

COMPANY: ESSO STANDARD OIL (AUSTRALIA) LTD.  
 WELL: FLATHEAD - 1  
 COUNTY: WILDGAT  
 VICTORIA  
 LOCATION: LAT: 38° 01' 21" S. ELEVATION: 31' KB  
 LONG: 148° 32' 04" E.

DEPTH LOGGED FROM: 865' TO: 3494' FT  
 DATE LOGGED: 29 APRIL 1969 TO: 10 MAY 1969  
 DRILL CHIEF: MIDDLETON FILE NO: FL-155-12L  
 DRILL FLUID: FRESH WATER GEL 865' - 3494' FT

DEPT. NAT. RES. & ENV. PE603210

ABBREVIATIONS

**RESISTIVITY, OHM-METERS**  
 Rm MUD  
 Rmc MUD CAKE  
 Rmf MUD FILTRATE

**MUD DATA**  
 CK = CAKE THICKNESS 32nds  
 V = VISCOSITY API SECONDS  
 F = FILTRATE API CCS  
 W = WEIGHT (LBS/US GAL)  
 S = SALINITY, ppm Cl NaCl

LITHOLOGY

SAND, SALT, GYAL, MARL, CLAY, SILT, SHALE, LIMESTONE, CHALK, SILTSTONE

HYDROCARBON ANALYSIS

**CHROMATOGRAPHIC**  
 Drilling Mud Gas  
 Methane ----- Butane ----- 4  
 Ethane ----- Pentane ----- 5  
 Propane ----- Hexane ----- 6

**OIL SHOW**  
 Drilling Mud Gas  
 Methane -----  
 Pentane -----  
 Hexane -----

**HOT WIRE**  
 CO<sub>2</sub> -----  
 H<sub>2</sub>S -----  
 Drilling Mud Gas  
 Methane -----  
 Pentane -----  
 Hexane -----

REMARKS

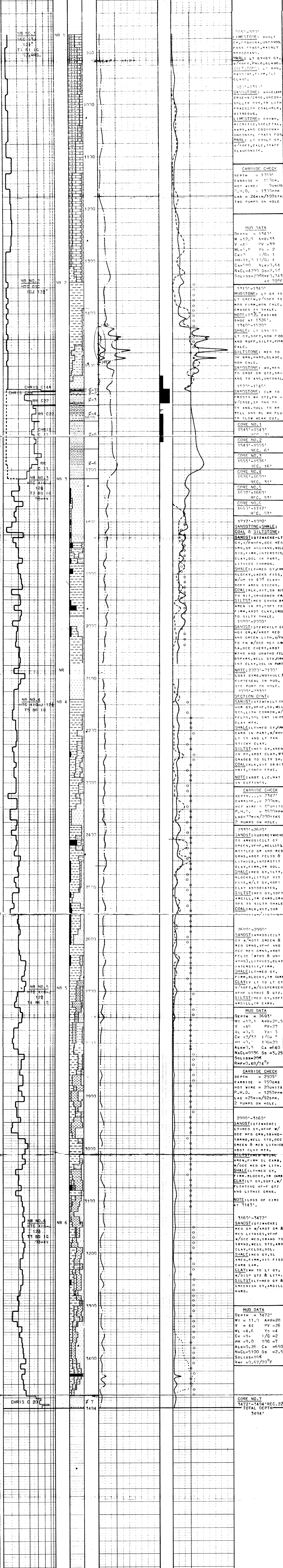
FORMATION DESCRIPTION, MUD DATA, DRILL STEM TESTS, etc.

VERTICAL SCALE  
 2" = 100'

**DRILLING RATE**  
 MIN/FT   
 FT/HR

DRILLING  
 REAMING  
 CORING

DRILLING ACTIVITY



NB NO. 1  
 REC S34  
 12 1/4  
 T1 BS IG  
 5 1/4 HRS.

NB NO. 2  
 HTC Q3C  
 12 1/4

NB NO. 3  
 HTC X1G  
 12 1/4  
 T2 BS IG  
 2 1/2 HRS.

NB NO. 4  
 HTC X1G-J  
 12 1/4  
 T5 BS IG

NB NO. 5  
 HTC X1G-J  
 12 1/4  
 T4 BS IG

NB NO. 6  
 HTC X1G  
 12 1/4  
 T3 BS IG  
 1 1/2 HRS.

CHRIS C 20

NOTE: 20" CASING  
 SHOE AT 827'.  
 CEMENT TO 865'

1065'-1090'  
 LIMESTONE: WH-LT  
 GY, COQUINA, UNCONSOL  
 POSS FRAGS, MAINLY  
 PYZOZANES.  
 MARL: LT GR-GY GY,  
 V/REF, FALC, GLAUC.  
 SILTSTONE: LT BRN,  
 MASSIVE, FIRM, SLT  
 GLAUC.

1120'-1131'  
 SANDSTONE: WH-CLEAR  
 CRSE-V/CRSE, UNCON-  
 SOL, TR PYR, TR LITH  
 FRAGS; TR COAL-RLK,  
 VITREOUS.  
 LIMESTONE: GY-WH,  
 MICRITIC, SKELETAL,  
 HARD, AND COQUINA-  
 UNCONSOL FRAGS FOR  
 MARL: LT GY-LT GR,  
 V/SOFT, CALC, FRAGS  
 GLAUCONITE.

CARRIAGE CHECK  
 DEPTH = 1069'  
 CARRIAGE = 150CM.  
 HOT WIRE = 7 UNITS  
 P.H.D. = 1300PPM  
 LAG = 24MIN/100STK  
 TWO PUMPS ON HOLE

MUD DATA  
 DEPTH = 1340'  
 WT = 12.0 APV = 33  
 V = 45 PV = 32  
 WL = 5.0 YD = 2  
 CK = 2 1/G = 1  
 PH = 11.0 1/G = 1  
 CA = 590 ALK = 0.64  
 NACL = 4290 SD = 2.5  
 SOLIDS = 29.4 RWF = 7.43  
 AT 70°F

1310'-1341'  
 MUDSTONE: LT GY TO  
 LT GRN, V/SOFT TO  
 MOD FIRM, NON CALC.  
 GRADES TO SHALE.  
 NOTE: 1 1/2" CASING  
 SHOE AT 1326'.  
 1340'-1520'  
 SHALE: LT GRN TO  
 LT GY, SOFT, NON FISS  
 AND RUFF, SILTY, FIRM  
 CALC.  
 SILTSTONE: MED TO  
 DK BRN, HARD, GLAUC,  
 NON CALC.  
 SANDSTONE: WH, MED  
 TO CRSE GR QTZ, SR-  
 ANG TO ANG, UNCONSOL

1520'-1545'  
 SANDSTONE: CLR TO  
 FROSTY WH QTZ, FN -  
 V/CRSE, SR ANG TO  
 SR ANG, DULL TO RR  
 YELL AND BL WH FLU  
 TR SLOW WEAK CUT.

CORE NO. 1  
 1545'-1549'  
 REC. 2'

CORE NO. 2  
 1549'-1555'  
 REC. 6'

CORE NO. 3  
 1555'-1576'  
 REC. 16'

CORE NO. 4  
 1576'-1607'  
 REC. 31'

CORE NO. 5  
 1607'-1660'  
 REC. 53'

CORE NO. 6  
 1660'-1717'  
 REC. 57'

1717'-1790'  
 SANDSTONE; SHALE;  
 COAL & SILTSTONE;  
 SANDS: QTZ WACKE-LT  
 GY, V/FN-FN, OCC MED  
 GRN, SR ANG-ANG, WELL  
 STD, FIRM, INTERSTIT  
 CLAY, DOL IN PART,  
 LITHICS COMMON.  
 SHALE: LT-MED GY, FIRM  
 BLOCKY, LACKS FISS,  
 W/UP TO 4% CLAY-  
 SOFT AREN STICKY.  
 COAL: BLK, VIT, SB BIT  
 TO RT, SR-CONCH FR.  
 SILTST: MED GY-DK BR  
 AREN IN PT, SOFT TO  
 FIRM, ARDT CLAY, CRDS  
 TO SILTY SHALE.  
 1990'-2000'  
 SANDS: QTZ WACKE-LT GY  
 -GY GR, W/ARDT RED  
 AND GREEN LITH, V/FN  
 TO FN W/OCC MED GRN  
 SA, OCC CERT, ARDT  
 WTHD AND UNWTHD FEL  
 DSPARS, WELL STD, FIRM  
 INT CLAY, DOL IN PART.  
 NOTE: 2077'-2100'  
 FIRESEAL IN MUD,  
 ONE PUMP ON HOLE.  
 2000'-2330'

SECTION CONT:  
 SANDS: QTZ WACKE-LT GY  
 -GM GY, VF-F, SA, WELL  
 STD, LITH COMMON, W/  
 FELDS, DOL CMT IN PT  
 CLAY MTX.  
 SHALE: LT-MED GY, FIRM  
 CARR IN PART, W/WH-  
 LT GY AND LT TAN  
 STICKY CLAY.  
 SILTST: MED GY, AREN  
 IN PT, ARDT CLAY, FT  
 GRADES TO SLTY SH.  
 COAL: BLK, VIT, SB BIT  
 -BIT, CONCH FRAC.  
 NOTE: ARDT L.C. MAT  
 IN CUTTINGS.

CARRIAGE CHECK  
 DEPTH = 2347'  
 CARRIAGE = 200CM.  
 HOT WIRE = 36 UNITS  
 P.H.D. = 3600PPM  
 LAG = 22MIN/100STK  
 2 PUMPS ON HOLE.

2330'-2620'  
 SANDS: SUBGREY WACKE  
 TO ANKOSIC; LT GY  
 GREEN, VF-F, WELL STD,  
 MOTTLED GR AND RED  
 GRNS, ARDT FELDS &  
 LITHICS, INTERSTIT  
 CLAY, FIRM, TR DOL.  
 SHALE: MED GY, SILTY,  
 BLOCKY, LITTLE VLS,  
 FISS, W/LT GY, SOFT  
 CLAY ASSOCIATED,  
 SILTST: MED GY, SOFT  
 ARGILL, TR CARB, GRA  
 DES TO SILTY SHALE  
 COAL: BLK, VIT, SUB

2690'-2990'  
 SANDS: LARKOSIC; LT  
 GY W/MOTT GREEN &  
 MED GRNS, VF-F AND  
 OCC MED GRNS, ARDT  
 FELDS (WTHD & UN-  
 WTHD), LITHICS, CLAY  
 INTERSTIT, FIRM.  
 SHALE: LT-MED GY,  
 FIRM, BLOCKY, TR CARB  
 CLAY: V LT TO LT GY  
 V/SOFT, W/DISPERSED  
 VF-F LITHIC & QTZ.  
 SILTST: MED GY, SOFT  
 ARGILL, TR CARB.

MUD DATA  
 DEPTH = 2693'  
 WT = 12.1 APV = 29.5  
 V = 45 PV = 27  
 WL = 4.3 YD = 3  
 CK = 2/3 1/G = 2  
 PH = 7.0 1/G = 2  
 ALK = 0.3 CA = 640  
 NACL = 9336 SD = 3.25  
 SOLIDS = 20%  
 RWF = 0.48/70°F

CARRIAGE CHECK  
 DEPTH = 2909'  
 CARRIAGE = 150GMS  
 HOT WIRE = 20 UNITS  
 P.H.D. = 1250PPM  
 LAG = 25MIN/92SPM  
 2 PUMPS ON HOLE.

2990'-3160'  
 SANDS: QTZ WACKE;  
 LT-MED GY, VF-F W/  
 OCC MED GRN, SBANG  
 SBRND, WELL STD, OCC  
 GREEN & RED LITHICS  
 ARDT CLAY MTX.  
 SILTST: MED GY, FIRM  
 AREN, FIRM SL CARB,  
 W/OCC MED GR LITH.  
 SHALE: LT-MED GY,  
 FIRM, BLOCKY, TR CARB  
 CLAY: LT GY, SOFT, W/  
 FLOATING VF-F QTZ  
 AND LITHIC GRNS.

NOTE: LOSS OF CIRC  
 AT 3143'.

3160'-3472'  
 SANDS: QTZ WACKE;  
 MED GY W/ARDT CR &  
 RED LITHICS, VF-F  
 W/OCC MED, SBANG TO  
 SBRND, WELL STD, ARD  
 CLAY, FELDS, DOL.  
 SHALE: MED GY, SL  
 AREN, FIRM, VLS FISS  
 CARB LAM.  
 CLAY: WH TO LT GY,  
 W/DISP QTZ & LITH.  
 SILTST: LT-MED GY &  
 GREENISH GY, ARGILL  
 HARD.

MUD DATA  
 DEPTH = 3472'  
 WT = 11.0 APV = 28  
 V = 44 PV = 26  
 WL = 4.6 YD = 4  
 CK = 1+ 1/G = 2  
 PH = 9.0 1/G = 7  
 ALK = 0.26 CA = 650  
 NACL = 5100 SD = 2.5  
 SOLIDS = 16%  
 RWF = 0.67/70°F

CORE NO. 7  
 3472'-3494' REC. 22'  
 TOTAL DEPTH  
 3494'