

THE SHELL COMPANY OF AUSTRALIA LTD.

BOREHOLE LITHOLOGICAL DESCRIPTION

GRAY

GY 177BL

HOLE TYPE	CORE
EASTING	591,226 M AM GRID
NORTHING	5,402,283 M AM GRID
ELEVATION	480.51 M
TOTAL DEPTH DRILLED	104.74 M
DRILLING STARTED	05/01/83
DRILLING TIME	3 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	H. J. STACPOOLE
GEOPHYSICAL LOGGING CONTRACTOR	
LITHOLOGICAL DESCRIPTION BY	P. SANSOM
INFORMATION AVAILABLE :	SAMPLES TAKEN ANALYTICAL DATA LITHOLOGICAL DESCRIPTION
PETROPHYSICAL WIRELINE LOGS RUN :	NIL

DEPTH TO BASE M	THICKNESS M	REC X	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
19.50	19.50			100% DOLERITE	SCREE.
20.00	0.50			100% SEDIMENTARY ROCK	
26.50	6.50			100% SEDIMENTARY ROCK	
*** CORE DESCRIPTION ***					
26.65	0.15	100		98% MUDSTONE 2% SILTSTONE	MASSIVE, GREY. LENSES, LIGHT GREY. UNWEATHERED, WEAK ROCK.
26.74	0.09	100		75% SANDSTONE, FINE GRAINED 25% COAL	LIGHT GREY. LAMINAE, BLACK. UNWEATHERED, WEAK ROCK.
27.10	0.36	100		90% MUDSTONE 10% SANDSTONE, FINE GRAINED	MASSIVE, GREY. BANDS, LENSES, LIGHT GREY. UNWEATHERED, WEAK ROCK.
27.87	0.77	100		95% MUDSTONE 5% SANDSTONE, FINE GRAINED	MASSIVE, GREY. BANDS, LENSES, LIGHT GREY. UNWEATHERED, WEAK ROCK.
27.96	0.09	100		100% MUDSTONE	BADLY BROKEN, GREY, UNWEATHERED, WEAK ROCK.
28.14	0.18	100	T1	100% MUDSTONE	GREY, UNWEATHERED, WEAK ROCK, WIDE JOINT SPACING, JOINTS DIP 45 DEG., TIGHT, PLANAR, SMOOTH DISCONTINUITIES.

TOP OF MT. NICHOLAS MIDDLE 2 : 452.37 M R.L.

28.21	0.07	100	A1	100% COAL, HEAVY DULL	BLACK, UNWEATHERED, WEAK ROCK.
28.31	0.10	100	A1	100% COAL, DULL	BADLY BROKEN, BLACK, UNWEATHERED, WEAK ROCK.
28.36	0.05	100	A1	98% CLAYSTONE 2% COAL	CALCAREOUS, WHITE. STREAKS, BLACK. UNWEATHERED, WEAK ROCK.
28.41	0.05	100	A1	100% CARBONACEOUS MUDSTONE	COALY, BLACK, UNWEATHERED, WEAK ROCK.
28.42	0.01	100	A1	60% CLAYSTONE 40% COAL, HEAVY DULL	BANDS, GREY-GREEN. BLACK. UNWEATHERED, WEAK ROCK.
28.50	0.08	100	A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, WEAK ROCK, WIDE JOINT SPACING, JOINTS DIP 60 DEG., TIGHT, PLANAR, SMOOTH DISCONTINUITIES, INFILLED WITH CALCITE.
28.65	0.15	100	A1	100% COAL, DULL	BLACK, UNWEATHERED, WEAK ROCK.
28.79	0.14	100	A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, WEAK ROCK.
28.80	0.01	100	A1	100% MUDSTONE	BANDS, GREY, UNWEATHERED, WEAK ROCK.

DEPTH TO BASE M	THICKNESS M	REC X	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
*** CORE DESCRIPTION ***					
29.14	0.34	100	A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, WEAK ROCK, MODERATELY CLOSE JOINT SPACING, WITH SLICKENSIDES, JOINTS DIP 90 DEG., TIGHT, PLANAR, SMOOTH DISCONTINUITIES, INFILLED WITH CALCITE.
29.20	0.06	100	A1	80% COAL, DULL WITH FEW BRIGHT BANDS 20% COAL, BRIGHT	BLACK. BANDS, BLACK. UNWEATHERED, WEAK ROCK.
29.30	0.10	100	A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, WEAK ROCK.
29.40	0.10	100	A1	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, WEAK ROCK.
29.42	0.02	100	A1	100% COAL, INTERBANDED DULL AND BRIGHT	BADLY BROKEN, BLACK, UNWEATHERED, WEAK ROCK.
29.55	0.13	100	A1	100% COAL, INTERBANDED DULL AND BRIGHT	BLACK, UNWEATHERED, WEAK ROCK.
29.68	0.13	100	A1	90% COAL, DULL WITH NUMEROUS BRIGHT BANDS 10% TONSTEIN	BADLY BROKEN, BLACK. BANDS, BADLY BROKEN, GREY. WITH PYRITE ON JOINTS, UNWEATHERED, WEAK ROCK.
30.09	0.41	100	A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, WEAK ROCK.
30.13	0.04	100	A1	75% COAL, BRIGHT 25% COAL, DULL WITH FEW BRIGHT BANDS	BANDS, BLACK. BLACK. UNWEATHERED, WEAK ROCK.
30.40	0.27	100	A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, WEAK ROCK.
30.55	0.15	100	A1	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BADLY BROKEN, BLACK, WITH FRAGMENTS OF PYRITE, UNWEATHERED, WEAK ROCK.
30.56	0.01	100	A1	100% TONSTEIN	GREY, UNWEATHERED, WEAK ROCK.
30.63	0.07	100	A1	100% COAL, BRIGHT WITH FEW DULL BANDS	BLACK, UNWEATHERED, WEAK ROCK.
BASE OF MT. NICHOLAS MIDDLE 2 : THICKNESS= 2.49 M; SAMPLED THICKNESS= 2.49 M					
*** CHIP DESCRIPTION ***					
30.84	0.21	100	T2	100% MUDSTONE	GREY, UNWEATHERED, WEAK ROCK.
31.45	0.61	100		100% MUDSTONE	GREY, UNWEATHERED, VERY WEAK ROCK.
*** CORE DESCRIPTION ***					
100.00	68.55			100% SEDIMENTARY ROCK	UNWEATHERED.
100.64	0.64	100		99% SANDSTONE, MEDIUM GRAINED 1% COAL	MASSIVE, LIGHT GREY. FRAGMENTS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
100.72	0.08	100		58% SANDSTONE 40% MUDSTONE 2% COAL	MED.-FINE GRAINED, LIGHT GREY. PELLETAL, FRAGMENTS, GREY. FRAGMENTS, STREAKS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS, WITH MUD PELLETS.

DEPTH TO BASE M	THICKNESS M	REC %	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
*** CORE DESCRIPTION ***					
101.18	0.46	100		100% SANDSTONE, FINE GRAINED	MASSIVE, LIGHT GREY, UNWEATHERED, MODERATELY WEAK ROCK, WIDE JOINT SPACING, JOINTS DIP 30 DEG., OPEN, PLANAR, ROUGH DISCONTINUITIES.
101.23	0.05	100		60% SANDSTONE, FINE GRAINED 40% MUDSTONE	LIGHT GREY. PELLETAL, GREY. UNWEATHERED, MODERATELY WEAK ROCK.
101.25	0.02	100		100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK, ABRUPT BASAL CONTACT.
101.27	0.02	100		100% MUDSTONE	CARBONACEOUS, BANDS, BROWN, UNWEATHERED, MODERATELY WEAK ROCK.
101.33	0.06	100		95% COAL, DULL WITH FEW BRIGHT BANDS 5% MUDSTONE	BLACK. BANDS, BROWN. UNWEATHERED, MODERATELY WEAK ROCK.
101.54	0.21	100		100% MUDSTONE	MASSIVE, GREY, UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
101.69	0.15	100	T3	100% MUDSTONE	MASSIVE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
101.73	0.04	100	T3	90% MUDSTONE 10% COAL	GREY. STREAKS, BLACK. UNWEATHERED, VERY WEAK ROCK.
101.83	0.10	100	T3	100% MUDSTONE	BADLY BROKEN, GREY, UNWEATHERED, WEAK ROCK.
102.00	0.17	0		CORE LOSS	
102.14	0.14	100		100% MUDSTONE	CARBONACEOUS, GREY, UNWEATHERED, WEAK ROCK.
TOP OF MT. NICHOLAS LOWER 2 : 378.37 M R.L.					
102.20	0.06	100	A2	100% COAL, HEAVY DULL	BLACK, UNWEATHERED, WEAK ROCK.
102.35	0.15	100	A2	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.43	0.08	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.47	0.04	100	A2	100% COAL, DULL	UNWEATHERED, MODERATELY WEAK ROCK.
102.53	0.06	100	A2	100% COAL, MID LUSTROUS - DULL	UNWEATHERED, MODERATELY WEAK ROCK.
102.57	0.04	100	A2	100% MUDSTONE	TUFFACEOUS, LIGHT BROWN, UNWEATHERED, MODERATELY WEAK ROCK.
102.58	0.01	100	A2	100% COAL, HEAVY DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.82	0.24	100	A2	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.84	0.02	100	A2	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.90	0.06	100	A2	100% COAL, BRIGHT WITH FEW DULL BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
102.93	0.03	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.

DEPTH TO BASE M	THICKNESS M	REC %	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
*** CORE DESCRIPTION ***					
103.26	0.33	100	A2	80% COAL, DULL 20% COAL, DULL WITH FEW BRIGHT BANDS	BLACK. BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
103.30	0.04	100	A2	100% TONSTEIN	WHITE, UNWEATHERED, MODERATELY WEAK ROCK.
103.48	0.18	100	A2	100% COAL, DULL	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.55	0.07	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.58	0.03	100	A2	95% TONSTEIN 5% COAL	WHITE. STREAKS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
103.63	0.05	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.70	0.07	100	A2	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.72	0.02	100	A2	100% COAL, BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.75	0.03	100	A2	100% COAL, INTERBANDED DULL AND BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.79	0.04	100	A2	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
103.85	0.06	100	A2	80% COAL, DULL WITH FEW BRIGHT BANDS 20% COAL, DULL	BADLY BROKEN, BLACK. BADLY BROKEN, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
BASE OF MT. NICHOLAS LOWER 2 : THICKNESS= 1.71 M; SAMPLED THICKNESS= 1.71 M					
103.88	0.03	100	T4	100% SANDSTONE, FINE GRAINED	LIGHT BROWN, UNWEATHERED, MODERATELY WEAK ROCK.
103.89	0.01	100	T4	100% COAL, HEAVY DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
104.08	0.19	100	T4	100% MUDSTONE	SILTSTONE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
104.17	0.09	100		100% MUDSTONE	SILTSTONE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
104.74	0.57	100		85% SILTSTONE 15% SANDSTONE, FINE GRAINED	CARBONACEOUS BANDS, GREY. BANDS, LENSES, LIGHT GREY. UNWEATHERED, MODERATELY WEAK ROCK.