

THE SHELL COMPANY OF AUSTRALIA LTD.

BOREHOLE LITHOLOGICAL DESCRIPTION

GRAY

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HOLE TYPE	CORE
EASTING	591,864 M AM GRID
NORTHING	5,398,612 M AM GRID
ELEVATION	463.04 M
TOTAL DEPTH DRILLED	133.12 M
DRILLING STARTED	20/09/82
DRILLING TIME	15 DAYS
CORE SIZE	100.0 MM
HOLE SIZE	190.0 MM
LENGTH CASSED	11.00 M
INITIAL WATER LEVEL	
WATER LEVEL AT GEOPHYSICAL LOGGING	
DRILLING FLUID	
DRILLING CONTRACTOR	ASSOCIATED DIAMOND DRILLERS
GEOPHYSICAL LOGGING CONTRACTOR	
LITHOLOGICAL DESCRIPTION BY	P. SANSON
INFORMATION AVAILABLE :	SAMPLES TAKEN ANALYTICAL DATA LITHOLOGICAL DESCRIPTION
PETROPHYSICAL WIRELINE LOGS RUN :	NIL

DEPTH TO BASE M	THICKNESS M	REC %	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
11.00	11.00			100% DOLERITE	SCREE.
30.00	19.00			100% SEDIMENTARY ROCK	
*** CORE DESCRIPTION ***					
30.53	0.53			99% SANDSTONE, MEDIUM GRAINED 1% COAL	LIGHT GREY. STREAKS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
30.99	0.46			70% SANDSTONE, MEDIUM GRAINED 30% COAL	LIGHT GREY. STREAKS, FRAGMENTS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK, SOME SEPARATION ALONG BEDDING SURFACES, BEDS DIP 20 DEG., WITH MUD PELLETS, WITH CARBONACEOUS WISPS.
31.17	0.18			85% SANDSTONE, MEDIUM GRAINED 10% COAL 5% MUDSTONE	LIGHT GREY. FRAGMENTS, STREAKS, BLACK. PELLETAL, FRAGMENTS, GREY. UNWEATHERED, MODERATELY WEAK ROCK.
31.23	0.06			80% MUDSTONE 20% SANDSTONE, MEDIUM GRAINED	FRAGMENTS, PELLETAL, GREY. LIGHT GREY. UNWEATHERED, MODERATELY WEAK ROCK.
32.06	0.83			100% SANDSTONE, MEDIUM GRAINED	MASSIVE, LIGHT GREY, UNWEATHERED, MODERATELY WEAK ROCK.
32.36	0.30	100	T1	100% SANDSTONE, MEDIUM GRAINED	MASSIVE, LIGHT GREY.
32.42	0.06	100	T2	100% SANDSTONE, MEDIUM GRAINED	MASSIVE, LIGHT GREY.
32.63	0.21	100	T3	90% SANDSTONE 10% CARBONACEOUS MUDSTONE	MED.-FINE GRAINED, LIGHT GREY. LAMINAE, STREAKS, BROWN-BLACK.
32.96	0.33			90% SANDSTONE 10% CARBONACEOUS MUDSTONE	MED.-FINE GRAINED, LIGHT GREY. LAMINAE, STREAKS, BROWN-BLACK.
33.02	0.06			95% SANDSTONE 5% COAL	MED.-FINE GRAINED, LIGHT GREY. FRAGMENTS, STREAKS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
33.06	0.04			100% CARBONACEOUS MUDSTONE	LENSES, BROWN, UNWEATHERED, MODERATELY WEAK ROCK.
33.18	0.12			75% SANDSTONE, MEDIUM GRAINED 15% CARBONACEOUS MUDSTONE 10% COAL	LIGHT GREY. LENSES, FRAGMENTS, BROWN. FRAGMENTS, STREAKS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
33.63	0.45			80% SANDSTONE 20% COAL	MED.-COARSE GRAINED, LIGHT GREY. FRAGMENTS, STREAKS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
TOP OF MT. NICHOLAS MIDDLE 1 : 429.41 M R.L.					
33.69	0.06		A1	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 ***					
33.74	0.05		A1	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
33.76	0.02		A1	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
33.92	0.16		A1	100% COAL, DULL	BLACK, WITH PYRITE ON JOINTS, UNWEATHERED, MODERATELY WEAK ROCK, MODERATELY CLOSE JOINT SPACING, JOINTS DIP 90 DEG., TIGHT, PLANAR, SMOOTH DISCONTINUITIES.
33.93	0.01		A1	100% COAL, BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
34.04	0.11		A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
34.20	0.16		A1	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
34.29	0.09		A2	100% MUDSTONE	GREY, UNWEATHERED, WEAK ROCK, SLOW SLAKING.
34.37	0.08		A2	100% CLAYSTONE	CARBONACEOUS, DARK GREY, UNWEATHERED, VERY WEAK ROCK, RAPID SLAKING.
34.48	0.11		A3	100% COAL, DULL	BADLY BROKEN, BLACK, UNWEATHERED, WEAK ROCK.
34.50	0.02		A3	100% CLAYSTONE	CREAM, UNWEATHERED, VERY WEAK ROCK.
34.58	0.08		A3	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
34.75	0.17		A3	70% COAL, DULL WITH FEW BRIGHT BANDS 30% COAL, BRIGHT	BLACK. BANDS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
34.98	0.23		A3	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
35.05	0.07		A3	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
35.24	0.19		A3	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
35.28	0.04		A3	100% CARBONACEOUS MUDSTONE	COALY, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
35.33	0.05		A3	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
35.34	0.01		A3	100% CARBONACEOUS MUDSTONE	BANDS, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
35.40	0.06		A3	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.

BASE OF MT. NICHOLAS MIDDLE 1 : THICKNESS= 1.77 M; SAMPLED THICKNESS= 1.77 M

35.65	0.25			100% MUDSTONE	GREY, UNWEATHERED, VERY WEAK ROCK.
36.39	0.74			100% MUDSTONE	SILTY, GREY, UNWEATHERED, WEAK ROCK.
37.80	1.41			100% SANDSTONE	MED.-FINE GRAINED, MASSIVE, LIGHT GREY, UNWEATHERED, MODERATELY WEAK ROCK.

\*\*\* CHIP DESCRIPTION \*\*\*

60.00	22.20			100% SEDIMENTARY ROCK	
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DEPTH TO BASE M	THICKNESS M	REC X	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
120.50	60.50			100% SEDIMENTARY ROCK	
*** CORE DESCRIPTION ***					
120.54	0.04			70% MUDSTONE 30% MUDSTONE	CARBONACEOUS, DARK GREY. GREY. UNWEATHERED, MODERATELY WEAK ROCK.
120.71	0.17			100% MUDSTONE	GREY, UNWEATHERED, MODERATELY WEAK ROCK.
121.44	0.73			85% MUDSTONE 15% CARBONACEOUS MUDSTONE	CARBONACEOUS, DARK GREY. BANDS, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
121.73	0.29			80% COAL, DULL 15% COAL, DULL WITH FEW BRIGHT BANDS 5% CARBONACEOUS MUDSTONE	BLACK. BLACK. BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
122.01	0.28			100% MUDSTONE	GREY, UNWEATHERED, MODERATELY WEAK ROCK, WITH PLANT REMAINS.
123.60	1.59	90		70% SANDSTONE, FINE GRAINED 28% SILTSTONE 2% MUDSTONE	LIGHT GREY. BANDS, LENSES, GREY. BANDS, GREY. UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
124.03	0.43			65% SILTSTONE 20% SANDSTONE, FINE GRAINED 15% MUDSTONE	GREY. BANDS, LIGHT GREY. BANDS, GREY. UNWEATHERED, MODERATELY WEAK ROCK.
124.64	0.61			100% MUDSTONE	MASSIVE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
124.77	0.13			90% MUDSTONE 10% MUDSTONE	CARBONACEOUS, DARK GREY. BANDS, GREY. UNWEATHERED, MODERATELY WEAK ROCK.
125.08	0.31			100% MUDSTONE	MASSIVE, SILTY, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
125.34	0.26			75% SANDSTONE, FINE GRAINED 25% SILTSTONE	LIGHT GREY. BANDS, GREY. UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
125.67	0.33			100% MUDSTONE	MASSIVE, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
125.80	0.13			100% MUDSTONE	CARBONACEOUS, DARK GREY, UNWEATHERED, MODERATELY WEAK ROCK.
TOP OF MT. NICHOLAS LOWER 1 : 337.24 M R.L.					
125.82	0.02		A4	100% CARBONACEOUS MUDSTONE	COALY, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
126.00	0.18		A4	75% COAL, DULL 25% CARBONACEOUS MUDSTONE	BADLY BROKEN, BLACK. BADLY BROKEN, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.

DEPTH TO BASE M	THICKNESS M	REC X	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
*** CORE DESCRIPTION ***					
127.00	1.00	0	A4	CORE LOSS	
127.32	0.32		A4	70% COAL, DULL WITH FEW BRIGHT BANDS 30% COAL, DULL	BADLY BROKEN, BLACK. BADLY BROKEN, BLACK. UNWEATHERED, MODERATELY WEAK ROCK.
127.34	0.02		A4	100% TONSTEIN	LIGHT GREY, UNWEATHERED, MODERATELY WEAK ROCK.
127.42	0.08		A4	100% COAL, DULL	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
127.43	0.01		A4	100% TONSTEIN	WHITE, UNWEATHERED, MODERATELY WEAK ROCK.
127.55	0.12		A4	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
127.61	0.06		A4	100% COAL, INTERBANDED DULL AND BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
127.64	0.03		A4	100% COAL, MID LUSTROUS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
127.84	0.20		A4	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
127.95	0.11		A4	100% COAL, INTERBANDED DULL AND BRIGHT	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.

BASE OF MT. NICHOLAS LOWER 1 : THICKNESS= 2.15 M; SAMPLED THICKNESS= 2.15 M

128.00	0.05		T11	100% SILTSTONE	CARBONACEOUS, DARK GREY, UNWEATHERED, MODERATELY WEAK ROCK.
128.50	0.50		T11	90% SILTSTONE 10% MUDSTONE	GREY. BANDS, GREY. UNWEATHERED, MODERATELY WEAK ROCK, WITH CARBONACEOUS WISPS.
128.56	0.06			100% MUDSTONE	GREY, UNWEATHERED, MODERATELY WEAK ROCK.
128.57	0.01			100% MUDSTONE	CARBONACEOUS, DARK GREY, UNWEATHERED, MODERATELY WEAK ROCK.
128.82	0.25			100% MUDSTONE	SILTY, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
129.20	0.38			75% SILTSTONE 25% MUDSTONE	GREY. SILTY, GREY. UNWEATHERED, MODERATELY WEAK ROCK.
130.20	1.00	0		CORE LOSS	
130.90	0.70			100% SILTSTONE	CARBONACEOUS, BANDS, GREY, UNWEATHERED, MODERATELY WEAK ROCK.
131.05	0.15			90% MUDSTONE 10% MUDSTONE	BADLY BROKEN, GREY. CARBONACEOUS, DARK GREY. UNWEATHERED, MODERATELY WEAK ROCK.

TOP OF MT. NICHOLAS LOWER 2 : 331.99 M R.L.

131.09	0.04	100	A5	100% COAL, BRIGHT WITH NUMEROUS DULL BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
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DEPTH TO BASE M	THICKNESS M	REC Z	SAMPLE NUMBER	ROCK TYPE	GEOLOGICAL DESCRIPTION
*** CORE DESCRIPTION ***					
131.20	0.11	100	A5	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
131.26	0.06	100	A5	100% MUDSTONE	CARBONACEOUS, DARK GREY, UNWEATHERED, MODERATELY WEAK ROCK.
131.38	0.12	100	A5	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
131.39	0.01	100	A5	100% CLAYSTONE	TUFFACEOUS, CREAM, UNWEATHERED, MODERATELY WEAK ROCK.
131.46	0.07	100	A5	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
131.49	0.03	100	A5	50% COAL, DULL 40% CLAYSTONE 10% TONSTEIN	BLACK. TUFFACEOUS, CREAM. WHITE. UNWEATHERED, MODERATELY WEAK ROCK.
131.60	0.11	100	A5	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
131.80	0.20	100	A5	100% COAL, HEAVY DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
131.84	0.04	100	A5	90% CARBONACEOUS MUDSTONE 10% MUDSTONE	COALY, BLACK. PELLETAL, LIGHT BROWN. UNWEATHERED, MODERATELY WEAK ROCK.
131.85	0.01	100	A5	100% TONSTEIN	LIGHT GREY, UNWEATHERED, MODERATELY WEAK ROCK.
131.91	0.06	100	A5	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
131.92	0.01	100	A5	100% TONSTEIN	LIGHT GREY, UNWEATHERED, MODERATELY WEAK ROCK.
132.05	0.13	100	A5	100% COAL, HEAVY DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
132.06	0.01	100	A5	100% COAL, MID LUSTROUS - DULL	GREY, UNWEATHERED, MODERATELY WEAK ROCK.
132.42	0.36	100	A5	100% COAL, DULL WITH FEW BRIGHT BANDS	BADLY BROKEN, BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
132.50	0.08	100	A5	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
132.63	0.13	100	A5	100% COAL, DULL WITH NUMEROUS BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
132.80	0.17	100	A5	100% COAL, DULL	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.
133.02	0.22	100	A5	100% COAL, DULL WITH FEW BRIGHT BANDS	BLACK, UNWEATHERED, MODERATELY WEAK ROCK.

BASE OF MT. NICHOLAS LOWER 2 : THICKNESS= 1.97 M; SAMPLED THICKNESS= 1.97 M.

133.12	0.10			100% MUDSTONE	GREY, UNWEATHERED, MODERATELY WEAK ROCK.
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