 14.6 |
| 1543.0 | 5.0 | 40.0 | 148 | 10.3 | 1.89 | 4.94 | 42413 | 708.40 | 612.68 | 8.4 | 14.6 |
| 1544.0 | 5.4 | 39.0 | 148 | 10.3 | 1.85 | 5.13 | 44057 | 655.93 | 613.42 | 8.4 | 14.6 |
| 1545.0 | 5.6 | 41.0 | 148 | 10.3 | 1.87 | 5.31 | 45643 | 632.50 | 613.74 | 8.4 | 14.6 |
| 1546.0 | 5.9 | 39.0 | 148 | 10.3 | 1.82 | 5.47 | 47148 | 600.34 | 613.52 | 8.4 | 14.6 |
| 1547.0 | 14.0 | 38.0 | 148 | 10.3 | 1.55 | 5.55 | 47782 | 253.00 | 607.70 | 8.4 | 14.6 |
| 1548.0 | 6.9 | 40.0 | 148 | 10.3 | 1.79 | 5.69 | 49069 | 513.33 | 606.20 | 8.4 | 14.6 |
| 1549.0 | 5.1 | 41.0 | 148 | 10.2 | 1.91 | 5.89 | 50811 | 694.51 | 607.58 | 8.4 | 14.6 |
| 1550.0 | 5.6 | 40.0 | 148 | 10.2 | 1.87 | 6.07 | 52396 | 632.50 | 607.97 | 8.4 | 14.6 |
| 1551.0 | 7.3 | 40.0 | 148 | 10.2 | 1.79 | 6.20 | 53613 | 485.21 | 606.11 | 8.4 | 14.6 |
| 1552.0 | 11.9 | 43.0 | 148 | 10.2 | 1.68 | 6.29 | 54359 | 297.65 | 601.58 | 8.4 | 14.6 |
| 1553.0 | 9.1 | 43.0 | 148 | 10.2 | 1.76 | 6.40 | 55335 | 389.23 | 598.30 | 8.4 | 14.6 |
| 1554.0 | 4.9 | 50.0 | 150 | 10.2 | 2.06 | 6.60 | 57171 | 722.86 | 600.19 | 8.4 | 14.6 |
| 1555.0 | 4.8 | 50.0 | 150 | 10.2 | 2.06 | 6.81 | 59046 | 737.92 | 602.15 | 8.4 | 14.7 |
| 1556.0 | 5.1 | 50.0 | 150 | 10.2 | 2.04 | 7.01 | 60811 | 694.51 | 603.45 | 8.4 | 14.7 |
| 1557.0 | 7.3 | 42.0 | 150 | 10.2 | 1.82 | 7.14 | 62044 | 485.21 | 601.81 | 8.4 | 14.7 |
| 1558.0 | 91.0 | 42.0 | 150 | 10.2 | 1.05 | 7.15 | 62143 | 38.92 | 594.10 | 8.4 | 14.7 |
| 1559.0 | 42.0 | 48.0 | 150 | 10.2 | 1.34 | 7.18 | 62357 | 84.33 | 587.81 | 8.4 | 14.7 |
| 1560.0 | 8.2 | 48.0 | 150 | 10.2 | 1.86 | 7.30 | 63455 | 431.95 | 585.14 | 8.4 | 14.7 |
| 1561.0 | 8.2 | 48.0 | 150 | 10.2 | 1.86 | 7.42 | 64552 | 431.95 | 583.13 | 8.4 | 14.7 |
| 1562.0 | 11.2 | 48.0 | 150 | 10.2 | 1.76 | 7.51 | 65356 | 316.25 | 579.66 | 8.4 | 14.7 |
| 1563.0 | 56.0 | 47.0 | 150 | 10.2 | 1.24 | 7.53 | 65517 | 63.25 | 573.94 | 8.4 | 14.7 |
| 1564.0 | 41.0 | 50.0 | 150 | 10.2 | 1.37 | 7.55 | 65736 | 86.39 | 566.86 | 8.4 | 14.7 |
| 1565.0 | 8.0 | 49.0 | 150 | 10.2 | 1.88 | 7.68 | 66861 | 442.75 | 565.33 | 8.4 | 14.7 |
| 1566.0 | 20.0 | 49.0 | 150 | 10.2 | 1.59 | 7.73 | 67311 | 177.10 | 560.53 | 8.4 | 14.7 |
| 1567.0 | 62.0 | 47.0 | 150 | 10.2 | 1.21 | 7.74 | 67456 | 57.13 | 554.40 | 8.4 | 14.7 |
| 1568.0 | 34.0 | 49.0 | 150 | 10.2 | 1.42 | 7.77 | 67721 | 104.18 | 548.97 | 8.4 | 14.7 |
| 1569.0 | 71.0 | 47.0 | 150 | 10.2 | 1.16 | 7.79 | 67848 | 49.89 | 543.03 | 8.4 | 14.7 |
| 1570.0 | 72.0 | 47.0 | 150 | 10.2 | 1.16 | 7.80 | 67973 | 49.19 | 537.22 | 8.4 | 14.7 |
| 1571.0 | 8.2 | 41.0 | 150 | 10.2 | 1.77 | 7.92 | 69070 | 431.95 | 536.00 | 8.4 | 14.7 |
| 1572.0 | 5.2 | 42.0 | 150 | 10.2 | 1.93 | 8.12 | 70801 | 681.15 | 537.66 | 8.4 | 14.7 |
| 1573.0 | 4.7 | 43.0 | 150 | 10.2 | 1.97 | 8.33 | 72716 | 753.62 | 540.12 | 8.4 | 14.7 |
| 1574.0 | 7.8 | 42.0 | 150 | 10.2 | 1.80 | 8.46 | 73870 | 454.10 | 539.15 | 8.4 | 14.7 |
| 1575.0 | 9.1 | 42.0 | 150 | 10.3 | 1.74 | 8.57 | 74858 | 388.80 | 537.48 | 8.4 | 14.7 |
| 1576.0 | 2.9 | 43.0 | 150 | 10.3 | 2.10 | 8.91 | 77961 | 1221 | 545 | 8.4 | 14.7 |
| 1577.0 | 4.4 | 36.0 | 150 | 10.3 | 1.87 | 9.14 | 80030 | 814.25 | 547.92 | 8.4 | 14.7 |
| 1578.0 | 20.0 | 34.0 | 150 | 10.3 | 1.40 | 9.19 | 80480 | 177.10 | 543.94 | 8.4 | 14.7 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1579.0 | 45.0 | 30.0 | 150 | 10.3 | 1.13 | 9.21 | 80680 | 78.71 | 538.99 | 8.4 | 14.7 |
| 1580.0 | 47.0 | 35.0 | 150 | 10.2 | 1.18 | 9.23 | 80872 | 75.36 | 534.11 | 8.4 | 14.7 |
| 1581.0 | 76.5 | 35.0 | 150 | 10.2 | 1.04 | 9.25 | 80989 | 46.30 | 529.03 | 8.4 | 14.7 |
| 1582.0 | 78.0 | 34.0 | 150 | 10.2 | 1.02 | 9.26 | 81105 | 45.41 | 524.04 | 8.4 | 14.7 |
| 1583.0 | 5.0 | 36.0 | 150 | 10.2 | 1.84 | 9.46 | 82905 | 708.40 | 525.92 | 8.4 | 14.7 |
| 1584.0 | 5.3 | 36.0 | 150 | 10.2 | 1.82 | 9.65 | 84603 | 668.30 | 527.36 | 8.4 | 14.7 |
| 1585.0 | 49.0 | 34.0 | 150 | 10.2 | 1.16 | 9.67 | 84786 | 72.29 | 522.81 | 8.4 | 14.7 |
| 1586.0 | 34.0 | 20.0 | 150 | 10.2 | 1.09 | 9.70 | 85051 | 104.18 | 518.66 | 8.4 | 14.7 |
| 1587.0 | 16.9 | 26.0 | 150 | 10.2 | 1.35 | 9.76 | 85584 | 209.59 | 515.63 | 8.4 | 14.7 |
| 1588.0 | 6.2 | 36.0 | 148 | 10.2 | 1.79 | 9.92 | 87016 | 571.29 | 516.17 | 8.4 | 14.7 |
| 1589.0 | 3.3 | 44.0 | 148 | 10.2 | 2.10 | 10.22 | 89707 | 1073 | 522 | 8.4 | 14.7 |
| 1590.0 | 4.0 | 41.0 | 148 | 10.2 | 2.00 | 10.47 | 91927 | 885.50 | 525.00 | 8.4 | 14.7 |
| 1591.0 | 3.0 | 38.0 | 149 | 10.2 | 2.04 | 10.81 | 94952 | 1201 | 531 | 8.4 | 14.7 |
| 1592.0 | 5.4 | 26.0 | 149 | 10.2 | 1.67 | 11.00 | 96613 | 655.93 | 532.54 | 8.4 | 14.7 |
| 1593.0 | 29.0 | 29.0 | 149 | 10.2 | 1.26 | 11.03 | 96921 | 122.14 | 528.71 | 8.4 | 14.7 |
| 1594.0 | 32.0 | 29.0 | 149 | 10.2 | 1.23 | 11.06 | 97201 | 110.69 | 524.90 | 8.4 | 14.7 |
| 1595.0 | 32.0 | 26.0 | 149 | 10.2 | 1.19 | 11.09 | 97480 | 110.69 | 521.13 | 8.4 | 14.7 |
| 1596.0 | 36.0 | 28.0 | 150 | 10.2 | 1.19 | 11.12 | 97730 | 98.39 | 517.33 | 8.4 | 14.7 |
| 1597.0 | 30.0 | 20.0 | 150 | 10.2 | 1.13 | 11.15 | 98030 | 118.07 | 513.76 | 8.4 | 14.7 |
| 1598.0 | 15.4 | 28.0 | 150 | 10.2 | 1.42 | 11.22 | 98614 | 230.00 | 511.25 | 8.4 | 14.7 |
| 1599.0 | 5.9 | 34.0 | 150 | 10.2 | 1.78 | 11.39 | 100140 | 600.34 | 512.03 | 8.4 | 14.7 |
| 1600.0 | 43.0 | 32.0 | 150 | 10.2 | 1.18 | 11.41 | 100349 | 82.37 | 508.30 | 8.4 | 14.7 |
| 1601.0 | 32.0 | 32.0 | 150 | 10.2 | 1.27 | 11.44 | 100630 | 110.69 | 504.87 | 8.4 | 14.7 |
| 1602.0 | 20.0 | 30.0 | 150 | 10.2 | 1.37 | 11.49 | 101080 | 177.10 | 502.07 | 8.4 | 14.7 |
| 1603.0 | 27.0 | 32.0 | 150 | 10.2 | 1.31 | 11.53 | 101414 | 131.19 | 498.92 | 8.4 | 14.7 |
| 1604.0 | 1.9 | 32.0 | 150 | 10.2 | 2.07 | 12.07 | 106252 | 1904 | 511 | 8.4 | 14.7 |
| 1605.0 | 2.0 | 32.0 | 150 | 10.2 | 2.05 | 12.57 | 110752 | 1771 | 521 | 8.4 | 14.7 |
| 1605.6 | 2.0 | 32.0 | 150 | 10.2 | 2.05 | 12.87 | 113452 | 1771 | 527 | 8.4 | 14.7 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BIT NUMBER | 6 | IADC CODE | 517 | INTERVAL | 1605.6- 1723.0 | | | | | | |
| HTC J22 | | SIZE | 12.250 | NOZZLES | 13 13 13 | | | | | | |
| COST | 5240.00 | TRIP TIME | 4.6 | BIT RUN | 117.4 | | | | | | |
| TOTAL HOURS | 6.95 | TOTAL TURNS | 48561 | CONDITION | T2 B2 G0.000 | | | | | | |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1606.0 | 2.1 | 25.0 | 120 | 10.2 | 1.84 | 0.19 | 1371 | 1687 | 55520 | 8.4 | 14.7 |
| 1607.0 | 4.3 | 30.0 | 120 | 10.2 | 1.73 | 0.42 | 3046 | 824 | 16451 | 8.4 | 14.7 |
| 1608.0 | 3.6 | 30.0 | 120 | 10.1 | 1.80 | 0.70 | 5046 | 984 | 10006 | 8.4 | 14.7 |
| 1609.0 | 7.8 | 31.0 | 120 | 10.1 | 1.60 | 0.83 | 5969 | 454 | 7197 | 8.4 | 14.7 |
| 1610.0 | 5.6 | 32.0 | 114 | 10.1 | 1.69 | 1.01 | 7190 | 633 | 5705 | 8.4 | 14.7 |
| 1611.0 | 6.3 | 32.0 | 114 | 10.1 | 1.65 | 1.17 | 8276 | 562 | 4753 | 8.4 | 14.7 |
| 1612.0 | 7.7 | 34.0 | 114 | 10.1 | 1.62 | 1.30 | 9164 | 460 | 4082 | 8.4 | 14.7 |
| 1613.0 | 7.7 | 34.0 | 114 | 10.1 | 1.62 | 1.43 | 10053 | 460 | 3592 | 8.4 | 14.7 |
| 1614.0 | 7.7 | 32.0 | 114 | 10.1 | 1.60 | 1.56 | 10941 | 460 | 3220 | 8.4 | 14.7 |
| 1615.0 | 69.0 | 32.0 | 114 | 10.1 | 0.97 | 1.57 | 11040 | 51 | 2883 | 8.4 | 14.7 |
| 1616.0 | 59.0 | 30.0 | 114 | 10.1 | 1.00 | 1.59 | 11156 | 60 | 2611 | 8.4 | 14.7 |
| 1617.0 | 34.0 | 29.0 | 114 | 10.1 | 1.14 | 1.62 | 11357 | 104 | 2391 | 8.4 | 14.7 |
| 1618.0 | 59.0 | 29.0 | 114 | 10.1 | 0.99 | 1.63 | 11473 | 60 | 2203 | 8.4 | 14.7 |
| 1619.0 | 62.0 | 30.0 | 114 | 10.1 | 0.98 | 1.65 | 11583 | 57 | 2043 | 8.4 | 14.7 |
| 1620.0 | 63.0 | 30.0 | 114 | 10.1 | 0.98 | 1.67 | 11692 | 56 | 1905 | 8.4 | 14.8 |
| 1621.0 | 10.6 | 30.0 | 114 | 10.1 | 1.40 | 1.76 | 12337 | 334 | 1803 | 8.4 | 14.8 |
| 1622.0 | 31.0 | 30.0 | 114 | 10.1 | 1.18 | 1.79 | 12558 | 114 | 1708 | 8.4 | 14.8 |
| 1623.0 | 63.0 | 30.0 | 114 | 10.1 | 0.98 | 1.81 | 12667 | 56 | 1606 | 8.4 | 14.8 |
| 1624.0 | 47.0 | 30.0 | 114 | 10.1 | 1.06 | 1.83 | 12812 | 75 | 1522 | 8.4 | 14.8 |
| 1625.0 | 76.0 | 29.0 | 114 | 10.1 | 0.92 | 1.84 | 12902 | 47 | 1446 | 8.4 | 14.8 |
| 1626.0 | 96.0 | 28.0 | 114 | 10.1 | 0.84 | 1.85 | 12973 | 37 | 1377 | 8.4 | 14.8 |
| 1627.0 | 24.0 | 28.0 | 114 | 10.1 | 1.22 | 1.89 | 13256 | 148 | 1320 | 8.4 | 14.8 |
| 1628.0 | 8.5 | 34.0 | 114 | 10.1 | 1.60 | 2.01 | 14063 | 417 | 1280 | 8.4 | 14.8 |
| 1629.0 | 8.2 | 34.0 | 114 | 10.1 | 1.61 | 2.13 | 14897 | 432 | 1243 | 8.4 | 14.8 |
| 1630.0 | 40.0 | 33.0 | 114 | 10.1 | 1.14 | 2.16 | 15060 | 89 | 1194 | 8.4 | 14.8 |
| 1631.0 | 33.0 | 30.0 | 114 | 10.1 | 1.16 | 2.19 | 15275 | 107 | 1150 | 8.4 | 14.8 |
| 1632.0 | 82.0 | 28.0 | 114 | 10.1 | 0.89 | 2.20 | 15359 | 43 | 1114 | 8.4 | 14.8 |
| 1633.0 | 52.0 | 28.0 | 114 | 10.1 | 1.01 | 2.22 | 15490 | 68 | 1073 | 8.4 | 14.8 |
| 1634.0 | 85.0 | 28.0 | 114 | 10.1 | 0.88 | 2.23 | 15571 | 42 | 1037 | 8.4 | 14.8 |
| 1635.0 | 89.0 | 28.0 | 114 | 10.1 | 0.86 | 2.24 | 15649 | 40 | 1003 | 8.4 | 14.8 |
| 1636.0 | 63.0 | 28.0 | 114 | 10.1 | 0.96 | 2.26 | 15756 | 56.22 | 971.64 | 8.4 | 14.8 |
| 1637.0 | 60.0 | 28.0 | 114 | 10.1 | 0.94 | 2.27 | 15857 | 52.09 | 942.35 | 8.4 | 14.8 |
| 1638.0 | 76.0 | 28.0 | 114 | 10.1 | 0.91 | 2.29 | 15947 | 46.61 | 914.71 | 8.4 | 14.8 |
| 1639.0 | 54.0 | 28.0 | 114 | 10.1 | 1.00 | 2.31 | 16074 | 65.52 | 889.29 | 8.4 | 14.8 |
| 1640.0 | 40.0 | 28.0 | 114 | 10.1 | 1.08 | 2.33 | 16245 | 88.55 | 866.01 | 8.4 | 14.8 |
| 1641.0 | 62.0 | 28.0 | 114 | 10.1 | 0.96 | 2.35 | 16355 | 57.13 | 843.16 | 8.4 | 14.8 |
| 1642.0 | 20.0 | 27.0 | 114 | 10.1 | 1.26 | 2.40 | 16697 | 177.10 | 824.86 | 8.4 | 14.8 |
| 1643.0 | 22.0 | 26.0 | 114 | 10.1 | 1.22 | 2.44 | 17008 | 161.00 | 807.11 | 8.4 | 14.8 |
| 1644.0 | 31.0 | 25.0 | 114 | 10.1 | 1.12 | 2.48 | 17228 | 114.26 | 789.07 | 8.4 | 14.8 |
| 1645.0 | 54.0 | 25.0 | 114 | 10.1 | 0.97 | 2.49 | 17355 | 65.59 | 770.70 | 8.4 | 14.8 |
| 1646.0 | 105.0 | 25.0 | 114 | 10.1 | 0.79 | 2.50 | 17420 | 33.73 | 752.46 | 8.4 | 14.8 |
| 1647.0 | 26.0 | 22.0 | 114 | 10.1 | 1.13 | 2.54 | 17683 | 136.73 | 737.53 | 8.4 | 14.8 |
| 1648.0 | 52.0 | 22.0 | 114 | 10.1 | 0.95 | 2.56 | 17815 | 68.13 | 721.79 | 8.4 | 14.8 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1649.0 | 47.0 | 22.0 | 114 | 10.1 | 0.97 | 2.58 | 17960 | 75.36 | 70[illegible] | 8.4 | 14.8 |
| 1650.0 | 12.0 | 21.0 | 114 | 10.1 | 1.12 | 2.63 | 18320 | 186.42 | 695.[illegible] | 8.4 | 14.8 |
| 1651.0 | 40.0 | 21.0 | 114 | 10.1 | 1.00 | 2.66 | 18491 | 83.55 | 681.[illegible] | 8.4 | 14.8 |
| 1652.0 | 20.0 | 21.0 | 114 | 10.1 | 1.10 | 2.71 | 18833 | 172.10 | 676.[illegible] | 8.4 | 14.8 |
| 1653.0 | 4.6 | 28.0 | 118 | 10.1 | 1.69 | 2.93 | 20373 | 770.00 | 673.[illegible] | 8.4 | 14.[illegible] |
| 1654.0 | 6.6 | 32.0 | 118 | 10.1 | 1.65 | 3.08 | 21445 | 536.37 | 670.[illegible] | 8.4 | 14.8 |
| 1655.0 | 16.0 | 29.0 | 118 | 10.1 | 1.36 | 3.14 | 21888 | 222.38 | 661.17 | 8.4 | 14.[illegible] |
| 1656.0 | 56.0 | 27.0 | 118 | 10.1 | 0.99 | 3.16 | 22014 | 63.75 | 649.26 | 8.4 | 14.8 |
| 1657.0 | 56.0 | 27.0 | 118 | 10.1 | 0.99 | 3.18 | 22141 | 63.25 | 637.86 | 8.4 | 14.8 |
| 1658.0 | 26.3 | 27.0 | 118 | 10.1 | 1.20 | 3.21 | 22410 | 134.68 | 628.25 | 8.4 | 14.8 |
| 1659.0 | 18.7 | 27.0 | 118 | 10.1 | 1.29 | 3.27 | 22788 | 189.41 | 620.04 | 8.4 | 14.8 |
| 1660.0 | 20.0 | 26.0 | 118 | 10.1 | 1.26 | 3.32 | 23142 | 177.10 | 611.89 | 8.4 | 14.8 |
| 1661.0 | 62.0 | 26.0 | 118 | 10.1 | 0.95 | 3.33 | 23257 | 57.13 | 601.88 | 8.4 | 14.8 |
| 1662.0 | 52.0 | 26.0 | 118 | 10.1 | 1.00 | 3.35 | 23393 | 68.12 | 592.42 | 8.4 | 14.8 |
| 1663.0 | 29.0 | 26.0 | 118 | 10.1 | 1.16 | 3.39 | 23637 | 122.14 | 584.22 | 8.4 | 14.8 |
| 1664.0 | 44.0 | 28.0 | 118 | 10.1 | 1.07 | 3.41 | 23798 | 80.50 | 575.69 | 8.4 | 14.8 |
| 1665.0 | 44.0 | 28.0 | 118 | 10.1 | 1.07 | 3.43 | 23959 | 80.50 | 567.76 | 8.4 | 14.8 |
| 1666.0 | 33.0 | 28.0 | 118 | 10.1 | 1.15 | 3.46 | 24173 | 107.33 | 559.65 | 8.4 | 14.8 |
| 1667.0 | 43.0 | 28.0 | 118 | 10.1 | 1.07 | 3.49 | 24338 | 82.37 | 551.87 | 8.4 | 14.8 |
| 1668.0 | 46.1 | 28.0 | 118 | 10.1 | 1.05 | 3.51 | 24492 | 76.83 | 544.26 | 8.4 | 14.8 |
| 1669.0 | 8.5 | 30.0 | 118 | 10.1 | 1.55 | 3.63 | 25324 | 416.71 | 542.25 | 8.4 | 14.8 |
| 1670.0 | 5.1 | 31.0 | 118 | 10.1 | 1.71 | 3.82 | 26713 | 694.51 | 544.61 | 8.4 | 14.8 |
| 1671.0 | 23.0 | 31.0 | 118 | 10.1 | 1.28 | 3.87 | 27021 | 154.00 | 538.64 | 8.4 | 14.8 |
| 1672.0 | 38.0 | 31.0 | 118 | 10.1 | 1.14 | 3.89 | 27207 | 93.21 | 531.93 | 8.4 | 14.8 |
| 1673.0 | 38.0 | 29.0 | 118 | 10.1 | 1.12 | 3.92 | 27393 | 93.21 | 525.42 | 8.4 | 14.8 |
| 1674.0 | 35.0 | 29.0 | 118 | 10.1 | 1.14 | 3.95 | 27595 | 101.20 | 519.22 | 8.4 | 14.8 |
| 1675.0 | 25.0 | 29.0 | 110 | 10.1 | 1.22 | 3.99 | 27859 | 141.68 | 513.78 | 8.4 | 14.8 |
| 1676.0 | 32.0 | 26.0 | 110 | 10.1 | 1.11 | 4.02 | 28066 | 110.69 | 508.06 | 8.4 | 14.8 |
| 1677.0 | 42.0 | 27.0 | 110 | 10.1 | 1.05 | 4.04 | 28223 | 84.33 | 502.12 | 8.4 | 14.8 |
| 1678.0 | 33.0 | 27.0 | 110 | 10.1 | 1.12 | 4.07 | 28423 | 107.33 | 496.67 | 8.4 | 14.8 |
| 1679.0 | 47.0 | 27.0 | 110 | 10.1 | 1.02 | 4.09 | 28563 | 75.36 | 490.93 | 8.4 | 14.8 |
| 1680.0 | 28.0 | 27.0 | 110 | 10.1 | 1.17 | 4.13 | 28799 | 126.50 | 486.03 | 8.4 | 14.8 |
| 1681.0 | 24.0 | 29.0 | 110 | 10.1 | 1.23 | 4.17 | 29074 | 147.58 | 481.54 | 8.4 | 14.8 |
| 1682.0 | 38.0 | 26.0 | 110 | 10.1 | 1.07 | 4.20 | 29248 | 93.21 | 476.46 | 8.4 | 14.8 |
| 1683.0 | 15.6 | 28.0 | 110 | 10.1 | 1.34 | 4.26 | 29671 | 227.05 | 473.24 | 8.4 | 14.8 |
| 1684.0 | 13.4 | 28.0 | 110 | 10.1 | 1.38 | 4.34 | 30163 | 264.33 | 470.57 | 8.4 | 14.8 |
| 1685.0 | 53.6 | 28.0 | 110 | 10.1 | 1.00 | 4.36 | 30286 | 66.08 | 465.48 | 8.4 | 14.8 |
| 1686.0 | 11.0 | 32.0 | 110 | 10.1 | 1.49 | 4.45 | 30886 | 322.00 | 463.69 | 8.4 | 14.8 |
| 1687.0 | 7.8 | 32.0 | 110 | 10.1 | 1.59 | 4.57 | 31733 | 454.10 | 463.58 | 8.4 | 14.9 |
| 1688.0 | 10.5 | 32.0 | 118 | 10.1 | 1.52 | 4.67 | 32407 | 337.33 | 462.04 | 8.4 | 14.9 |
| 1689.0 | 36.7 | 31.0 | 118 | 10.1 | 1.15 | 4.70 | 32600 | 96.51 | 457.66 | 8.4 | 14.9 |
| 1690.0 | 13.3 | 31.0 | 118 | 10.1 | 1.44 | 4.77 | 33132 | 266.32 | 455.39 | 8.4 | 14.9 |
| 1691.0 | 8.2 | 29.0 | 118 | 10.1 | 1.55 | 4.89 | 33996 | 431.95 | 455.12 | 8.4 | 14.9 |
| 1692.0 | 5.9 | 33.0 | 118 | 10.1 | 1.70 | 5.06 | 35196 | 600.34 | 456.80 | 8.4 | 14.9 |
| 1693.0 | 14.0 | 34.0 | 118 | 10.1 | 1.47 | 5.13 | 35701 | 253.00 | 454.47 | 8.4 | 14.9 |
| 1694.0 | 49.0 | 33.0 | 118 | 10.1 | 1.09 | 5.16 | 35846 | 72.29 | 450.14 | 8.4 | 14.9 |
| 1695.0 | 49.0 | 33.0 | 118 | 10.1 | 1.09 | 5.18 | 35990 | 72.29 | 445.92 | 8.4 | 14.9 |
| 1696.0 | 47.0 | 33.0 | 118 | 10.1 | 1.10 | 5.20 | 36141 | 75.36 | 441.[illegible] | 8.4 | 14.9 |
| 1697.0 | 59.0 | 31.0 | 118 | 10.1 | 1.02 | 5.21 | 36261 | 60.03 | 437.[illegible] | 8.4 | 14.9 |
| 1698.0 | 23.5 | 33.0 | 118 | 10.1 | 1.30 | 5.29 | 36567 | 150.77 | 434.[illegible] | 8.4 | 14.9 |

| DEPTH | ROP | WOB | RPM | MW | "d"c | HOURS | TURNS | ICOST | CCOST | PP | FG |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1699.0 | 49.0 | 30.0 | 118 | 10.1 | 1.06 | 5.28 | 36707 | 72.29 | 430.66 | 8.4 | 14.9 |
| 1700.0 | 28.0 | 30.0 | 118 | 10.1 | 1.22 | 5.31 | 36959 | 126.50 | 427.44 | 8.4 | 14.9 |
| 1701.0 | 15.6 | 30.0 | 118 | 10.1 | 1.38 | 5.38 | 37413 | 227.05 | 425.34 | 8.4 | 14.9 |
| 1702.0 | 43.0 | 33.0 | 118 | 10.1 | 1.13 | 5.40 | 37578 | 82.37 | 421.78 | 8.4 | 14.9 |
| 1703.0 | 34.0 | 33.0 | 118 | 10.1 | 1.20 | 5.43 | 37786 | 104.18 | 418.52 | 8.4 | 14.9 |
| 1704.0 | 69.0 | 30.0 | 118 | 10.1 | 0.97 | 5.44 | 37889 | 51.33 | 414.79 | 8.4 | 14.9 |
| 1705.0 | 43.0 | 30.0 | 118 | 10.1 | 1.10 | 5.47 | 38053 | 82.37 | 411.44 | 8.4 | 14.9 |
| 1706.0 | 35.0 | 30.0 | 118 | 10.1 | 1.16 | 5.50 | 38256 | 101.20 | 408.35 | 8.4 | 14.9 |
| 1707.0 | 14.0 | 32.0 | 118 | 10.0 | 1.45 | 5.57 | 38761 | 253.00 | 406.82 | 8.4 | 14.9 |
| 1708.0 | 23.0 | 26.0 | 118 | 10.0 | 1.24 | 5.61 | 39069 | 154.00 | 404.35 | 8.4 | 14.9 |
| 1709.0 | 22.0 | 25.0 | 118 | 10.0 | 1.24 | 5.66 | 39391 | 161.00 | 402.00 | 8.4 | 14.9 |
| 1710.0 | 42.7 | 25.0 | 118 | 10.0 | 1.06 | 5.68 | 39557 | 82.95 | 398.94 | 8.4 | 14.9 |
| 1711.0 | 13.2 | 26.0 | 118 | 10.0 | 1.40 | 5.76 | 40093 | 268.33 | 397.70 | 8.4 | 14.9 |
| 1712.0 | 4.5 | 29.0 | 118 | 10.0 | 1.74 | 5.98 | 41660 | 783.63 | 401.33 | 8.4 | 14.9 |
| 1713.0 | 3.8 | 29.0 | 118 | 9.9 | 1.79 | 6.24 | 43523 | 932.11 | 406.27 | 8.4 | 14.9 |
| 1714.0 | 17.0 | 29.0 | 118 | 9.9 | 1.37 | 6.30 | 43939 | 208.35 | 404.44 | 8.4 | 14.9 |
| 1715.0 | 36.0 | 30.0 | 118 | 9.9 | 1.17 | 6.33 | 44136 | 98.39 | 401.65 | 8.4 | 14.9 |
| 1716.0 | 46.0 | 30.0 | 118 | 9.9 | 1.10 | 6.35 | 44290 | 77.00 | 398.71 | 8.4 | 14.9 |
| 1717.0 | 40.0 | 30.0 | 118 | 9.9 | 1.14 | 6.37 | 44467 | 88.55 | 395.92 | 8.4 | 14.9 |
| 1718.0 | 42.0 | 30.0 | 118 | 9.9 | 1.12 | 6.40 | 44635 | 84.33 | 393.15 | 8.4 | 14.9 |
| 1719.0 | 59.0 | 26.0 | 118 | 9.9 | 0.99 | 6.41 | 44755 | 60.03 | 390.21 | 8.4 | 14.9 |
| 1720.0 | 14.4 | 26.0 | 118 | 9.9 | 1.37 | 6.48 | 45247 | 245.97 | 388.95 | 8.4 | 14.9 |
| 1721.0 | 23.3 | 26.0 | 118 | 9.9 | 1.24 | 6.53 | 45551 | 152.02 | 386.90 | 8.4 | 14.9 |
| 1722.0 | 9.1 | 33.0 | 118 | 9.9 | 1.60 | 6.64 | 46329 | 389.23 | 386.92 | 8.4 | 14.9 |
| 1723.0 | 6.0 | 33.0 | 118 | 9.9 | 1.73 | 6.80 | 47509 | 590.33 | 388.65 | 8.4 | 14.9 |

## COMPUTER DATA LISTING : LIST B

INTERVAL . . . . . 10 m average

DEPTH. . . . . Well depth, in metres

ROP. . . . . Rate of penetration, in metres per hour

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

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

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

TOTAL COST . . . . . Cumulative bit cost, in A dollars

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

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

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

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BIT NUMBER | 2 | IADC CODE | 111 | INTERVAL | 203.0 - | 786.0 | |
| HTC OSC 3AJ | | SIZE | 17.500 | NOZZLES | 20 | 20 | 20 |
| COST | 2400.00 | TRIP TIME | 2.4 | BIT RUN | | 583.0 | |
| TOTAL HOURS | 7.59 | TOTAL TURNS | 62594 | CONDITION | T2 | B2 | G0.000 |

| DEPTH | ROP | BIT RUN | HOURS | TURNS | TOTAL COST | ICOST | CCOST | I-C |
|---|---|---|---|---|---|---|---|---|
| 210.0 | 30.0 | 7.0 | 0.23 | 1820 | 11727.27 | 118 | 1675 | - |
| 220.0 | 60.0 | 17.0 | 0.40 | 3120 | 12317.60 | 59.03 | 724.56 | - |
| 230.0 | 150.0 | 27.0 | 0.47 | 3640 | 12553.73 | 23.61 | 464.95 | - |
| 240.0 | 100.0 | 37.0 | 0.57 | 4420 | 12907.93 | 35.42 | 348.86 | - |
| 250.0 | 105.0 | 47.0 | 0.66 | 5163 | 13245.27 | 33.73 | 281.81 | - |
| 260.0 | 75.0 | 57.0 | 0.80 | 6203 | 13717.53 | 47.23 | 240.66 | - |
| 270.0 | 66.7 | 67.0 | 0.95 | 7373 | 14248.83 | 53.13 | 212.67 | - |
| 280.0 | 66.7 | 77.0 | 1.10 | 8543 | 14780.13 | 53.13 | 191.95 | - |
| 290.0 | 82.0 | 87.0 | 1.22 | 9472 | 15212.08 | 43.20 | 174.85 | - |
| 300.0 | 36.0 | 97.0 | 1.49 | 11555 | 16195.97 | 98.39 | 166.97 | - |
| 310.0 | 72.0 | 107.0 | 1.63 | 12722 | 16687.92 | 49.19 | 155.96 | - |
| 320.0 | 110.0 | 117.0 | 1.72 | 13472 | 17069.92 | 32.20 | 145.38 | - |
| 330.0 | 136.0 | 127.0 | 1.80 | 14068 | 17370.36 | 26.04 | 135.99 | - |
| 340.0 | 151.0 | 137.0 | 1.86 | 14624 | 17604.93 | 23.46 | 127.77 | - |
| 350.0 | 141.5 | 147.0 | 1.94 | 15196 | 17855.85 | 25.03 | 120.78 | - |
| 360.0 | 172.6 | 157.0 | 1.99 | 15656 | 17966.45 | 20.52 | 114.40 | - |
| 370.0 | 180.6 | 167.0 | 2.05 | 16113 | 18156.58 | 19.61 | 108.72 | - |
| 380.0 | 165.5 | 177.0 | 2.11 | 16630 | 18370.60 | 21.40 | 103.79 | - |
| 390.0 | 182.8 | 187.0 | 2.16 | 17106 | 18564.32 | 19.37 | 99.27 | - |
| 400.0 | 180.8 | 197.0 | 2.22 | 17570 | 18760.20 | 19.59 | 95.23 | - |
| 410.0 | 171.6 | 207.0 | 2.28 | 18064 | 18966.62 | 20.64 | 91.63 | - |
| 420.0 | 203.9 | 217.0 | 2.33 | 18476 | 19140.37 | 17.37 | 88.20 | - |
| 430.0 | 210.6 | 227.0 | 2.37 | 18882 | 19308.54 | 16.82 | 85.06 | - |
| 440.0 | 166.1 | 237.0 | 2.43 | 19395 | 19521.82 | 21.33 | 82.37 | - |
| 450.0 | 144.0 | 247.0 | 2.50 | 19983 | 19767.79 | 24.60 | 80.03 | - |
| 460.0 | 128.0 | 257.0 | 2.58 | 20639 | 20044.51 | 27.67 | 77.99 | |
| 470.0 | 161.0 | 267.0 | 2.64 | 21161 | 20264.51 | 22.00 | 75.90 | - |
| 480.0 | 130.0 | 277.0 | 2.72 | 21807 | 20536.97 | 27.25 | 74.14 | - |
| 490.0 | 114.0 | 287.0 | 2.81 | 22554 | 20847.67 | 31.07 | 72.64 | - |
| 500.0 | 60.0 | 297.0 | 2.97 | 23954 | 21438.01 | 59.03 | 72.18 | - |
| 510.0 | 143.0 | 307.0 | 3.04 | 24542 | 21685.70 | 24.77 | 70.64 | - |
| 520.0 | 120.0 | 317.0 | 3.13 | 25242 | 21980.86 | 29.52 | 69.34 | - |
| 530.0 | 120.6 | 327.0 | 3.21 | 25938 | 22274.48 | 29.36 | 68.12 | - |
| 540.0 | 156.6 | 337.0 | 3.27 | 26475 | 22500.71 | 22.62 | 66.77 | - |
| 550.0 | 127.8 | 347.0 | 3.35 | 27143 | 22777.85 | 27.71 | 65.64 | - |
| 560.0 | 122.1 | 357.0 | 3.44 | 27831 | 23067.84 | 29.00 | 64.62 | - |
| 570.0 | 178.5 | 367.0 | 3.49 | 28301 | 23266.21 | 19.84 | 63.40 | - |
| 580.0 | 178.9 | 377.0 | 3.55 | 28771 | 23464.25 | 19.80 | 62.24 | - |
| 590.0 | 167.9 | 387.0 | 3.61 | 29286 | 23675.27 | 21.10 | 61.18 | - |
| 600.0 | 95.1 | 397.0 | 3.71 | 30173 | 24047.63 | 37.24 | 60.59 | - |
| 610.0 | 88.1 | 407.0 | 3.83 | 31127 | 24449.72 | 40.21 | 60.07 | - |
| 620.0 | 48.6 | 417.0 | 4.03 | 32854 | 25177.60 | 72.81 | 60.38 | + |
| 630.0 | 38.2 | 427.0 | 4.29 | 35054 | 26105.46 | 92.77 | 61.14 | + |

| DEPTH | ROP | BIT RUN | HOURS | TURNS | TOTAL COST | ICOST | CCOST | 1-C |
|---|---|---|---|---|---|---|---|---|
| 640.0 | 77.6 | 437.0 | 4.42 | 36125 | 26541.63 | 45.62 | 60.78 | - |
| 650.0 | 168.1 | 447.0 | 4.48 | 36635 | 26772.32 | 21.07 | 59.82 | - |
| 660.0 | 79.5 | 457.0 | 4.61 | 37691 | 27217.70 | 44.54 | 59.56 | - |
| 670.0 | 67.7 | 467.0 | 4.75 | 38931 | 27740.66 | 52.30 | 59.40 | - |
| 680.0 | 48.4 | 477.0 | 4.96 | 40666 | 28471.93 | 73.13 | 59.69 | + |
| 690.0 | 35.9 | 487.0 | 5.24 | 43003 | 29457.32 | 98 54 | 60.49 | + |
| 700.0 | 89.6 | 497.0 | 5.35 | 43940 | 29852.63 | 39.53 | 60.07 | - |
| 710.0 | 47.1 | 507.0 | 5.56 | 45723 | 30604.60 | 75.26 | 60.36 | + |
| 720.0 | 33.9 | 517.0 | 5.86 | 48203 | 31649.99 | 104.54 | 61.22 | + |
| 730.0 | 26.4 | 527.0 | 6.24 | 51347 | 32990.89 | 134.09 | 62.60 | + |
| 740.0 | 43.4 | 537.0 | 6.47 | 53251 | 33806.11 | 81.57 | 62.95 | + |
| 750.0 | 35.3 | 547.0 | 6.75 | 55629 | 34808.83 | 100.27 | 63.64 | + |
| 760.0 | 58.3 | 557.0 | 6.92 | 57061 | 35416.47 | 60.76 | 63.58 | - |
| 770.0 | 39.2 | 567.0 | 7.18 | 59174 | 36320.28 | 90.38 | 64.06 | + |
| 780.0 | 46.2 | 577.0 | 7.39 | 60995 | 37086.34 | 76.61 | 64.27 | + |
| 786.0 | 60.7 | 583.0 | 7.49 | 61814 | 37436.38 | 58.34 | 64.21 | - |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 3 | IADC CODE | 114 | INTERVAL | 790.0- 1362.0 |
| HTC X3A | | SIZE | 12.250 | NOZZLES | 15 15 15 |
| COST | 1440.00 | TRIP TIME | 3.6 | BIT RUN | 576.0 |
| TOTAL HOURS | 27.35 | TOTAL TURNS | 227640 | CONDITION | T8 BR G0.750 |

| DEPTH | ROP | BIT RUN | HOURS | TURNS | TOTAL COST | ICOST | CCOST | I-C |
|---|---|---|---|---|---|---|---|---|
| 790.0 | 36.0 | 4.0 | 0.11 | 691 | 14407.75 | 98 | 3602 | - |
| 800.0 | 35.1 | 14.0 | 0.40 | 2846 | 15416.66 | 101 | 1101 | - |
| 810.0 | 42.5 | 24.0 | 0.63 | 4883 | 16249.21 | 83.25 | 677.05 | - |
| 820.0 | 38.4 | 34.0 | 0.89 | 7136 | 17170.41 | 92.12 | 505.01 | - |
| 830.0 | 82.1 | 44.0 | 1.01 | 8195 | 17601.81 | 43.14 | 400.04 | - |
| 840.0 | 58.1 | 54.0 | 1.19 | 9677 | 18211.94 | 61.01 | 337.26 | - |
| 850.0 | 83.2 | 64.0 | 1.31 | 10702 | 18637.82 | 42.59 | 291.22 | - |
| 860.0 | 82.6 | 74.0 | 1.43 | 11733 | 19066.59 | 42.88 | 257.66 | - |
| 870.0 | 45.0 | 84.0 | 1.65 | 13416 | 19854.26 | 78.77 | 236.36 | - |
| 880.0 | 20.4 | 94.0 | 2.14 | 17293 | 21590.43 | 173.62 | 229.69 | - |
| 890.0 | 17.3 | 104.0 | 2.72 | 22037 | 23633.59 | 204.22 | 227.24 | - |
| 900.0 | 28.5 | 114.0 | 3.07 | 26038 | 24877.61 | 124.10 | 218.19 | - |
| 910.0 | 40.3 | 124.0 | 3.31 | 28179 | 25759.46 | 87.88 | 207.68 | - |
| 920.0 | 42.9 | 134.0 | 3.55 | 30025 | 26570.89 | 80.64 | 198.35 | - |
| 930.0 | 32.7 | 144.0 | 3.85 | 32412 | 27681.38 | 103.25 | 197.09 | - |
| 940.0 | 29.6 | 154.0 | 4.19 | 35260 | 28858.48 | 119.71 | 187.39 | - |
| 950.0 | 30.3 | 164.0 | 4.52 | 38029 | 30026.36 | 116.79 | 183.09 | - |
| 960.0 | 27.4 | 174.0 | 4.89 | 41089 | 31319.91 | 129.36 | 180.00 | - |
| 970.0 | 31.3 | 184.0 | 5.21 | 43754 | 32450.58 | 113.07 | 176.36 | - |
| 980.0 | 30.0 | 194.0 | 5.54 | 46449 | 33630.13 | 117.96 | 173.35 | - |
| 990.0 | 24.9 | 204.0 | 5.94 | 49780 | 35052.47 | 142.23 | 171.83 | - |
| 1000.0 | 13.8 | 214.0 | 6.66 | 55520 | 37613.02 | 256.06 | 175.76 | + |
| 1010.0 | 17.3 | 224.0 | 7.24 | 60114 | 39655.70 | 204.27 | 177.03 | + |
| 1020.0 | 19.3 | 234.0 | 7.76 | 64618 | 41494.19 | 183.85 | 177.33 | + |
| 1030.0 | 18.0 | 244.0 | 8.31 | 69128 | 43457.35 | 196.32 | 178.10 | + |
| 1040.0 | 24.0 | 254.0 | 8.73 | 72480 | 44935.21 | 147.79 | 176.91 | - |
| 1050.0 | 23.5 | 264.0 | 9.16 | 75931 | 46442.54 | 150.73 | 175.92 | - |
| 1060.0 | 25.6 | 274.0 | 9.55 | 79129 | 47828.38 | 138.58 | 174.56 | - |
| 1070.0 | 35.9 | 284.0 | 9.83 | 81382 | 48814.58 | 98.62 | 171.88 | - |
| 1080.0 | 31.3 | 294.0 | 10.14 | 84067 | 49944.94 | 113.04 | 169.88 | - |
| 1090.0 | 36.3 | 304.0 | 10.42 | 86508 | 50919.90 | 97.50 | 167.50 | - |
| 1100.0 | 34.2 | 314.0 | 10.71 | 88996 | 51957.02 | 103.70 | 165.47 | - |
| 1110.0 | 41.1 | 324.0 | 10.96 | 91060 | 52817.91 | 86.09 | 163.02 | - |
| 1120.0 | 38.3 | 334.0 | 11.22 | 93332 | 53743.01 | 92.51 | 160.91 | - |
| 1130.0 | 25.2 | 344.0 | 11.61 | 96773 | 55149.17 | 140.62 | 160.32 | - |
| 1140.0 | 20.6 | 354.0 | 12.10 | 101006 | 56872.61 | 172.34 | 160.66 | + |
| 1150.0 | 10.9 | 364.0 | 13.02 | 109153 | 60118.35 | 324.57 | 165.16 | + |
| 1160.0 | 7.9 | 374.0 | 14.28 | 120512 | 64595.91 | 447.76 | 172.72 | + |
| 1170.0 | 10.1 | 384.0 | 15.27 | 128124 | 68086.78 | 349.09 | 177.31 | + |
| 1180.0 | 8.8 | 394.0 | 16.41 | 137816 | 72126.50 | 403.97 | 183.06 | + |
| 1190.0 | 9.3 | 404.0 | 17.48 | 146817 | 75921.94 | 379.54 | 187.93 | + |
| 1200.0 | 5.3 | 414.0 | 19.38 | 162099 | 82659.32 | 673.74 | 199.66 | + |
| 1210.0 | 15.8 | 424.0 | 20.01 | 167312 | 84904.22 | 224.49 | 200.25 | + |

| DEPTH | ROP | BIT RUN | HOURS | TURNS | TOTAL COST | ICOST | CCOST | I-C |
|---|---|---|---|---|---|---|---|---|
| 1220.0 | 19.1 | 434.0 | 20.54 | 171603 | 86756.52 | 185.23 | 199.90 | - |
| 1230.0 | 26.8 | 444.0 | 20.91 | 174737 | 88078.23 | 132.17 | 198.37 | - |
| 1240.0 | 19.1 | 454.0 | 21.43 | 179139 | 89974.35 | 185.61 | 198.09 | - |
| 1250.0 | 20.7 | 464.0 | 21.92 | 183192 | 91643.37 | 170.90 | 197.51 | - |
| 1260.0 | 38.0 | 474.0 | 22.18 | 185401 | 92574.89 | 93.15 | 195.31 | - |
| 1270.0 | 62.4 | 484.0 | 22.34 | 186748 | 93142.80 | 56.79 | 192.44 | - |
| 1280.0 | 33.3 | 494.0 | 22.64 | 189273 | 94207.56 | 106.48 | 190.70 | - |
| 1290.0 | 22.8 | 504.0 | 23.08 | 192965 | 95764.38 | 155.68 | 190.01 | - |
| 1300.0 | 31.7 | 514.0 | 23.40 | 195559 | 96881.33 | 111.69 | 188.49 | - |
| 1310.0 | 23.7 | 524.0 | 23.82 | 199052 | 98376.70 | 149.54 | 187.74 | - |
| 1320.0 | 17.0 | 534.0 | 24.41 | 203833 | 100464.41 | 208.77 | 188.14 | + |
| 1330.0 | 68.0 | 544.0 | 24.55 | 205060 | 100985.35 | 52.09 | 185.63 | - |
| 1340.0 | 37.3 | 554.0 | 24.82 | 207292 | 101934.30 | 94.90 | 184.00 | - |
| 1350.0 | 37.5 | 564.0 | 25.09 | 209458 | 102879.21 | 94.49 | 182.41 | - |
| 1360.0 | 5.6 | 574.0 | 26.86 | 223679 | 109154.22 | 627.70 | 190.17 | + |
| 1362.0 | 4.2 | 576.0 | 27.33 | 227491 | 110823.22 | 833.53 | 192.40 | + |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 4 | IADC CODE | 135 | INTERVAL | 1362.0- 1485.0 |
| HTC XDG | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1440.00 | TRIP TIME | 4.0 | BIT RUN | 123.0 |
| TOTAL HOURS | 12.50 | TOTAL TURNS | 100438 | CONDITION | T7 B4 G0.250 |

| DEPTH | ROP | BIT RUN | HOURS | TURNS | TOTAL COST | 1COST | LCOST | I-L |
|---|---|---|---|---|---|---|---|---|
| 1370.0 | 5.5 | 8.0 | 1.45 | 11696 | 20754.96 | 643 | 2594 | - |
| 1380.0 | 11.2 | 18.0 | 2.34 | 18892 | 23912.05 | 316 | 1428 | - |
| 1390.0 | 11.5 | 28.0 | 3.22 | 25944 | 26995.70 | 308.37 | 964.13 | - |
| 1400.0 | 7.8 | 38.0 | 4.50 | 36304 | 31553.69 | 455.80 | 830.36 | - |
| 1410.0 | 6.0 | 48.0 | 6.18 | 49578 | 37488.20 | 593.46 | 781.01 | - |
| 1420.0 | 7.8 | 58.0 | 7.46 | 60350 | 42037.93 | 454.96 | 724.79 | - |
| 1430.0 | 33.4 | 68.0 | 7.76 | 62862 | 43097.43 | 105.95 | 633.79 | - |
| 1440.0 | 13.0 | 78.0 | 8.53 | 69305 | 45819.41 | 272.70 | 587.43 | - |
| 1450.0 | 16.1 | 88.0 | 9.15 | 74324 | 48020.78 | 220.14 | 545.69 | - |
| 1460.0 | 24.0 | 98.0 | 9.57 | 77569 | 49494.18 | 147.34 | 505.04 | - |
| 1470.0 | 9.4 | 108.0 | 10.63 | 85845 | 53252.23 | 375.80 | 493.08 | - |
| 1480.0 | 9.4 | 118.0 | 11.70 | 94176 | 57035.42 | 378.32 | 483.35 | - |
| 1485.0 | 6.2 | 123.0 | 12.50 | 100438 | 59878.34 | 568.68 | 486.82 | - |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 5 | IADC CODE | 217 | INTERVAL | 1485.0- 1605.6 |
| HTC JD4 | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1740.00 | TRIP TIME | 4.6 | BIT RUN | 120.6 |
| TOTAL HOURS | 12.88 | TOTAL TURNS | 113601 | CONDITION | T7 B8 G0.188 |

| DEPTH | ROP | BIT RUN | HOURS | TURNS | TOTAL COST | ICOST | CCOST | I-C |
|---|---|---|---|---|---|---|---|---|
| 1490.0 | 5.9 | 5.0 | 0.84 | 5837 | 21014.72 | 596 | 4203 | - |
| 1500.0 | 29.7 | 15.0 | 1.18 | 8718 | 22206.70 | 119 | 1480 | - |
| 1510.0 | 8.9 | 25.0 | 2.30 | 18837 | 26189.30 | 398 | 1048 | - |
| 1520.0 | 9.7 | 35.0 | 3.33 | 28071 | 29823.06 | 363.38 | 852.09 | - |
| 1530.0 | 11.1 | 45.0 | 4.23 | 36126 | 33027.89 | 320.48 | 733.95 | - |
| 1540.0 | 25.0 | 55.0 | 4.63 | 39680 | 34445.77 | 141.79 | 626.29 | - |
| 1550.0 | 7.0 | 65.0 | 6.07 | 52396 | 39517.83 | 507.21 | 607.97 | - |
| 1560.0 | 8.1 | 75.0 | 7.30 | 63455 | 43805.61 | 436.78 | 585.14 | - |
| 1570.0 | 19.9 | 85.0 | 7.80 | 67973 | 45663.69 | 177.81 | 537.22 | - |
| 1580.0 | 7.0 | 95.0 | 9.23 | 80872 | 50740.13 | 507.64 | 534.11 | - |
| 1590.0 | 8.1 | 105.0 | 10.47 | 91927 | 55124.71 | 438.46 | 525.00 | - |
| 1600.0 | 10.6 | 115.0 | 11.41 | 100349 | 58453.99 | 332.93 | 508.30 | - |
| 1605.6 | 3.8 | 120.6 | 12.87 | 113452 | 63610.87 | 920.87 | 527.45 | - |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 6 | IADC CODE | 517 | INTERVAL | 1605.6- 1723.0 |
| HTC J22 | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 5240.00 | TRIP TIME | 4.6 | BIT RUN | 117.4 |
| TOTAL HOURS | 6.95 | TOTAL TURNS | 48561 | CONDITION | T2 B2 G0.000 |

| DEPTH | ROP | BIT RUN | HOURS | TURNS | TOTAL COST | ICOST | CCOST | I-C |
|---|---|---|---|---|---|---|---|---|
| 1610.0 | 4.4 | 4.4 | 1.01 | 7190 | 25102.08 | 811 | 5705 | - |
| 1620.0 | 15.2 | 14.4 | 1.67 | 11692 | 27433.23 | 233 | 1965 | - |
| 1630.0 | 20.3 | 24.4 | 2.16 | 15068 | 29181.51 | 175 | 1196 | - |
| 1640.0 | 58.1 | 34.4 | 2.33 | 16245 | 29790.69 | 60.92 | 866.01 | - |
| 1650.0 | 33.0 | 44.4 | 2.63 | 18320 | 30865.63 | 107.49 | 695.12 | - |
| 1660.0 | 14.6 | 54.4 | 3.32 | 23142 | 33287.01 | 242.14 | 611.89 | - |
| 1670.0 | 19.8 | 64.4 | 3.82 | 26713 | 35073.14 | 178.61 | 544.61 | - |
| 1680.0 | 32.6 | 74.4 | 4.13 | 28799 | 36160.66 | 108.75 | 486.03 | - |
| 1690.0 | 15.6 | 84.4 | 4.77 | 33132 | 38435.18 | 227.45 | 455.39 | - |
| 1700.0 | 18.5 | 94.4 | 5.31 | 36959 | 40349.95 | 191.48 | 427.44 | - |
| 1710.0 | 27.3 | 104.4 | 5.68 | 39557 | 41649.40 | 129.95 | 398.94 | - |
| 1720.0 | 12.4 | 114.4 | 6.48 | 45247 | 44496.10 | 284.67 | 388.95 | - |
| 1723.0 | 9.4 | 117.4 | 6.80 | 47509 | 45627.68 | 377.19 | 388.65 | - |

## COMPUTER DATA LISTING : LIST C

| | |
|---|---|
| INTERVAL . . . . . | 10 m average |
| DEPTH. . . . . | Well depth, in metres |
| FLOW RATE. . . . . | Mud flow into the well, in gallons per minute |
| PSP . . . . . | Pump pressure, in pounds per square inch |
| PBIT . . . . . | Bit pressure drop, in pounds per square inch |
| % PSP . . . . . | Percentage of surface pressure dropped at the bit |
| HHP . . . . . | Bit hydraulic horsepower |
| HHP/SQ IN . . . . . | Bit hydraulic horsepower per square inch of bit diameter |
| IMPACT FORCE . . . . . | Bit impact force, in foot pound per second squared |
| JET VELOCITY . . . . . | Mud velocity through the bit nozzles, in metres per second |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BIT NUMBER | 2 | IADC CODE | 111 | INTERVAL | 203.0- | 786.0 | |
| HTC OSC 3AJ | | SIZE | 17.500 | NOZZLES | 20 | 20 | 20 |
| COST | 2400.00 | TRIP TIME | 2.4 | BIT RUN | | 583.0 | |
| TOTAL HOURS | 7.59 | TOTAL TURNS | 62594 | CONDITION | T2 | B2 | G0.000 |

| DEPTH | FLOW RATE | PSP | PBIT | %PSP | HHP | HHP/ sqin | IMPACT FORCE | JET VELOCITY |
|---|---|---|---|---|---|---|---|---|
| 210.0 | 1200 | 1720.0 | 1345.3 | 78.2 | 941 | 3.91 | 2233 | 127 |
| 220.0 | 1200 | 1720.0 | 1345.3 | 78.2 | 941 | 3.91 | 2233 | 127 |
| 230.0 | 1200 | 1720.0 | 1345.3 | 78.2 | 941 | 3.91 | 2233 | 127 |
| 240.0 | 1200 | 1720.0 | 1345.3 | 78.2 | 941 | 3.91 | 2233 | 127 |
| 250.0 | 1190 | 2200.0 | 1323.0 | 60.1 | 918 | 3.82 | 2196 | 126 |
| 260.0 | 1190 | 2200.0 | 1323.0 | 60.1 | 918 | 3.82 | 2196 | 126 |
| 270.0 | 1200 | 2300.0 | 1345.3 | 58.5 | 941 | 3.91 | 2233 | 127 |
| 280.0 | 1200 | 2200.0 | 1345.3 | 61.2 | 941 | 3.91 | 2233 | 127 |
| 290.0 | 1200 | 2200.0 | 1345.3 | 61.2 | 941 | 3.91 | 2233 | 127 |
| 300.0 | 1200 | 2200.0 | 1345.3 | 61.2 | 941 | 3.91 | 2233 | 127 |
| 310.0 | 1150 | 2200.0 | 1235.5 | 56.2 | 829 | 3.45 | 2051 | 122 |
| 320.0 | 1150 | 2200.0 | 1235.5 | 56.2 | 829 | 3.45 | 2051 | 122 |
| 330.0 | 1150 | 2200.0 | 1235.5 | 56.2 | 829 | 3.45 | 2051 | 122 |
| 340.0 | 1150 | 2200.0 | 1235.5 | 56.2 | 829 | 3.45 | 2051 | 122 |
| 350.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 360.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 370.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 380.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 390.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 400.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 410.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 420.0 | 1165 | 2200.0 | 1268.0 | 57.6 | 861 | 3.58 | 2105 | 123 |
| 430.0 | 1080 | 2200.0 | 1089.7 | 49.5 | 686 | 2.85 | 1809 | 114 |
| 440.0 | 1080 | 2200.0 | 1089.7 | 49.5 | 686 | 2.85 | 1809 | 114 |
| 450.0 | 1080 | 2200.0 | 1089.7 | 49.5 | 686 | 2.85 | 1809 | 114 |
| 460.0 | 1170 | 2350.0 | 1278.9 | 54.4 | 873 | 3.63 | 2123 | 124 |
| 470.0 | 1170 | 2350.0 | 1278.9 | 54.4 | 873 | 3.63 | 2123 | 124 |
| 480.0 | 1170 | 2350.0 | 1278.9 | 54.4 | 873 | 3.63 | 2123 | 124 |
| 490.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 500.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 510.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 520.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 530.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 540.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 550.0 | 1170 | 2410.0 | 1278.9 | 53.1 | 873 | 3.63 | 2123 | 124 |
| 560.0 | 1170 | 2410.0 | 1278.9 | 53.1 | 873 | 3.63 | 2123 | 124 |
| 570.0 | 1170 | 2410.0 | 1278.9 | 53.1 | 873 | 3.63 | 2123 | 124 |
| 580.0 | 1170 | 2500.0 | 1278.9 | 51.2 | 873 | 3.63 | 2123 | 124 |
| 590.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 600.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 610.0 | 1170 | 2450.0 | 1278.9 | 52.2 | 873 | 3.63 | 2123 | 124 |
| 620.0 | 1170 | 2450.0 | 1278.9 | 52.2 | 873 | 3.63 | 2123 | 124 |
| 630.0 | 1170 | 2450.0 | 1278.9 | 52.2 | 873 | 3.63 | 2123 | 124 |

| DEPTH | FLOW RATE | PSP | PBIT | %PSP | HHP | HHP/ sqin | IMPACT FORCE | JET VELOCITY |
|---|---|---|---|---|---|---|---|---|
| 640.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 650.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 660.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 670.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 680.0 | 1170 | 2500.0 | 1278.9 | 51.2 | 873 | 3.63 | 2123 | 124 |
| 690.0 | 1170 | 2500.0 | 1278.9 | 51.2 | 873 | 3.63 | 2123 | 124 |
| 700.0 | 1170 | 2510.0 | 1278.9 | 51.0 | 873 | 3.63 | 2123 | 124 |
| 710.0 | 1120 | 2500.0 | 1171.9 | 46.9 | 765 | 3.18 | 1946 | 119 |
| 720.0 | 1120 | 2500.0 | 1171.9 | 46.9 | 765 | 3.18 | 1946 | 119 |
| 730.0 | 1120 | 2500.0 | 1171.9 | 46.9 | 765 | 3.18 | 1946 | 119 |
| 740.0 | 1170 | 2400.0 | 1278.9 | 53.3 | 873 | 3.63 | 2123 | 124 |
| 750.0 | 1170 | 2450.0 | 1278.9 | 52.2 | 873 | 3.63 | 2123 | 124 |
| 760.0 | 1170 | 2500.0 | 1278.9 | 51.2 | 873 | 3.63 | 2123 | 124 |
| 770.0 | 1170 | 2500.0 | 1293.8 | 51.8 | 883 | 3.67 | 2148 | 124 |
| 780.0 | 1135 | 2500.0 | 1217.5 | 48.7 | 806 | 3.35 | 2021 | 120 |
| 786.0 | 1135 | 2500.0 | 1217.5 | 48.7 | 806 | 3.35 | 2021 | 120 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 3 | IADC CODE | 114 | INTERVAL | 786.0- 1362.0 |
| HTC X3A | | SIZE | 12.250 | NOZZLES | 15 15 15 |
| COST | 1440.00 | TRIP TIME | 3.6 | BIT RUN | 576.0 |
| TOTAL HOURS | 27.35 | TOTAL TURNS | 227640 | CONDITION | T8 B8 G0.750 |

| DEPTH | FLOW RATE | PSP | PBIT | %PSP | HHP | HHP/ sqin | IMPACT FORCE | JET VELOCITY |
|---|---|---|---|---|---|---|---|---|
| 790.0 | 800 | 2970.0 | 1933.7 | 65.1 | 902 | 7.65 | 1806 | 151 |
| 800.0 | 800 | 2970.0 | 1955.6 | 65.8 | 912 | 7.74 | 1826 | 151 |
| 810.0 | 800 | 2970.0 | 1955.6 | 65.8 | 912 | 7.74 | 1826 | 151 |
| 820.0 | 800 | 2970.0 | 1955.6 | 65.8 | 912 | 7.74 | 1826 | 151 |
| 830.0 | 825 | 2980.0 | 2079.8 | 69.8 | 1001 | 8.49 | 1942 | 155 |
| 840.0 | 825 | 2980.0 | 2079.8 | 69.8 | 1001 | 8.49 | 1942 | 155 |
| 850.0 | 825 | 3100.0 | 2079.8 | 67.1 | 1001 | 8.49 | 1942 | 155 |
| 860.0 | 825 | 3100.0 | 2079.8 | 67.1 | 1001 | 8.49 | 1942 | 155 |
| 870.0 | 825 | 3100.0 | 2079.8 | 67.1 | 1001 | 8.49 | 1942 | 155 |
| 880.0 | 825 | 3100.0 | 2056.4 | 66.3 | 989 | 8.39 | 1920 | 155 |
| 890.0 | 825 | 3100.0 | 2079.8 | 67.1 | 1001 | 8.49 | 1942 | 155 |
| 900.0 | 815 | 3090.0 | 2020.5 | 65.4 | 960 | 8.15 | 1887 | 153 |
| 910.0 | 815 | 3090.0 | 2020.5 | 65.4 | 960 | 8.15 | 1887 | 153 |
| 920.0 | 815 | 3020.0 | 2020.5 | 66.9 | 960 | 8.15 | 1887 | 153 |
| 930.0 | 815 | 3020.0 | 2020.5 | 66.9 | 960 | 8.15 | 1887 | 153 |
| 940.0 | 815 | 3020.0 | 2025.1 | 67.1 | 963 | 8.17 | 1891 | 153 |
| 950.0 | 815 | 2980.0 | 2025.1 | 68.0 | 963 | 8.17 | 1891 | 153 |
| 960.0 | 815 | 2980.0 | 2025.1 | 68.0 | 963 | 8.17 | 1891 | 153 |
| 970.0 | 780 | 2740.0 | 1854.9 | 67.7 | 844 | 7.16 | 1732 | 147 |
| 980.0 | 700 | 2800.0 | 1514.1 | 54.1 | 618 | 5.24 | 1414 | 132 |
| 990.0 | 440 | 880.0 | 618.2 | 70.2 | 159 | 1.35 | 577 | 83 |
| 1000.0 | 250 | 340.0 | 206.0 | 60.6 | 30 | 0.25 | 192 | 47 |
| 1010.0 | 760 | 2680.0 | 1943.4 | 72.5 | 861 | 7.31 | 1815 | 143 |
| 1020.0 | 420 | 900.0 | 599.6 | 66.6 | 147 | 1.25 | 560 | 79 |
| 1030.0 | 700 | 2590.0 | 1699.2 | 65.6 | 694 | 5.89 | 1587 | 132 |
| 1040.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1050.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1060.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1070.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1080.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1090.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1100.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1110.0 | 700 | 2800.0 | 1716.0 | 61.3 | 701 | 5.94 | 1602 | 132 |
| 1120.0 | 715 | 2800.0 | 1807.9 | 64.6 | 754 | 6.40 | 1688 | 135 |
| 1130.0 | 715 | 2800.0 | 1807.9 | 64.6 | 754 | 6.40 | 1688 | 135 |
| 1140.0 | 715 | 2800.0 | 1807.9 | 64.6 | 754 | 6.40 | 1688 | 135 |
| 1150.0 | 715 | 2800.0 | 1807.9 | 64.6 | 754 | 6.40 | 1688 | 135 |
| 1160.0 | 725 | 2900.0 | 1858.8 | 64.1 | 786 | 6.67 | 1736 | 137 |
| 1170.0 | 680 | 2560.0 | 1619.3 | 63.3 | 642 | 5.45 | 1512 | 128 |
| 1180.0 | 700 | 2690.0 | 1699.2 | 63.2 | 694 | 5.89 | 1587 | 132 |
| 1190.0 | 725 | 2800.0 | 1840.7 | 65.7 | 778 | 6.60 | 1719 | 137 |
| 1200.0 | 730 | 2920.0 | 1866.2 | 63.9 | 795 | 6.74 | 1743 | 137 |
| 1210.0 | 735 | 2850.0 | 1891.9 | 66.4 | 811 | 6.88 | 1767 | 138 |

| DEPTH | FLOW RATE | PSP | PBIT | %PSP | HHP | HHP/ sqin | IMPACT FORCE | JET VELOCITY |
|---|---|---|---|---|---|---|---|---|
| 1220.0 | 735 | 2850.0 | 1891.9 | 66.4 | 811 | 6.88 | 1767 | 138 |
| 1230.0 | 735 | 2900.0 | 1891.9 | 65.2 | 811 | 6.88 | 1767 | 138 |
| 1240.0 | 735 | 2900.0 | 1891.9 | 65.2 | 811 | 6.88 | 1767 | 138 |
| 1250.0 | 710 | 2900.0 | 1765.4 | 60.9 | 731 | 6.20 | 1649 | 134 |
| 1260.0 | 710 | 2900.0 | 1765.4 | 60.9 | 731 | 6.20 | 1649 | 134 |
| 1270.0 | 710 | 2900.0 | 1765.4 | 60.9 | 731 | 6.20 | 1649 | 134 |
| 1280.0 | 710 | 2900.0 | 1765.4 | 60.9 | 731 | 6.20 | 1649 | 134 |
| 1290.0 | 710 | 2900.0 | 1765.4 | 60.9 | 731 | 6.20 | 1649 | 134 |
| 1300.0 | 710 | 2900.0 | 1765.4 | 60.9 | 731 | 6.20 | 1649 | 134 |
| 1310.0 | 710 | 2900.0 | 1765.4 | 60.9 | 731 | 6.20 | 1649 | 134 |
| 1320.0 | 600 | 2000.0 | 1260.7 | 63.0 | 441 | 3.74 | 1177 | 113 |
| 1330.0 | 725 | 2850.0 | 1804.6 | 63.3 | 763 | 6.47 | 1685 | 137 |
| 1340.0 | 725 | 2850.0 | 1804.6 | 63.3 | 763 | 6.47 | 1685 | 137 |
| 1350.0 | 725 | 2850.0 | 1804.6 | 63.3 | 763 | 6.47 | 1685 | 137 |
| 1360.0 | 725 | 2850.0 | 1775.8 | 62.3 | 751 | 6.37 | 1658 | 137 |
| 1362.0 | 725 | 2850.0 | 1779.4 | 62.4 | 752 | 6.38 | 1662 | 137 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 4 | IADC CODE | 135 | INTERVAL | 1362.0- 1485.0 |
| HTC XDG | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1440.00 | TRIP TIME | 4.0 | BIT RUN | 123.0 |
| TOTAL HOURS | 12.50 | TOTAL TURNS | 100438 | CONDITION | T7 B4 G0.250 |

| DEPTH | FLOW RATE | PSP | PBIT | %PSP | HHP | HHP/ sqin | IMPACT FORCE | JET VELOCITY |
|---|---|---|---|---|---|---|---|---|
| 1370.0 | 625 | 2900.0 | 2472.3 | 85.3 | 901 | 7.65 | 1734 | 157 |
| 1380.0 | 625 | 2900.0 | 2472.3 | 85.3 | 901 | 7.65 | 1734 | 157 |
| 1390.0 | 625 | 2900.0 | 2472.3 | 85.3 | 901 | 7.65 | 1734 | 157 |
| 1400.0 | 635 | 3000.0 | 2552.0 | 85.1 | 945 | 8.02 | 1790 | 159 |
| 1410.0 | 640 | 3050.0 | 2592.4 | 85.0 | 968 | 8.21 | 1818 | 160 |
| 1420.0 | 635 | 3000.0 | 2552.0 | 85.1 | 945 | 8.02 | 1790 | 159 |
| 1430.0 | 635 | 3000.0 | 2552.0 | 85.1 | 945 | 8.02 | 1790 | 159 |
| 1440.0 | 645 | 3000.0 | 2633.1 | 87.8 | 990 | 8.40 | 1847 | 162 |
| 1450.0 | 645 | 3000.0 | 2633.1 | 87.8 | 990 | 8.40 | 1847 | 162 |
| 1460.0 | 645 | 3000.0 | 2633.1 | 87.8 | 990 | 8.40 | 1847 | 162 |
| 1470.0 | 645 | 3000.0 | 2633.1 | 87.8 | 990 | 8.40 | 1847 | 162 |
| 1480.0 | 645 | 3000.0 | 2633.1 | 87.8 | 990 | 8.40 | 1847 | 162 |
| 1485.0 | 645 | 3000.0 | 2633.1 | 87.8 | 990 | 8.40 | 1847 | 162 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 5 | IADC CODE | 217 | INTERVAL | 1485.0- 1605.6 |
| HTC JD4 | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1740.00 | TRIP TIME | 4.6 | BIT RUN | 120.6 |
| TOTAL HOURS | 12.88 | TOTAL TURNS | 113601 | CONDITION | T7 B8 G0.188 |

| DEPTH | FLOW RATE | PSP | PBIT | %PSP | HHP | HHP/ sqin | IMPACT FORCE | JET VELOCITY |
|---|---|---|---|---|---|---|---|---|
| 1490.0 | 625 | 3000.0 | 2472.3 | 82.4 | 901 | 7.65 | 1734 | 157 |
| 1500.0 | 650 | 3000.0 | 2674.0 | 89.1 | 1014 | 8.60 | 1876 | 163 |
| 1510.0 | 650 | 3000.0 | 2674.0 | 89.1 | 1014 | 8.60 | 1876 | 163 |
| 1520.0 | 650 | 3000.0 | 2674.0 | 89.1 | 1014 | 8.60 | 1876 | 163 |
| 1530.0 | 650 | 3000.0 | 2674.0 | 89.1 | 1014 | 8.60 | 1876 | 163 |
| 1540.0 | 640 | 2900.0 | 2592.4 | 89.4 | 968 | 8.21 | 1818 | 160 |
| 1550.0 | 645 | 3000.0 | 2582.4 | 86.1 | 971 | 8.24 | 1811 | 162 |
| 1560.0 | 645 | 3000.0 | 2582.4 | 86.1 | 971 | 8.24 | 1811 | 162 |
| 1570.0 | 645 | 3000.0 | 2582.4 | 86.1 | 971 | 8.24 | 1811 | 162 |
| 1580.0 | 640 | 2950.0 | 2552.5 | 86.5 | 953 | 8.08 | 1790 | 160 |
| 1590.0 | 650 | 2950.0 | 2612.3 | 88.6 | 990 | 8.40 | 1832 | 163 |
| 1600.0 | 650 | 2950.0 | 2612.3 | 88.6 | 990 | 8.40 | 1832 | 163 |
| 1605.6 | 650 | 2950.0 | 2612.3 | 88.6 | 990 | 8.40 | 1832 | 163 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 6 | IADC CODE | 517 | INTERVAL | 1605.6- 1723.0 |
| HTC J22 | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 5240.00 | TRIP TIME | 4.6 | BIT RUN | 117.4 |
| TOTAL HOURS | 6.95 | TOTAL TURNS | 48561 | CONDITION | T2 B2 G0.000 |

| DEPTH | FLOW RATE | PSP | PBIT | %PSP | HHP | HHP/ sqin | IMPACT FORCE | JET VELOCITY |
|---|---|---|---|---|---|---|---|---|
| 1610.0 | 650 | 2950.0 | 2596.9 | 88.0 | 984 | 8.35 | 1821 | 163 |
| 1620.0 | 640 | 2980.0 | 2527.6 | 84.8 | 943 | 8.00 | 1773 | 160 |
| 1630.0 | 640 | 3000.0 | 2527.6 | 84.3 | 943 | 8.00 | 1773 | 160 |
| 1640.0 | 630 | 3000.0 | 2449.2 | 81.6 | 900 | 7.64 | 1718 | 158 |
| 1650.0 | 630 | 3000.0 | 2449.2 | 81.6 | 900 | 7.64 | 1718 | 158 |
| 1660.0 | 630 | 3000.0 | 2449.2 | 81.6 | 900 | 7.64 | 1718 | 158 |
| 1670.0 | 630 | 3000.0 | 2449.2 | 81.6 | 900 | 7.64 | 1718 | 158 |
| 1680.0 | 635 | 2950.0 | 2478.4 | 84.0 | 918 | 7.79 | 1738 | 159 |
| 1690.0 | 635 | 2950.0 | 2478.4 | 84.0 | 918 | 7.79 | 1738 | 159 |
| 1700.0 | 625 | 2900.0 | 2401.0 | 82.8 | 875 | 7.43 | 1684 | 157 |
| 1710.0 | 625 | 2900.0 | 2367.7 | 81.6 | 863 | 7.32 | 1661 | 157 |
| 1720.0 | 640 | 2900.0 | 2477.7 | 85.4 | 925 | 7.85 | 1738 | 160 |
| 1723.0 | 550 | 2100.0 | 1829.9 | 87.1 | 587 | 4.98 | 1283 | 138 |

## COMPUTER DATA LISTING : LIST D

INTERVAL . . . . . 10 m average

DEPTH . . . . . Well depth, in metres

SPM1 . . . . . Stroke rate per minute, for pump No 1

SPM2 . . . . . Stroke rate per minute, for pump No 2

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

### ANNULAR VELOCITIES : ( in metres per minute )

DC/OH - Between drill collars and the open hole

DC/CSG - Between drill collars and casing

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

HW/CSG - Between heavyweight drill pipe and casing

DP/OH - Between drill pipe and open hole

DP/CSG - Between drill pipe and casing

DP/RIS - Between drill pipe and riser

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BIT NUMBER | 2 | IADC CODE | 111 | INTERVAL | 203.0- | 786.0 |
| HTC OSC 3AJ | | SIZE | 17.500 | NOZZLES | 20 | 20 20 |
| COST | 2400.00 | TRIP TIME | 2.4 | BIT RUN | | 583.0 |
| TOTAL HOURS | 7.59 | TOTAL TURNS | 62594 | 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 | 120 | 120 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 220.0 | 120 | 120 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 230.0 | 120 | 120 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 240.0 | 120 | 120 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 250.0 | 120 | 118 | 1190 | 37 | 29 | | 26 | | 26 | 21 |
| 260.0 | 120 | 118 | 1190 | 37 | 29 | | 26 | | 26 | 21 |
| 270.0 | 118 | 122 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 280.0 | 118 | 122 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 290.0 | 118 | 122 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 300.0 | 118 | 122 | 1200 | 37 | 30 | | 26 | | 26 | 22 |
| 310.0 | 110 | 120 | 1150 | 35 | | 31 | 25 | | 25 | 21 |
| 320.0 | 110 | 120 | 1150 | 35 | | 31 | 25 | | 25 | 21 |
| 330.0 | 110 | 120 | 1150 | 35 | | 31 | 25 | | 25 | 21 |
| 340.0 | 110 | 120 | 1150 | 35 | | 31 | | 31 | 25 | 21 |
| 350.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 360.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 370.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 380.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 390.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 400.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 410.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 420.0 | 108 | 125 | 1165 | 36 | | 31 | | 31 | 26 | 21 |
| 430.0 | 100 | 116 | 1080 | 33 | | 29 | | 29 | 24 | 19 |
| 440.0 | 100 | 116 | 1080 | 33 | | 29 | | 29 | 24 | 19 |
| 450.0 | 100 | 116 | 1080 | 33 | | 29 | | 29 | 24 | 19 |
| 460.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 470.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 480.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 490.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 500.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 510.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 520.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 530.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 540.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 550.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 560.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 570.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 580.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 590.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 600.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 610.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 620.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 630.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |

| DEPTH | SPM1 | SPM2 | FLOW RATE | DC/ OH | DC/ CSG | HW/ OH | HW/ CSG | DP/ OH | DP/ CSG | DP/ RIS |
|---|---|---|---|---|---|---|---|---|---|---|
| 640.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 650.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 660.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 670.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 680.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 690.0 | 110 | 124 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 700.0 | 124 | 110 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 710.0 | 124 | 100 | 1120 | 35 | | 30 | | 30 | 25 | 20 |
| 720.0 | 124 | 100 | 1120 | 35 | | 30 | | 30 | 25 | 20 |
| 730.0 | 124 | 100 | 1120 | 35 | | 30 | | 30 | 25 | 20 |
| 740.0 | 124 | 110 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 750.0 | 124 | 110 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 760.0 | 124 | 110 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 770.0 | 124 | 110 | 1170 | 36 | | 31 | | 31 | 26 | 21 |
| 780.0 | 105 | 122 | 1135 | 35 | | 30 | | 30 | 25 | 20 |
| 786.0 | 105 | 122 | 1135 | 35 | | 30 | | 30 | 25 | 20 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 3 | IADC CODE | 114 | INTERVAL | 786.0- 1362.0 |
| HTC X3A | | SIZE | 12.250 | NOZZLES | 15 15 15 |
| COST | 1440.00 | TRIP TIME | 3.6 | BIT RUN | 576.0 |
| TOTAL HOURS | 27.35 | TOTAL TURNS | 227640 | CONDITION | T8 B8 G0.750 |

| DEPTH | SPM1 | SPM2 | FLOW RATE | DC/ OH | DC/ CSG | HW/ OH | HW/ CSG | DP/ OH | DP/ CSG | DP/ RIS |
|---|---|---|---|---|---|---|---|---|---|---|
| 790.0 | 76 | 84 | 800 | 69 | 66 | | 46 | | 46 | 14 |
| 800.0 | 76 | 84 | 800 | 69 | 66 | | 46 | | 46 | 14 |
| 810.0 | 76 | 84 | 800 | 69 | 66 | | 46 | | 46 | 14 |
| 820.0 | 76 | 84 | 800 | 69 | 66 | | 46 | | 46 | 14 |
| 830.0 | 82 | 83 | 825 | 72 | 68 | | 48 | | 48 | 15 |
| 840.0 | 82 | 83 | 825 | 72 | 68 | | 48 | | 48 | 15 |
| 850.0 | 82 | 83 | 825 | 72 | 68 | | 48 | | 48 | 15 |
| 860.0 | 82 | 83 | 825 | 72 | 68 | | 48 | | 48 | 15 |
| 870.0 | 82 | 83 | 825 | 72 | 68 | | 48 | | 48 | 15 |
| 880.0 | 82 | 83 | 825 | 72 | 68 | | 48 | | 48 | 15 |
| 890.0 | 82 | 83 | 825 | 72 | 68 | | 48 | | 48 | 15 |
| 900.0 | 80 | 83 | 815 | 71 | 68 | | 47 | | 47 | 15 |
| 910.0 | 80 | 83 | 815 | 71 | 68 | | 47 | | 47 | 15 |
| 920.0 | 80 | 83 | 815 | 71 | 68 | | 47 | | 47 | 15 |
| 930.0 | 80 | 83 | 815 | 71 | 68 | | 47 | | 47 | 15 |
| 940.0 | 80 | 83 | 815 | 71 | 68 | | 47 | | 47 | 15 |
| 950.0 | 80 | 83 | 815 | 71 | | 49 | 47 | | 47 | 15 |
| 960.0 | 80 | 83 | 815 | 71 | | 49 | 47 | | 47 | 15 |
| 970.0 | 76 | 80 | 780 | 68 | | 47 | 45 | | 45 | 14 |
| 980.0 | 72 | 68 | 700 | 61 | | 42 | 40 | | 40 | 13 |
| 990.0 | 88 | 0 | 440 | 38 | | 26 | 25 | | 25 | |
| 1000.0 | 50 | 0 | 250 | 22 | | 15 | 14 | | 14 | 4 |
| 1010.0 | 76 | 76 | 760 | 66 | | 45 | 44 | | 44 | 14 |
| 1020.0 | 84 | 0 | 420 | 36 | | 25 | 24 | | 24 | 8 |
| 1030.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1040.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1050.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1060.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1070.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1080.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1090.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1100.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1110.0 | 76 | 64 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1120.0 | 63 | 80 | 715 | 62 | | 43 | | 43 | 41 | 13 |
| 1130.0 | 63 | 80 | 715 | 62 | | 43 | | 43 | 41 | 13 |
| 1140.0 | 63 | 80 | 715 | 62 | | 43 | | 43 | 41 | 13 |
| 1150.0 | 63 | 80 | 715 | 62 | | 43 | | 43 | 41 | 13 |
| 1160.0 | 65 | 80 | 725 | 63 | | 43 | | 43 | 42 | 13 |
| 1170.0 | 61 | 75 | 680 | 59 | | 41 | | 41 | 39 | 12 |
| 1180.0 | 140 | 0 | 700 | 61 | | 42 | | 42 | 40 | 13 |
| 1190.0 | 70 | 75 | 725 | 63 | | 43 | | 43 | 42 | 13 |
| 1200.0 | 70 | 76 | 730 | 63 | | 44 | | 44 | 42 | 13 |
| 1210.0 | 72 | 75 | 735 | 64 | | 44 | | 44 | 43 | 13 |

| DEPTH | SPM1 | SPM2 | FLOW RATE | DC/ OH | DC/ CSG | HW/ OH | HW/ CSG | DP/ OH | DP/ CSG | DP/ RIS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1220.0 | 72 | 75 | 735 | 64 | | 44 | | 44 | 43 | 13 |
| 1230.0 | 72 | 75 | 735 | 64 | | 44 | | 44 | 43 | 13 |
| 1240.0 | 72 | 75 | 735 | 64 | | 44 | | 44 | 43 | 13 |
| 1250.0 | 72 | 70 | 710 | 62 | | 42 | | 42 | 41 | 13 |
| 1260.0 | 72 | 70 | 710 | 62 | | 42 | | 42 | 41 | 13 |
| 1270.0 | 72 | 70 | 710 | 62 | | 42 | | 42 | 41 | 13 |
| 1280.0 | 72 | 70 | 710 | 62 | | 42 | | 42 | 41 | 13 |
| 1290.0 | 72 | 70 | 710 | 62 | | 42 | | 42 | 41 | 13 |
| 1300.0 | 72 | 70 | 710 | 62 | | 42 | | 42 | 41 | 13 |
| 1310.0 | 72 | 70 | 710 | 62 | | 42 | | 42 | 41 | 13 |
| 1320.0 | 68 | 52 | 600 | 52 | | 36 | | 36 | 35 | 11 |
| 1330.0 | 70 | 75 | 725 | 63 | | 43 | | 43 | 42 | 13 |
| 1340.0 | 70 | 75 | 725 | 63 | | 43 | | 43 | 42 | 13 |
| 1350.0 | 70 | 75 | 725 | 63 | | 43 | | 43 | 42 | 13 |
| 1360.0 | 70 | 75 | 725 | 63 | | 43 | | 43 | 42 | 13 |
| 1362.0 | 70 | 75 | 725 | 63 | | 43 | | 43 | 42 | 13 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 4 | IADC CODE | 135 | INTERVAL | 1362.0- 1485.0 |
| HTC XDG | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1440.00 | TRIP TIME | 4.0 | BIT RUN | 123.0 |
| TOTAL HOURS | 12.50 | TOTAL TURNS | 100438 | CONDITION | T7 B4 G0.250 |

| DEPTH | SPM1 | SPM2 | FLOW RATE | DC/ OH | DC/ CSG | HW/ OH | HW/ CSG | DP/ OH | DP/ CSG | DP/ RIS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1370.0 | 64 | 61 | 625 | 54 | | 37 | | 37 | 36 | 11 |
| 1380.0 | 64 | 61 | 625 | 54 | | 37 | | 37 | 36 | 11 |
| 1390.0 | 64 | 61 | 625 | 54 | | 37 | | 37 | 36 | 11 |
| 1400.0 | 65 | 62 | 635 | 55 | | 38 | | 38 | 37 | 11 |
| 1410.0 | 61 | 67 | 640 | 56 | | 38 | | 38 | 37 | 11 |
| 1420.0 | 61 | 66 | 635 | 55 | | 38 | | 38 | 37 | 11 |
| 1430.0 | 61 | 66 | 635 | 55 | | 38 | | 38 | 37 | 11 |
| 1440.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1450.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1460.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1470.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1480.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1485.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 5 | IADC CODE | 217 | INTERVAL | 1485.0- 1605.6 |
| HTC JD4 | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 1740.00 | TRIP TIME | 4.6 | BIT RUN | 120.6 |
| TOTAL HOURS | 12.88 | TOTAL TURNS | 113601 | CONDITION | T7 B8 G0.188 |

| DEPTH | SPM1 | SPM2 | FLOW RATE | DC/ OH | DC/ CSG | HW/ OH | HW/ CSG | DP/ OH | DP/ CSG | DP/ RIS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1490.0 | 55 | 70 | 625 | 54 | | 37 | | 37 | 36 | 11 |
| 1500.0 | 63 | 67 | 650 | 56 | | 39 | | 39 | 38 | 12 |
| 1510.0 | 63 | 67 | 650 | 56 | | 39 | | 39 | 38 | 12 |
| 1520.0 | 63 | 67 | 650 | 56 | | 39 | | 39 | 38 | 12 |
| 1530.0 | 63 | 67 | 650 | 56 | | 39 | | 39 | 38 | 12 |
| 1540.0 | 63 | 65 | 640 | 56 | | 38 | | 38 | 37 | 11 |
| 1550.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1560.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1570.0 | 62 | 67 | 645 | 56 | | 39 | | 39 | 37 | 12 |
| 1580.0 | 62 | 66 | 640 | 56 | | 38 | | 38 | 37 | 11 |
| 1590.0 | 65 | 65 | 650 | 56 | | 39 | | 39 | 38 | 12 |
| 1600.0 | 65 | 65 | 650 | 56 | | 39 | | 39 | 38 | 12 |
| 1605.6 | 65 | 65 | 650 | 56 | | 39 | | 39 | 38 | 12 |

| | | | | | |
|---|---|---|---|---|---|
| BIT NUMBER | 6 | IADC CODE | 517 | INTERVAL | 1605.6- 1723.0 |
| HTC J22 | | SIZE | 12.250 | NOZZLES | 13 13 13 |
| COST | 5240.00 | TRIP TIME | 4.6 | BIT RUN | 117.4 |
| TOTAL HOURS | 6.95 | TOTAL TURNS | 48561 | CONDITION | T2 B2 G0.000 |

| DEPTH | SPM1 | SPM2 | FLOW RATE | DC/ OH | DC/ CSG | HW/ OH | HW/ CSG | DP/ OH | DP/ CSG | DP/ RIS |
|---|---|---|---|---|---|---|---|---|---|---|
| 1610.0 | 65 | 65 | 650 | 56 | | 39 | | 39 | 38 | 12 |
| 1620.0 | 63 | 65 | 640 | 56 | | 38 | | 38 | 37 | 11 |
| 1630.0 | 63 | 65 | 640 | 56 | | 38 | | 38 | 37 | 11 |
| 1640.0 | 63 | 63 | 630 | 55 | | 38 | | 38 | 36 | 11 |
| 1650.0 | 63 | 63 | 630 | 55 | | 38 | | 38 | 36 | 11 |
| 1660.0 | 63 | 63 | 630 | 55 | | 38 | | 38 | 36 | 11 |
| 1670.0 | 63 | 63 | 630 | 55 | | 38 | | 38 | 36 | 11 |
| 1680.0 | 63 | 64 | 635 | 55 | | 38 | | 38 | 37 | 11 |
| 1690.0 | 63 | 64 | 635 | 55 | | 38 | | 38 | 37 | 11 |
| 1700.0 | 62 | 63 | 625 | 54 | | 37 | | 37 | 36 | 11 |
| 1710.0 | 62 | 63 | 625 | 54 | | 37 | | 37 | 36 | 11 |
| 1720.0 | 64 | 64 | 640 | 56 | | 38 | | 38 | 37 | 11 |
| 1723.0 | 55 | 55 | 550 | 48 | | 33 | | 33 | 32 | 10 |

PE603574

This is an enclosure indicator page.
The enclosure PE603574 is enclosed within the container PE906231 at this location in this document.

The enclosure PE603574 has the following characteristics:

| | |
|---|---|
| ITEM_BARCODE | = PE603574 |
| CONTAINER_BARCODE | = PE906231 |
| NAME | = Drill Data Log |
| BASIN | = GIPPSLAND |
| PERMIT | = VIC/P1 |
| TYPE | = WELL |
| SUBTYPE | = MUD_LOG |
| DESCRIPTION | = Drill Data Log for Palmer-1 containing Rate of Penetration, Mud Gas, Corrected 'd' Exponent |
| REMARKS | = |
| DATE_CREATED | = 1/12/81 |
| DATE_RECEIVED | = 29/04/82 |
| W_NO | = W751 |
| WELL_NAME | = PALMER-1 |
| CONTRACTOR | = CORE LABORATORIES AUSTRALIA LTD |
| CLIENT_OP_CO | = ESSO AUSTRALIA LIMITED |

(Inserted by DNRE - Vic Govt Mines Dept)

PE603575

This is an enclosure indicator page.
The enclosure PE603575 is enclosed within the container PE906231 at this location in this document.

The enclosure PE603575 has the following characteristics:

| | |
|---|---|
| ITEM_BARCODE | = PE603575 |
| CONTAINER_BARCODE | = PE906231 |
| NAME | = Geoplot Log |
| BASIN | = GIPPSLAND |
| PERMIT | = VIC/P1 |
| TYPE | = WELL |
| SUBTYPE | = WELL_LOG |
| DESCRIPTION | = Geoplot for Palmer-1 containing incremental and cumulative cost and pore pressure. |
| REMARKS | = |
| DATE_CREATED | = 1/12/81 |
| DATE_RECEIVED | = 29/04/82 |
| W_NO | = W751 |
| WELL_NAME | = PALMER-1 |
| CONTRACTOR | = CORE LABORATORIES AUSTRALIA LTD |
| CLIENT_OP_CO | = ESSO AUSTRALIA LIMITED |

(Inserted by DNRE - Vic Govt Mines Dept)

PE603576

This is an enclosure indicator page.
The enclosure PE603576 is enclosed within the container PE906231 at this location in this document.

The enclosure PE603576 has the following characteristics:

| | |
|---|---|
| ITEM_BARCODE | = PE603576 |
| CONTAINER_BARCODE | = PE906231 |
| NAME | = Temperature Log |
| BASIN | = GIPPSLAND |
| PERMIT | = VIC/P1 |
| TYPE | = WELL |
| SUBTYPE | = WELL_LOG |
| DESCRIPTION | = Temperature Log for Palmer-1 |
| REMARKS | = |
| DATE_CREATED | = 1/12/81 |
| DATE_RECEIVED | = 29/04/82 |
| W_NO | = W751 |
| WELL_NAME | = PALMER-1 |
| CONTRACTOR | = CORE LABORATORIES AUSTRALIA LTD |
| CLIENT_OP_CO | = ESSO AUSTRALIA LIMITED |

(Inserted by DNRE - Vic Govt Mines Dept)

PE603577

This is an enclosure indicator page.
The enclosure PE603577 is enclosed within the container PE906231 at this location in this document.

The enclosure PE603577 has the following characteristics:

| | |
|---|---|
| ITEM_BARCODE | = PE603577 |
| CONTAINER_BARCODE | = PE906231 |
| NAME | = Pressure Log |
| BASIN | = GIPPSLAND |
| PERMIT | = VIC/P1 |
| TYPE | = WELL |
| SUBTYPE | = WELL_LOG |
| DESCRIPTION | = Pressure Log for Palmer-1 |
| REMARKS | = |
| DATE_CREATED | = 1/12/81 |
| DATE_RECEIVED | = 29/04/82 |
| W_NO | = W751 |
| WELL_NAME | = PALMER-1 |
| CONTRACTOR | = CORE LABORATORIES AUSTRALIA LTD |
| CLIENT_OP_CO | = ESSO AUSTRALIA LIMITED |

(Inserted by DNRE - Vic Govt Mines Dept)

PE603578

This is an enclosure indicator page.
The enclosure PE603578 is enclosed within the container PE906231 at this location in this document.

The enclosure PE603578 has the following characteristics:

| | |
|---|---|
| ITEM_BARCODE | = PE603578 |
| CONTAINER_BARCODE | = PE906231 |
| NAME | = Cost Analysis Log |
| BASIN | = GIPPSLAND |
| PERMIT | = VIC/P1 |
| TYPE | = WELL |
| SUBTYPE | = WELL_LOG |
| DESCRIPTION | = Cost Analysis Log for Palmer-1 |
| REMARKS | = |
| DATE_CREATED | = 1/12/81 |
| DATE_RECEIVED | = 29/04/82 |
| W_NO | = W751 |
| WELL_NAME | = PALMER-1 |
| CONTRACTOR | = CORE LABORATORIES AUSTRALIA LTD |
| CLIENT_OP_CO | = ESSO AUSTRALIA LIMITED |

(Inserted by DNRE - Vic Govt Mines Dept)

PE603579

This is an enclosure indicator page.
The enclosure PE603579 is enclosed within the container PE906231 at this location in this document.

The enclosure PE603579 has the following characteristics:

| | |
|---|---|
| ITEM_BARCODE | = PE603579 |
| CONTAINER_BARCODE | = PE906231 |
| NAME | = Drilling Parameter Log |
| BASIN | = GIPPSLAND |
| PERMIT | = VIC/P1 |
| TYPE | = WELL |
| SUBTYPE | = WELL_LOG |
| DESCRIPTION | = Drilling Parameter Log for Palmer-1 |
| REMARKS | = |
| DATE_CREATED | = 1/12/81 |
| DATE_RECEIVED | = 29/04/82 |
| W_NO | = W751 |
| WELL_NAME | = PALMER-1 |
| CONTRACTOR | = CORE LABORATORIES AUSTRALIA LTD |
| CLIENT_OP_CO | = ESSO AUSTRALIA LIMITED |

(Inserted by DNRE - Vic Govt Mines Dept)

PE603580

This is an enclosure indicator page.
The enclosure PE603580 is enclosed within the container PE906231 at this location in this document.

The enclosure PE603580 has the following characteristics:

| | |
|---|---|
| ITEM_BARCODE | = PE603580 |
| CONTAINER_BARCODE | = PE906231 |
| NAME | = Grapholog (Mud Log) |
| BASIN | = GIPPSLAND |
| PERMIT | = VIC/P1 |
| TYPE | = WELL |
| SUBTYPE | = MUD_LOG |
| DESCRIPTION | = Grapholog Mud Log for Palmer-1 |
| REMARKS | = |
| DATE_CREATED | = 1/12/81 |
| DATE_RECEIVED | = 29/04/82 |
| W_NO | = W751 |
| WELL_NAME | = PALMER-1 |
| CONTRACTOR | = CORE LABORATORIES AUSTRALIA LTD |
| CLIENT_OP_CO | = ESSO AUSTRALIA LIMITED |

(Inserted by DNRE - Vic Govt Mines Dept)