541012

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 1
TENEMENT NAME MT ROLAND No.
LOGGED BY: G. PURVIS

CO-ORDINATES 506N/1200E AZIMUTH 030° MAG DRILLERS PARRY COMMENCED 22·7·80 DEPTH 229·50 m HOLE No. DD 80 MR1
RL COLLAR INCLINATION 62° DRILL TYPE BOYLES 37 COMPLETED 31·7·80 CASING LEFT 48m NQ DPO No(s) 26457,

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by AMDEL, ZC..) Pb	Zn	Cu	Ag	Au	Sn	W
0	15.25	-	NQ		SCREE - ROLAND CONGLOMERATE	0-15m core dumped.											
							795491	15.30	17.0	1.7	120	183	358	1			
25	26.00		NQ		PORPHYRITIC QUARTZ-ANDESITE LAVA	Weakly to moderately altered -	92	17.0	19.0	2.0	25	110	449	<1	<.04	<4	15
					Pale green with pink patches.	sericite, with minor carbonate and	93	19.0	21.0	2.0	42	125	277	<1			
					Massive rock, badly fractured.	chlorite.	94	21.0	23.0	2.0	43	80	142	1	<.04	8	20
					Very little qtz, abundant altered	Numerous strong shears below 19.2m	95	23.0	25.0	2.0	58	51	76	1			
					feldspar laths 1-3mm, some	esp: 21.4-22.2m (55°/LCA)	96	25.0	27.0	2.0	32	46	69	<1	<.04	<4	10
					creamy amphiboles or feldspars	Core leached below 22.2m.	97	27.0	29.0	2.0	26	29	142	<1			
					1-3mm. Some glass shards.		98	29.0	31.0	2.0	23	40	59	1	<.04	<4	15
					Groundmass creamy sericitic +	15.25-20m: 2-3% py (disseminated	99	31.0	33.0	1.7	21	105	20	<1			
					chloritic ± carbonate.	and in stringers 1-2mm + qtz.	795500	33.0	35.5	2.5	25	127	17	<1	<.04	<4	<10
					Whole rock has fragmental	20-22.5m: 5-7% py. Minor cp.	816629	35.5	37.0	1.5	41	110	26	1			
					appearance with rare lava	22.5-26m: 10% py in bands	30	37.0	39.0	2.0	32	115	29	<1	<.04	4	<10
					clasts up to 5mm. Mineral	// shearing 35°/LCA. Minor cp.	31	39.0	41.0	2.0	20	96	31	<1			
					lineation: 17m 30°/LCA		816632	41.0	43.0	2.0	36	109	65	1	<.04	<4	<10
					20m 45°/LCA.												
							816633	49.0	50.5	1.5	44	51	153	1			
31.00	31.00		NQ		LEACHED ZONE - LAVA AS ABOVE.	Some patches and veins of	34	50.5	53.0	1.5	43	42	52	1	<.04	<4	10
			to		Creamy colored, clayey.	carbonate.											
			53.50		Sandy rock as above, mod altered	1% haematite	816636	63.0	64.1	1.1	53	35	390	2	<.04	12	<10
			Hmm.		Badly sheared and broken but	1-5% py mainly in shears and											
			BQ		non-schistose. Weak mineral	breccia zones // mineral lineation	816637	68.0	70.0	2.0	88	54	70	1			
					lineation 15°/LCA.	Minor cp.	38	70.0	72.0	2.0	630	80	55	1	<.04	6	<10
							39	72.0	74.0	2.0	52	85	34	<1			
100	67.00		BQ		PORPHYRITIC ANDESITIC TO RHYOLITIC	Weak-mod alteration - strongly	816641	87.9	89.4	1.5	71	82	134	1			
					LAVA	carbonated, sericitic and											
					Similar to above 26m. Increasingly	chloritic. Minor barren qtz -											
					rhyolitic with depth.	carbonate - chlorite veins up to 4mm.											
					Hard, greenish-grey (unbleached)	Up to 3% haematite + magnetite.											
					to clayey, creamy-green where	Sulphides throughout - py with rare											

541013

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 2

TENEMENT NAME MT ROLAND No. .....

PLAN – MAP REFERENCE .....

CO-ORDINATES ..... AZIMUTH ..... DRILLERS ..... COMMENCED ..... DEPTH ..... HOLE No. DD 80 MR 1

RL COLLAR ..... INCLINATION ..... DRILL TYPE ..... COMPLETED ..... CASING LEFT ..... DPO No(s) 26457,

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by ZC, AMDEL) Pb	Zn	Cu	Ag	Au	Sn	W
					leached and bleached. Some pink colour due to Fe content. Abundant euhedral to anhedral feldspar phenocrysts now sericitised mostly <2mm. Also qtz, in vitric groundmass. Rare indistinct volcanic clasts up to 35mm. Massive, with mineral lineation but non-schistose. Mineral lineation: 31.7m 45°/LCA; 45m 30°/LCA; 67m 40°/LCA. Gradual change at depth to:	cp. Best sulphides disseminated in leached zones centred on fractures, or in matrix (± slight silicification) & indistinct banded breccia zones. Best sulphides: 35.5 – 37m : 15% py. 37 – 43.4m : 5% py. 49 – 50.5m : 5% py – locally 10-15%. 50.5 – 53m : 10-15% py. 63.05 – 64.1m : 10-15% py trace cp.	816642	96.00	98.00	1.7	24	43	44	1	<.04	6	<10
							43	98.00	100.50	2.0	16	70	87	<1			
67.00	106.00		BQ		RHYOLITIC PYROCLASTIC (AUTOBRECCIATED IGNIMBRITE?) Essentially the same rock as above. Creamy green to dark green, mod altered (qtz-sericite + carbonate + minor chlorite), Feldspars + qtz up to 3mm in vitric groundmass. Feldspars as euhedral crystals and irregular crystal fragments. Weak to mod schistosity. Strong mineral lineation: 40°/LCA @ 67.5m; 45°/LCA @ 77.3m; 50°/LCA @ 86.5m; 45°/LCA @ 94.1m; 40°/LCA @ 101.5m; Some hazy angular clasts of similar rock up to 15mm.	Less shearing than above 67m, shearing ink again below 88m, core badly broken 90-100.1m. Strong shears: 70m – 75°/LCA barren; 90.45m – 65°/LCA barren; 92.9m – 65°/LCA minor py; 97.45m – 55°/LCA minor py; 105.5m – 50°/LCA. Finely disseminated py stringers often in bands and vein-like threads oriented // to mineral lineation in matrix of breccia zones. Usually ± associated weak silicification. Best zones: 67.9 – 71m : 2-3% py 71 – 72.3m : 5% py 81.3 – 82.5m : 2-3% py 87.9 – 89.4m : 5-7% py.											

541014

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 3
TENEMENT NAME MT ROLAND No.
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No. DD 80 MR1
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s) 26457,

DEPTH From (M)	DEPTH To (M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by AMDEL, ZC) Pb	Zn	Cu	Ag	Au	Sn	W
					Occasional qtz-carb veins, 2/m down to 98.5m then less. Barren. Vague lower contact.	96-97.4m: 5% py 97.4-100.5m: 2-3% py Trace cp. Minor haematite + magnetite throughout.	816644	105	107	2.0	18	74	46	1	<.04	<4	15
							45	107	109	2.0	28	111	106	1			
							46	109	111	2.0	19	51	62	<1	<.04	<4	<10
96.00	140.50		BQ		VOLCANIC BRECCIA Similar to above. Dark green with extensive patchy bleaching some unwelded rock with soft rock brecciation. Hazy angular clasts up to 50mm (average 10mm) in vitric groundmass. Some pink euhedral feldspar and qtz. Numerous qtz-carb veins. Clasts // mineral lineation, comprise same volcanics as above - lavas, pyroclastics and tuffs. Some pumice. Moderate alteration – qtz-sericite, carbonate, minor chlorite. Weak schistosity // to mineral lineation. Where visible, clast lineation // min lineation. Mineral Lineation: 35°/LCA @ 113.2m; 30°/LCA @ 115.7m; 40°/LCA @ 129m; 40°/LCA @ 139.5m. Sharp lower contact – a shear 70°/LCA.	Much less shearing than before – core not badly broken. Strongly pyritic throughout – mostly as v. f. gr disseminations, then in bands and threads as above, or as matrix to indistinct soft-rock brecciation. Best sulphides associated with bleaching. Zones of pyrite > 3% as follows: 105.1 – 108.7m: 3-5% py Trace cp. 108.7 – 113m: 5-7% py. Minor cp. 114 – 119.4m: 7-10% py. 121.5 – 124.8m: 5-10% py. 124.8 – 126.4m: 15-20% py. 126.4 – 131.1m: 10-15% py. 131.1 – 138m: 15-20% py. 138 – 140.5m: 10-15% py Trace cp + gn in some qtz-carb veins.	47	111	113	2.0	18	74	245	1			
							48	113	115	2.0	19	155	99	<1	<.04	6	<10
							49	115	117	2.0	73	80	125	1			
							816650	117	119	2.0	75	116	45	1	<.04	4	10
							816701	119	121	2.0	32	200	162	1			
							02	121	123	2.0	70	136	145	1	<.04	<4	<10
							816704	123	124.8	1.8	34	200	140	1	<.04	8	10
							05	124.8	127	2.2	53	200	205	1			
							06	127	129	2.0	35	155	53	<1	<.04	<4	10
							07	129	131	2.0	34	125	39	1			
							08	131	133	2.0	42	110	48	1	<.04	<4	<10
							09	133	136	3.0	59	127	45	1			
							816710	136	139	3.0	59	95	36	1	<.04	<4	<10
							11	139	141	2.0	54	115	55	1			
							816712	149.50	151.50	2.0	77	196	475	1	<.04	<4	<10
							13	151.50	153.50	2.0	75	141	50	1			
							816714	163.50	165.0	1.5	23	138	36	1	<.04	<4	<10
							15	165	167	2.0	130	180	42	1			
							16	167	169	2.0	59	200	25	1	<.04	6	<10
150.50	165.50		BQ		PORPHYRITIC QUARTZ-ANDESITE LAVA Similar to lava at top of hole. Dark green or grey, dense, fi gr, weak-mod altered volcanic. Abundant euhedral feldspars <1mm rarely up to 5mm. Minor qtz.	Less sulphides than before. Generally <1% py + 2% magnetite except: 140.5 – 142m: 5% py 149.5 – 152.5m: 10% py 153.5 – 156.5m: 2-3% py 156.5 – 158.1m: 10-15% py (breccia zone)	17	169	171	2.0	38	132	163	2			
							18	171	173	2.0	40	145	47	3	<.04	<4	<10
							19	173	175	2.0	58	151	51	2			
							816720	175	177	2.0	200	171	74	2	<.04	<4	<10
							21	177	179	2.0	66	147	136	2			
							22	179	181	2.0	160	145	61	1	<.04	<4	<10

541015

C.R.A. EXPLORATION PTY. LIMITED
DRILL CORE LOG

SHEET No. 4
TENEMENT NAME MT. ROLAND No.
PLAN – MAP REFERENCE
CO-ORDINATES AZIMUTH DRILLERS COMMENCED DEPTH HOLE No DD 80 MR 1
RL COLLAR INCLINATION DRILL TYPE COMPLETED CASING LEFT DPO No(s) 26458,

DEPTH From (M)	DEPTH To(M)	Core Rec. (M)	Core Size	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization
					Numerous chloritised ferromag phenocrysts.	
					Alteration - sericite, carbonate + chlorite.	
					Numerous thin carb-qtz veins filling tension gashes, some ± trace cp+gn.	
					Mineral lineation much weaker than before - 65°/LCA @ 158.5m; 55°/LCA @ 164m.	
					Lower contact a shear 75°/LCA.	
					Pyroclastic layer or breccia zone 151.8 - 153.5m. 45°/LCA. Clasts up to 50mm. Irregular contacts. Another similar zone 156.5 - 158.10m.	
165.50	229.50		BQ		INTERCALATED VOLCANIC BRECCIAS AND QUARTZ-ANDESITE LAVAS	Clast lineation: 169.7m · 55°/LCA; 178m: 50°/LCA; 188m 50°/LCA; 229m 65°/LCA.
					Units as described previously. Down to 203.2m mostly breccias, below this mainly lavas. Margins of breccia zones appear as soft-rock brecciation of lava (flow tops?); central parts of breccia zones look more pyroclastic in origin (slight rounding of clasts, fine matrix)	Mineral lineation: 45°/LCA @ 203.8m; 55°/LCA @ 218.2m.
					Breccia grey-green, lava dark green, bleaching in places.	Pyrite, finely dissem in clasts + matrix: 165.5 - 200m: 10-20% py, rare trace cp + sp-gn. Best sulphides in strongly silicified and carbonated breccia zones between 185.5 - 195.1m.
					Weak to mod alteration - sericite, carbonate, chlorite. Weakly schistose.	Below 200m < 2% py (some < 1%) except in following zones:
					Breccia clasts up to 100mm, mostly < 20mm, many flattened. Usually angular + irregularly shaped.	200.75 - 205: 10-15% py. Trace cp
					Numerous qtz-carb veins.	206.5 - 213: 10% py. Trace cp.
						217.5 - 222.7: 5-10% py. Trace cp
						226.5 - 229.5: 2-3% py, several % magnetite.
					END OF HOLE	

Sample No.	From (M)	To (M)	Rec (M)
816723	181	184	3.0
24	184	185	1.0
25	185	187	2.0
26	187	189	2.0
816728	189	191	2.0
29	191	193	2.0
816730	193	195	2.0
31	195	197	2.0
32	197	199	2.0
33	199	201	2.0
34	201	203	2.0
35	203	205	2.0
816736	207	209	2.0
37	209	211	2.0
38	211	213	2.0

ASSAY VALUES (Analysed by ZC, AMDEL)						
Pb	Zn	Cu	Ag	Au	Sn	W
210	200	29	2			
63	80	31	2	<.04	8	<10
59	62	53	2			
45	62	65	2	<.04	<4	10
82	100	67	3	<.04	<4	<10
99	124	78	1			
64	86	81	1	<.04	4	<10
33	115	61	1			
59	110	41	1	<.04	6	<10
44	145	98	2			
69	64	31	3	<.04	4	<10
50	104	43	2			
47	122	77	1	<.04	<4	<10
110	112	24	1			
56	169	44	1	<.04	4	<10

Petrological samples – DPO 26459:

816628	34.6
816635	53.15
816640	80.35
816703	123
816727	144.3
816739	226.3

Camera hole surveys:

Depth	Dip	Azimuth
64m	57°40'	099° ?
124m	47°15'	093° ?
157m	41°	036°
181m	36°15'	036°
208m	32°40'	090° ?
229m	27°10'	038°