

THE SHELL COMPANY OF AUSTRALIA LTD.

BOREHOLE LITHOLOGICAL DESCRIPTION

GRAY

GY 177AL

HOLE TYPE	CORE
EASTING	591,220 M AM GRID
NORTHING	5,402,290 M AM GRID
ELEVATION	480.51 M
TOTAL DEPTH DRILLED	104.84 M
DRILLING STARTED	13/12/82
DRILLING TIME	5 DAYS
CORE SIZE	100.0 MM
HOLE SIZE	200.0 MM
LENGTH CASED	19.50 M
INITIAL WATER LEVEL	
WATER LEVEL AT GEOPHYSICAL LOGGING	
DRILLING FLUID	
DRILLING CONTRACTOR	ASSOCIATED DIAMOND DRILLERS
GEOPHYSICAL LOGGING CONTRACTOR	
LITHOLOGICAL DESCRIPTION BY	P.SANSOM
INFORMATION AVAILABLE :	SAMPLES TAKEN ANALYTICAL DATA LITHOLOGICAL DESCRIPTION
PETROPHYSICAL WIRELINE LOGS RUN :	NIL

\*\*\* FRAME H04\*\*\*

BOREHOLE : GY 177AL

DEPTH TO BASE M	THICKNESS M	REC %	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
*** CHIP DESCRIPTION ***					
20.00	20.00			100% DOLERITE	SCREE.
26.50	6.50			100% SEDIMENTARY ROCK	
*** CORE DESCRIPTION ***					
26.70	0.20	0		CORE LOSS	
26.91	0.21	100		100% MUDSTONE	SILTY, GREY, UNWEATHERED, MODERATELY WEAK ROCK, WITH PLANT REMAINS.
27.04	0.13	100		70% MUDSTONE 30% SANDSTONE, FINE GRAINED	GREY. LENSES, BANDS, LIGHT GREY. UNWEATHERED, MODERATELY WEAK ROCK.
27.43	0.39	100		100% MUDSTONE	GREY, UNWEATHERED, MODERATELY WEAK ROCK.
27.57	0.14	100		80% SILTSTONE 20% MUDSTONE	GREY. BANDS, GREY. UNWEATHERED, MODERATELY WEAK ROCK.
28.27	0.70	100		60% MUDSTONE 40% SILTSTONE	GREY. BANDS, GREY. UNWEATHERED, MODERATELY WEAK ROCK.
TOP OF MT. NICHOLAS MIDDLE 2 : 452.24 M R.L.					
28.55	0.28	100	A1	60% CARBONACEOUS MUDSTONE 40% MUDSTONE	INTERCALATIONS, MUDSTONE, BLACK. CARBONACEOUS, DARK GREY. UNWEATHERED, MODERATELY WEAK ROCK.
28.62	0.07	100	A1	100% CARBONACEOUS MUDSTONE	COALY, DARK GREY, UNWEATHERED, MODERATELY WEAK ROCK.
28.63	0.01	100	A1	100% MUDSTONE	BANDS, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
28.72	0.09	100	A1	100% COAL, HEAVY DULL	BLACK, WITH FRAGMENTS OF PYRITE, UNWEATHERED, MODERATELY WEAK ROCK.
29.00	0.28	100	A2	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
29.06	0.06	100	A2	100% CLAYSTONE	TUFFACEOUS, CREAM, UNWEATHERED, WEAK ROCK.
29.28	0.22	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
29.38	0.10	100	A2	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK, MODERATELY CLOSE JOINT SPACING, JOINTS DIP 80 DEG., TIGHT, PLANAR, SMOOTH DISCONTINUITIES, INFILLED WITH CALCITE.
29.39	0.01	100	A2	100% COAL, BRIGHT	BANDS, BLACK, UNWEATHERED, MODERATELY WEAK ROCK, MODERATELY CLOSE JOINT SPACING, JOINTS DIP 80 DEG., TIGHT, PLANAR, SMOOTH DISCONTINUITIES, INFILLED WITH CALCITE.
29.71	0.32	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK, MODERATELY CLOSE JOINT SPACING, JOINTS DIP 80 DEG., TIGHT, PLANAR, SMOOTH DISCONTINUITIES, INFILLED WITH CALCITE.

DEPTH TO BASE M	THICKNESS M	REC X	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
29.72	0.01	100	A2	60% COAL, BRIGHT 40% COAL, DULL	BLACK. BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
29.83	0.11	100	A2	100% COAL, DULL	GRADING TO, HEAVY DULL COAL, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
29.84	0.01	100	A2	60% TONSTEIN 40% COAL, DULL	GREY. BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
29.85	0.01	100	A2	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
29.86	0.01	100	A2	100% CARBONACEOUS MUDSTONE	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.10	0.24	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.20	0.10	100	A2	100% CARBONACEOUS MUDSTONE	COALY, BADLY BROKEN, BLACK, WITH FRAGMENTS OF PYRITE, UNWEATHERED, MODERATELY WEAK ROCK.
30.28	0.08	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.39	0.11	100	A2	100% COAL, DULL	GRADING TO, HEAVY DULL COAL, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.65	0.26	100	A2	85% COAL, MID LUSTROUS - DULL .15% COAL, DULL WITH FEW BRIGHT BANDS	BLACK. BLACK. WITH FRAGMENTS OF PYRITE, UNWEATHERED, MODERATELY WEAK ROCK.
30.67	0.02	100	A2	100% COAL, BRIGHT WITH NUMEROUS DULL BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.72	0.05	100	A2	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.73	0.01	100	A2	100% CARBONACEOUS MUDSTONE	BANDS, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.78	0.05	100	A2	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
30.82	0.04	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
BASE OF MT. NICHOLAS MIDDLE 2 : THICKNESS= 2.55 M; SAMPLED THICKNESS= 2.55 M					
31.50	0.68	100		100% MUDSTONE	MASSIVE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
*** CHIP DESCRIPTION ***					
100.00	68.50			100% SEDIMENTARY ROCK	UNWEATHERED, MODERATELY WEAK ROCK.
*** CORE DESCRIPTION ***					
100.74	0.74	100		100% SANDSTONE, MEDIUM GRAINED	MASSIVE, LIGHT GREY, UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
100.75	0.01			100% CARBONACEOUS MUDSTONE	BROWN-BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
100.77	0.02			100% COAL, BRIGHT WITH NUMEROUS DULL BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.

DEPTH TO BASE M	THICKNESS M	REC %	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
100.78	0.01			100% CARBONACEOUS MUDSTONE	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
100.81	0.03			100% MUDSTONE	TUFFACEOUS, CREAM, UNWEATHERED, MODERATELY WEAK ROCK.
100.85	0.04			100% CARBONACEOUS MUDSTONE	COALY, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
100.89	0.04			100% MUDSTONE	CARBONACEOUS, DARK GREY, UNWEATHERED, MODERATELY WEAK ROCK.
101.30	0.41			99% MUDSTONE 1% CARBONACEOUS MUDSTONE	MASSIVE, GREY. STREAKS, FRAGMENTS, DARK GREY. UNWEATHERED, MODERATELY WEAK ROCK.
101.37	0.07	0		CORE LOSS	
101.63	0.26	100	T1	100% MUDSTONE	MASSIVE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
101.73	0.10	100	T1	60% MUDSTONE 40% CARBONACEOUS MUDSTONE	INTERCALATIONS, COARSE GRAINED, GREY. STREAKS, LENSES, BROWN-BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
TOP OF MT. NICHOLAS LOWER 2 : 378.78 M R.L.					
101.77	0.04	100	A3	100% CARBONACEOUS MUDSTONE	COALY, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
101.84	0.07	0	A3	CORE LOSS	
101.95	0.11	100	A3	100% COAL, HEAVY DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.07	0.12	100	A3	55% COAL, DULL 25% COAL, DULL WITH FEW BRIGHT BANDS 20% COAL, MID LUSTROUS - DULL	BADLY BROKEN, BLACK. BADLY BROKEN, BLACK. BADLY BROKEN, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
102.13	0.06	100	A3	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.15	0.02	100	A3	100% COAL, BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.30	0.15	100	A3	85% COAL, MID LUSTROUS - DULL 15% COAL, DULL WITH FEW BRIGHT BANDS	BLACK. BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
102.32	0.02	100	A3	100% COAL, BRIGHT WITH FEW DULL BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.37	0.05	100	A3	100% CLAYSTONE	TUFFACEOUS, LIGHT BROWN, UNWEATHERED, MODERATELY WEAK ROCK.
102.41	0.04	100	A3	100% COAL, MID LUSTROUS - DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.43	0.02	100	A3	100% COAL, DULL	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.66	0.23	100	A3	100% COAL, MID LUSTROUS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.68	0.02	100	A3	100% COAL, BRIGHT WITH FEW DULL BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.70	0.02	100	A3	100% COAL, INTERBANDED DULL AND BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.83	0.13	100	A3	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.

DEPTH TO BASE M	THICKNESS M	REC X	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
102.95	0.12	100	A3	100% COAL, DULL	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.05	0.10	100	A3	100% TONSTEIN	CREAM, UNWEATHERED, MODERATELY WEAK ROCK.
103.29	0.24	100	A3	100% COAL, MID LUSTROUS - DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.33	0.04	100	A3	100% COAL, INTERBANDED DULL AND BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.36	0.03	100	A3	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.44	0.08	100	A3	100% COAL, MID LUSTROUS - DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.46	0.02	100	A3	100% TONSTEIN	WHITE, UNWEATHERED, MODERATELY WEAK ROCK.
103.48	0.02	100	A3	100% COAL, MID LUSTROUS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.55	0.07	100	A3	100% COAL, MID LUSTROUS - DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.59	0.04	100	A3	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.72	0.13	100	A3	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.78	0.06	100	A3	100% COAL, BRIGHT WITH NUMEROUS DULL BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.89	0.11	100	A3	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.

BASE OF MT. NICHOLAS LOWER 2 : THICKNESS= 2.16 M; SAMPLED THICKNESS= 2.16 M

104.13	0.24	100	T2	100% MUDSTONE	MASSIVE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
104.32	0.19	100	T2	100% SILTSTONE	GREY, UNWEATHERED, MODERATELY WEAK ROCK.
104.52	0.20	100		100% SILTSTONE	COALY, LAMINAE, GREY, UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
104.84	0.32	0		CORE LOSS	