

CRA EXPLORATION PTY. LIMITED
DRILL-HOLE SUMMARY LOG

695054

HOLE NAME: DD95ZR104 AMG EAST 365944 NORTH 5351907
 PROSPECT: PROFESSOR RANGE GRID EAST 65542 NORTH 51456
 EL: ZEEHAN 2 EL 34/88 RL _____ DEPTH 274.0m

DATE DRILLED: 19/7/95
 LOGGED BY: S.J. TEAR
 DRILLING CO.: DD.TAS.LTD.
 DRILL TYPE: DIAMOND
 DRILL RIG: U650
 LOC DRILL CORE: ZEEHAN

SURVEYS:

DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
0	2813°	50°			
175m	209.5°	52.5°			
251m	212°	52°			

OBJECTIVES OF HOLE:
 DIAMOND DRILL TEST OF ZINC-RICH UPPER SANDSTONE/LIMESTONE CONTACT - ELEVATED ZINC VALUES FROM AIR CORE DRILLING

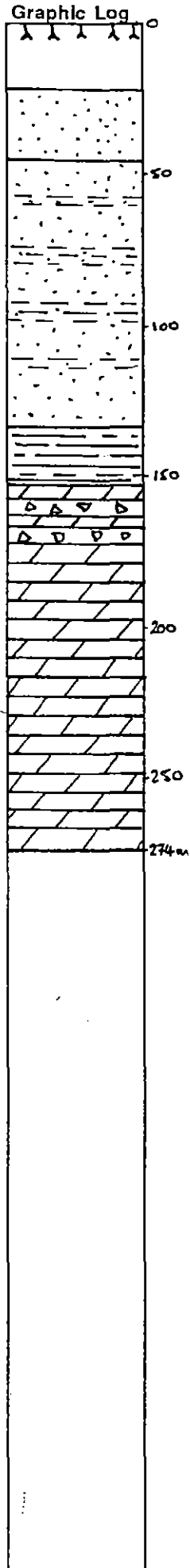
LITHOLOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	21	Qha	Overburden + triconed Crotty Quartzite.
21	43.8	Sc	Med/coarse grained Crotty Quartzite
43.8	132.8	Sc	Interlaminated sands + silts - Crotty Quartzite
132.8	152.5	Sc	Interlaminated black shales and siltstones - Crotty Quartzite with occ. sandstones
152.5	172.0	Ogud	Upper Dolomite unit with breccia zones and dark grey clay zones.
172.0	274.0	Ogud	? Upper Dolomite Unit

MINERALISATION SUMMARY:

FROM	TO	COMMENTS
217.8	218.1	0.8% Zn as sphalerite associated with blebs disseminated in a fracture zone. (Pb 0.23%)
251.75	252.75	0.1% Zn as sphalerite associated with a 2cm disseminated sphalerite and galena zone in a carbonate ? breccia replacement zone.

CONCLUSIONS:
 Bedding @ 34m 65° to dfa @ 93.5m 65° E dfa @ 220.9 65° E dfa ?; Variable between 60+70°.
 Drillhole passed through the Upper Sandstone/Limestone contact. A fissile shale unit believed to be a major shear zone exists at the contact. Dolomitisation is associated with this shear zone. The shear zone dips subvertically.



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DRILL CORE LOG

SHEET No. 2

TENEMENT NAME Professor Range No. 019

365944E

CO-ORDINATES 5351907 NAZIMUTH 50 DRILLERS DDTAS COMMENCED 19.7.95 DEPTH 274 m HOLE No. ZR104

RL COLLAR INCLINATION DRILL TYPE 4650 COMPLETED CASING LEFT DPO No(s)

DEPTH		Core Rec. %	RQ DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alterat, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)										REC (Fe)	REC (Cu)	REC (P)	REL (Au)	
66.2	70.5	100	2b	Sc	Med grained grey sandstone with dark grey silty/filty laminae; locally bioturbated	Bedding 70° to c/A.						67.5	69.0	1.5	100
												69.0	70.5	1.5	100
												70.5	72.0	1.5	100
												72.0	73.5	1.5	100
70.5	74.6	100	2	Sc	Med/coarse grained grey/brown sandstone. Massively bedded with conglomeratic (fine grained zone)							73.5	75.0	1.5	100
												75.0	76.5	1.5	100
												76.5	78.0	1.5	100
												78.0	79.5	1.5	100
												79.5	81.0	0.75	50
74.6	76.5	100	2b	Sc	Dark grey inter-bedded fine sandstone and siltstone. Laminar and beds; bioturbated locally.	Bedding 60° to c/A.	79	75	76.5			81.0	82.5	0.6	40
												82.5	84.0	1.5	100
												84.0	85.5	1.5	100
												85.5	87.0	1.5	100
												87.0	88.5	1.5	100
76.5	79.9	100	1	Sc	Med/coarse grained grey/brown sandstone (porous-looking) fine downhole. Massively bedded. Saturated coarse qtz + lithic frag clasts from 78m onwards to 79.4m.							88.5	90.0	1.5	100
												90.0	91.5	1.5	100
												91.5	93.0	1.5	100
												93.0	94.5	1.5	100
												94.5	95.8	1.3	100
												95.8	97.0	1.0	83
												97.0	98.5	1.5	100
79.9	80.1	100	2	Sc	Small conglomeratic horizon 10cm followed by fine grained sandstone + siltstone - localised bioturbated							98.5	99.5	1.0	100
												99.5	100.5	0.9	90
												100.5	102.0	1.5	100
												102.0	103.5	0.8	100
80.1	81.0	0	-	Sc	Core loss							103.5	105.0	1.5	100
												105.0	106.5	1.5	100
81.0	82.3	82.5	5	Sc	Frangible sand - probably well grained poorly cemented sandstone		80	81.0	82.5			106.5	108.0	1.3	86
												108.0	109.5	1.5	100
												109.5	110.5	0.9	90
												110.5	112.0	1.5	100

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DRILL CORE LOG

SHEET No. 5
TENEMENT NAME PROFESSOR RANGEN No. 89

CO-ORDINATES 365944E 5351907N AZIMUTH 50° DRILLERS DDTAS COMMENCED 19.7.95 PLAN - MAP REFERENCE
DEPTH 274m HOLE No. 2R104
RL COLLAR..... INCLINATION..... DRILL TYPE 4650 COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH		Core Rec.	RQ	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)										REC (Fe)	REC (Cu)	REC (Zn)	REC (Pb)	
131.75	132.7	86	28x	Sc	Mixed partially ?rotted sandstone with breccia/clay zones some cutting stratigraphy		99	131.75	132.7			112.5	113.5	1.5	100
												113.5	114.6	1.0	90
												114.6	115.5	0.6	67
												115.5	117.2	1.7	100
132.7	141.3	100	2x	Sc	Black ?rotted siltstone/sandstone with shale/clay zones; wavy appearance. Sheared surfaces. Occ light grey sandstone bands.	Occ slab (c.1cm) of pyrite. NOTE! ?blue clay veining can be seen with pyrite (?galena) i.e. 136.5 - 141.0m.	546530c	132.8	135.0			117.2	119.5	1.3	100
							546850l	135.0	136.5			119.5	120.0	0.6	40
							2	136.5	138.0			120.0	121.5	0.3	20
							3	138.0	139.5			121.5	122.5	0.6	40
							4	139.5	141.3			122.5	123.25	0.75	50
												123.25	124.25	0.7	70
141.3	141.5	100	5x	Sc	Sheared zone.	60° E c/A ?bedding parallel.						124.25	125.50	1.05	89
												125.5	127.0	1.5	100
141.5	142.9	100	3f	Sc	Dark grey/black siltstone locally broken core.		5	141.3	142.9			127.0	128.1	1.1	100
												128.1	129.0	0.9	100
												129.0	130.4	1.4	100
142.9	148.6	88	4f	Sc	Interbedded grey + dark grey med + fine grained sandstone locally broken core due to shearing	Bedding 65° E c/A. Shearing sub parallel E c/A.	6	142.9	145.5			130.4	131.75	1.1	80
							7	145.5	148.6			131.75	133.5	1.5	84
												133.5	135.0	1.5	100
												135.0	136.5	1.5	100
												136.5	138.0	1.5	100
148.6	150.9	78	5x	Sc	Fine grained grey sandstone/siltstone. Broken core with clay zones.	clay gouge 15° E c/A.	8	148.6	150.9			138.0	139.5	1.5	100
												139.5	141.0	1.5	100
												141.0	142.5	1.5	100
												142.5	144.0	1.5	100
150.9	152.5	25	5	Sc	Dk grey clay - wet, sloppy.		9	150.9	152.5			144.0	145.5	1.5	100
												145.5	146.75	1.25	100
152.5	156.9	90	1	Quad	Grey non-calcareous & altered limestone; Mixed micritic and calcarenite; locally bioclastic and argillaceous. Argillite mainly as interstitial fill.	?Dolomite (or siderite) alteration	510	152.5	154.5			146.75	147.5	0.5	67
							"	154.5	156.9			147.5	148.5	0.8	90
							121	156.9	157.6			148.5	149.9	1.0	70
												149.9	150.7	0.7	87
												150.7	152.5	0.45	25

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

SHEET No. 7

TENEMENT NAME PROFESSOR RANSEN No. of 9

CO-ORDINATES 365944 E 5351907 N AZIMUTH 50° DRILLERS DDTAS COMMENCED 19.7.95 DEPTH 274 m HOLE No. ZR104
RL COLLAR..... INCLINATION..... DRILL TYPE UG50 COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH		Core Rec	RA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)										REC (mm)	REC (to)	REC (m)	REC %	
187.2	201.0	100	2	Ogud	? more bioturbated producer unit - dolomitised with increase in amounts of arifillite.	occ dolomite vein possible minor pyrite and sphalerite in vugs	sub 532	184.0	185.6			196.5	198.0	1.5	100
							33	185.6	187.2			198.0	199.5	1.5	100
							34	187.2	188.7			199.5	201.0	1.5	100
							35	188.7	190.3			201.0	202.5	1.5	100
							36	190.3	191.8			202.5	204.0	1.5	100
201.0	210.0	100	2	Ogud	Zone of more fine scale veining/breciation in fine grained dolomitised calcarenite.	Bedding 204.5m 70° to c/a minor blebs of sphalerite @ 201.4 - 201.6m.		37	191.8	193.4		204.0	205.5	1.5	100
							38	193.4	194.9			205.5	207.0	1.5	100
							39	194.9	196.5			207.0	208.5	1.5	100
							40	196.5	198.0			208.5	210.0	1.5	100
							41	198.0	199.5			210.0	211.5	1.5	100
210.0	214.0	100	2	Ogud	Zone of increased dolomite veining 50° to c/a; dolomitised calcarenite			42	199.5	201.0		211.5	213.0	1.5	100
								43	201.0	202.5		213.0	214.5	1.5	100
								44	202.5	204.0		214.5	216.0	1.5	100
								45	204.0	205.5		216.0	217.5	1.5	100
214	217.8	100	2	Ogud	Almost a breccia - fine scale dolomite veining + fracturing - stockwork	Minor disseminated sphalerite associated mainly with veining & minor pyrite		46	205.5	207.0		217.5	218.6	1.1	100
								47	207.0	208.5		218.6	219.3	0.5	55
								48	208.5	210.0		219.3	220.5	1.2	100
								49	210.0	211.5		220.5	222.0	1.5	100
217.8	218.1	100	5	Ogud	Fractured + veining zone	Blobs of sphalerite		50	211.5	213.0		222.0	223.5	1.5	100
								51	213.0	214.5		223.5	225.0	1.5	100
218.1	220.9	90	3	Ogud	Alteration/fractured zone localised calcite/dolomite vein brecciation	Minor veinlets of pyrite light grey cal/dol alteration patches.		52	214.5	216.0		225.0	226.5	1.5	100
								53	216.0	217.8		226.5	228.0	1.5	100
								54	217.8	218.1		228.0	229.5	1.2	80
								55	218.1	219.3		229.5	231.0	1.5	100
220.9	225.2	100	2	Ogud	Med/fine grained dark grey dolomitised calcarenite with argillaceous bands (beds) or stylolites; extensively dolomitised	65° to c/a bedding Minor calcite dominated cal/dol veining		56	219.3	220.5		231.0	232.5	1.5	100
								57	220.5	222.0		232.5	234.0	1.5	100
								58	222.0	223.5		234.0	235.5	1.5	100
								59	223.5	225.0		235.5	237.0	1.5	100
								60	225.0	226.5		237.0	238.5	1.5	100
								61	226.5	228.0		238.5	240.0	1.5	100
								62	228.0	229.5		240.0	241.5	1.5	100

note no sub 532 55

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

TENEMENT NAME PROFESSOR RANGE No. 99
SHEET No. 8

CO-ORDINATES 365944 E 5351907 N AZIMUTH 50° DRILLERS DDTAS COMMENCED 19.7.95 DEPTH 274 HOLE No. ZR104
RL COLLAR..... INCLINATION..... DRILL TYPE 4650 COMPLETED..... CASING LEFT..... DPO No(s).....

DEPTH		Core Rec %	RQ DATA	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by.....)				
From (M)	To (M)										REC (ppm)	REC (G)	REC (G)	REC (%)	
225.2	231	100	3	Ogud	Dolomitised fine grained micritic calcarenite with bird's eyes and or bioherms some argillaceous material locally well fractured and broken core ? fault zone.	Significant increase in small scale veining bearing locally stockwork - calcite veining; small amount of semi massive pyrite at 226.4m.	54 65 66 67 68 69	229.5 231.0 232.5 234.0 235.5 237.0	231.0 232.5 234.0 235.5 237.0 238.5			241.5 243.0 244.5 246.0 247.5 249.0	243.0 244.5 246.0 247.5 249.0 250.5	1.5 1.5 1.5 1.5 1.5 1.5	100 100 100 100 100 100
231.0	235.5	100	1	Ogud	Dark grey fine grained partially dolomitised argillaceous calcarenite ? siltstone transition ? localised zones of lighter grey material; see thin nodular beds eg 235.55 locally extensively dolomitised	Thin calcite vanelets abundant	70	238.5	240.0			250.5 252.0 253.5 255.0 256.5 258.0 259.5	252.0 253.5 255.0 256.5 258.0 259.5 260.5	1.5 1.5 1.5 1.5 1.5 1.5 1.3	100 100 100 100 100 100 100
236.5	244.6	100	1	Ogud	Dolomitised mixed argillaceous calcarenite; minor ? syndes brecciation	Thin calcite stringer veins.	71 72 73	240.0 241.5 243.0	244.5 243.0 244.5			264.0 265.1 266.7 268.2	265.1 266.7 268.2 269.7	1.1 1.6 1.5 1.6	100 100 100 100
244.5	245.1	100	1	Ogud	Shear zone - brecciated dolomite shear 45° to c/A; abundant calcite/dolomite veining	minor scattered Kobs + stringers of sphalerite. Graphite surfaces.	74	244.5	245.1			261.8 271.4 272.5	269.7 271.4 272.5	1.6 1.1 1.5	100 100 100
245.1	250.25	100	2	Ogud	Dolomitised dark grey argillaceous calcarenite; small scale carbonate breccia zones.	Minor scattered pyrite kobs. caldol stringer veining Rare sphalerite kobs. Laminated pyrite zone @ 249.8m 2cm with minor sphalerite (+ galena)	75 76 77 78	245.1 246.0 247.5 249	246.0 247.5 249 250.25						

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