

COMPANY MINORA RESOURCES NL DEPTH LOGGED FROM 341m  
 RIG ATCO A2 TO 3595.3m  
 WELL WINDERMERE No.2 DATE LOGGED FROM 12/3/89  
 FIELD OTWAY BASIN, WILDCAT TO 14/4/89  
 COUNTRY VICTORIA, AUSTRALIA  
 CO-ORDINATES Lat: 38°14' 10.59" S  
 Longt: 142° 0' 17.9" E KB: 51-65m  
 GL: 46-14m

**GEARHART PTY. LTD.**  
 Geodata Services  
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LITHOLOGY  
 CEMENT SANDSTONE SILTSTONE CLAYSTONE  
 MARL LIMESTONE DOLOMITE VOLCANICS  
 CARBONACEOUS PYRITE LITHICS FOSSILS  
 MICA CHLORITE FELDSPAR CALCITE

LOGGING ENGINEERS  
 1 NEIL MACKAY  
 2 TONY FORD  
 3 BERNIE KAMINSKY  
 4 JIM BOWERING

ABBREVIATIONS  
 NB New bit SPM Pump pressure  
 NCB New core bit SPM Strokes per minute  
 CR Coring CR Circulated returns  
 CS Casing shoe PR Poor returns  
 SWC Sidewall cores NR No returns  
 EL Electric log TG Trip gas  
 RRB Rerun bit CG Connection gas  
 WOB Weight on bit D Directional survey  
 RPM Revolutions per minute WT Wiper trip

CHROMATOGRAPH SHIMADZU  
 TOTAL GAS RECORDER SHIMADZU  
 H<sub>2</sub>S RECORDER GENERAL MONITORS  
 CO<sub>2</sub> ANALYSER ADC TYPE SS1  
 INSTRUMENTS CHECKED DAILY  
 24 HRS. LOGGING SERVICE

MUD TYPE Variable details specified in drilling rate column

MUD DATA

W Weight lb/gal	CK Cake thickness 32nd inch	MATRIX POROSITY	VUGULAR POROSITY	BIT SIZE	HOLE DEPTH	CASING SIZE	CASING SHOE
MG Mud gradient psi/1000 ft	S Salinity	< 10%	< 10%	17.5"	341m	13.375"	313.93m
PL Plastic viscosity sec/ft	SD Sand content % by volume	10-30%	> 10%	12.25"	1868m	9.625"	1867m
VP Yield point lbs/100 ft	WL Water loss % by volume	> 10%	> 10%	8.5"	3595.3m		
GEL Gel strength lbs/100 ft	SOL Solids content % by volume	Mixed porosity	Visibly interconnected vugs				
PH pH	AL Alkalinity of filtrate	> 10%	> 10%				
F Filtrate API ml/30 minutes	GY Gypsum total/dissolved						

DRILLING & CORING DATA

DRILLING RATE & DATA (min/m)

CUTTINGS LITHOLOGY

DEPTH (m)

INTERPRETIVE FORMATION LOG

DITCH GAS CHROMATOGRAPHIC ANALYSIS

CUTTINGS GAS (Units)

OIL (uv & TRCL Cut)

LITHOLOGY DESCRIPTION MUD DATA & REMARKS

DRILLING & CORING DATA	DRILLING RATE & DATA (min/m)	CUTTINGS LITHOLOGY	DEPTH (m)	INTERPRETIVE FORMATION LOG	DITCH GAS CHROMATOGRAPHIC ANALYSIS	CUTTINGS GAS (Units)	OIL (uv & TRCL Cut)	LITHOLOGY DESCRIPTION MUD DATA & REMARKS
13 3/8" Casing shoe at 313.93m WINDERMERE No.2 SPUDDED 2300 hrs on 9/3/89			350		IGAS Units 10 200 Chrom ppm 2K	100		MARL: med gy, med bl/gy, frm-occ mod hd, sb blk, calc ip. LIMESTONE: wh, lt gy, buff, microxline, pred foss, mod hd, blk.
NB 12 1/4" VAREL L135 Jets 3x16 in. 34m Mtg 85.5m in T7 B5 G1/8			400		NIL GAS			SANDSTONE: lt gy, wh, mlky, f-occ med gr, mod srt, sb ang-sb rnd, sil/occ calc cmt, wh arg mtx, mod hd-frt pr vis $\emptyset$ , n/s. MARL: as above. CLAYSTONE: med gy, occ silty, frm, sb blk, non calc. VOLCANICS?: blk, frm-occ hd
			450					SANDSTONE: mlky, clr, f-crs gr, pr srt, sb ang-sb rnd, occ sil cmt, sil mtx, occ lse, occ incl banded pyr, inf fr-pr $\emptyset$ , n/s. SILTSTONE: brn, mod dk gy, arg, occ carb, occ pyr, tr foss, frm-occ mod hd, sb blk.
			500					SANDSTONE: pa brn, trns, f-crs gr, pr srt, sb ang, tr sil cmt, pred lse, inf g $\emptyset$ , n/s. SANDSTONE: as above + occ pyr incl. CLAYSTONE: brn, mod dk gy, occ silty, occ pyr, tr foss sft-occ frm, sb fiss-sb blk.
	WOB 20 RPM 120 SPM 55-100 SPP 1550		550		IGAS Units 10 200 Chrom ppm 2K	100		SANDSTONE: clr, pa brn, pred trns, f-med gr, mod v srt, sb rnd-rnd, occ inf arg mtx, pred lse, inf fr $\emptyset$ , n/s. MUD DATA@ 470m W 9 pH 9.5 V 41 Cl 25.5K PV 9 KCL 0.5 YP 17 Sd. 0.25 GEL 10/22 O/W/S 0/96/4
			600					CLAYSTONE: med dk gy, brn gy, v foss, tr sandy tr carb, v sft, sb blk, non calc. SANDSTONE: pa brn, trns, f-med-occ crs gr, pr-occ mod srt, sb ang-sb rnd, occ arg mtx, pred lse, inf fr-s $\emptyset$ , n/s.
			650					SANDSTONE: lt brn gy, occ trns, vf-crs gr, pr srt, ang-sb ang, arg mtx, tr sil cmt, occ pyr inc, tr carb spks, fri-lse, inf pr-occ fr $\emptyset$ , n/s.
			700		Carbide lag check at 700m Theor Ann Vol. 2866Bis Act Ann Vol. 4018Bis Hole: 1138Bis or 39.2% O.G. Pk: 0.03U, Bg. tr MW 8.7 V 41			CLAYSTONE: pred dk gy brn, aren ip, silty ip, occ carb tr foss, frm-sft, sb blk, occ disp, tr calc ip.
	WOB 20 RPM 120 SPM 55-100 SPP 1550		750		TRACE GAS			SANDSTONE: lt-med brn, pred trns, f-med-crs gr, pr srt, ang-occ sb rnd, sil cmt, arg mtx, tr foss, tr glauc, tr pyr, v fri-lse, inf fr $\emptyset$ , n/s. MUD DATA@ 725m W 8.7 Cl 19.5K V 41 Sd 0.25 PV 9 KCL 0.5 YP 15 O/W/S 0/97.5/ F 16.4 5.5
			800		TRACE GAS			SILTSTONE: med-dk gy, arg, tr carb, tr pyr, frm, blk.
			850		NIL GAS			SANDSTONE: lt brn, trns, med-crs gr, mod-occ pr srt, cln, lse, occ pyr nod, inf g $\emptyset$ , n/s. SILTSTONE: med-occ dk gy, arg, tr aren ip, occ pyr, frm-occ mod hd, sb blk.
	WOB 25 RPM 120 SPM 148 PP 1500		900		NIL GAS			SILTSTONE: as above + v pyr rich. CLAYSTONE: brn gy, occ silty, frm-sft, gummy, occ disp, non calc. CLAYSTONE: dk brn gy-occ med gy, occ silty, tr carb, tr pyr, frm-sft, occ gummy, occ sb blk, tr calc ip.
	POH W.T. to Casing shoe		950					SANDSTONE: mlky, clr, f gr, mod srt, sb rnd, cih, lse, inf g $\emptyset$ , n/s. MUD DATA@ 898m W 9.1+ pH 9 V 45 Cl 32K PV 3/16 Sd 0.25 YP 8 KCL 0.2 CK 3 F 8.8 O/W/S 0/95.5/4.5
			950					SANDSTONE: lt gy, lt brn, trns, vf-f gr, pr-mod srt, sb ang-sb rnd, sil cmt, sil mtx, occ lse, inf pr-fr $\emptyset$ , n/s. CLAYSTONE: med gy, occ silty, occ pyr, frm-occ mod hd, sb blk, calc ip. SILTSTONE: med brn gy, arg carb spks, mod hd, sb blk.
			950					DOLOMITE: brn yel/brn, mxln, glauc, mod-v hd, blk. CLAYSTONE: brn blk, tr aren, rr foss, frm-sft, sb

ENCLOSURE 2