CRA EXPLORATION PTY. LIMITED

DRILL-HOLE SUMMARY LOG

384031

HOLE NAME: DD96ZG446 AMG EAST 364487 NORTH 5349450

PROSPECT GRIEVES. GRID EAST 61150 NORTH 47900.

EL: ZEEHAN 4 EL3889 RL 140m. DEPTH 242.5m

DATE DRILLED: 6/2/1996

LOGGED BY: S. RUSSELL

DRILLING CO.: DDTAS.

DRILL TYPE: DD

DRILL RIG: LY38.

LOC DRILL CORE: ZEEHAN.

SURVEYS:

DEPTH	AZIM (AMG)	DIP	DEPTH	AZIM (AMG)	DIP
51	160	-86.5°			
101	167	-86.5°			
155	175	-86°			
207	192	-86°			
240.	193	-87°			

OBJECTIVES OF HOLE:

TEST DOWN-DIP EXTENSION OF MINERALISATION IN DD93ZG107 AND DD95ZG406.

LITHOGICAL SUMMARY:

FROM	TO	FORM CODE	COMMENTS
0	4.3	Qha.	overburden.
4.3	9.1.	Ogul.	Calcarenite + occasional bioclasts.
9.1	14.1	Ogmul.	Laminated bioclastic micrite
14.1	61.8	Ogul.	Calcarenite + argillaceous material, + burrowing/bioturbation
61.8	70.6	Ogdl.	Medium to coarse grained dolomitised calcarenite.
70.6	75.8	Ogul.	Calcarenite, locally micritic + bands of argillaceous calcarenite
75.8	81.0	Ogmul.	Fenestral limestone (Micritic).
81.0	82.0	Ogdl.	Dolomitised calcarenite.
82.0	94.0	Ogmul.	Laminated micrite.
94.0	119.5	Ogul.	Calcarenite + argillaceous content + variable bioclasts.
119.5	135.2	Ogmul.	Micrite unit.
135.2	179.8	Ogul.	Calcarenites with variable argillaceous content + some red beds
179.8	193.5	Ogsd.	Siderite zone.
193.5	194.4	Ogdl.	Shear zone of extensively dolomitised calcarenite
194.4	215.4	Ogoo	Oolite unit - equigranular, bioclastic.
215.4	222.6	Ogsd.	Siderite zone.
222.6	229.1	Ogdc.	Dark grey/black clays
229.1	239.1	Ogst	Silty transition = clays + white sst fragments.
239.1	242.5	Oqa	Grey quartzite.

MINERALISATION SUMMARY:

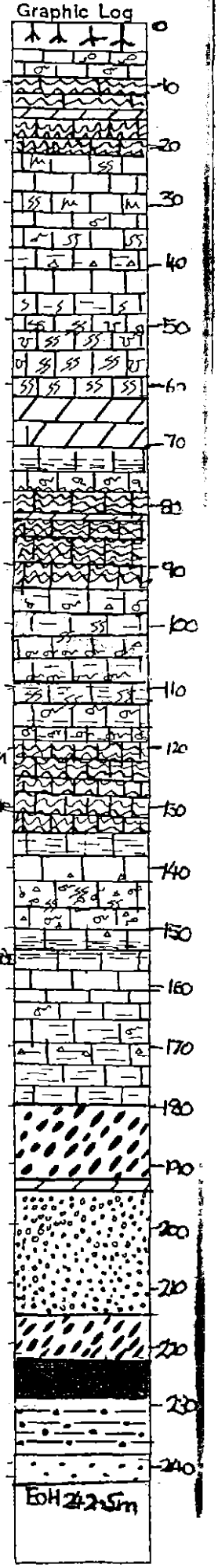
FROM	TO	COMMENTS
184.5	185.8	3.35% Zinc in siderite
190.4	193.2	2.17% Zinc in siderite
216.0	223.4	2.58% Zinc } in siderite 0.31% Lead }

COG = 1% Zn
0.1% Pb

CONCLUSIONS:

Two mineralised horizons either side of the Oolite Unit.
No ferruginous clays in between the two horizons.
Lower horizon is lead-enriched.

Graphic Log



AMG: 364487 E 6115OE Local Grid
3349450 N

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

SHEET No. 1/11

TENEMENT NAME GRIEVES No. EL 3889

PLAN – MAP REFERENCE Zeehan 4 DD96

CO-ORDINATES 47900N AZIMUTH 131(Mag) DRILLERS DDTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/1996 CASING LEFT DPO No(s) 77400

DEPTH To(M)	REC %	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)
4.3	0	–	Cha	No Recovery	–			
9.1	100	2F	Cgul	Grey, fine grained calcarenite, locally micritic. Approx. 10% interstitial argillaceous calcarenite. Occasional bioclasts (dominantly bivalves) up to 2cm Ø.	- Fine calcite veinlets. - Local syngedimentary deformation / brecciation.	5471201	4.3	6.0
12.6	60	3F	Cgmu	Laminated, fine-medium grained lmst/calcarenite grading into a coarse bioclastic base (gastropods + bivalves) up to 2cm diameter	More pronounced calcite veining + replacement of bioclasts. C/A = 45° Bedding. PAC.			
14.1	90	2F	Cgmu	As above - with smaller, less coarse bioclastic unit @ base. The laminated calcarenite has disturbed + burrowed (?) laminae. Minor compactional stylolites.	(C/A = angle to long core axis)			
16.3	100	2F	Cgul	Grey fine grained calcarenite, locally micritic. Occasional bioclasts (up to 1cm) Grades into an interlaminated calcarenite (grey) + argillaceous calcarenite (dk grey) unit. Possible hardgrounds (?) or exploitation of weaknesses by calcite veinlets. Terminated by a medium-coarse bioclastic unit. Heavy/bioturbation. Intense	Fairly regular contact / abrupt termination by bioclastic unit above. C/A of contact = 30° Local syngedimentary breccias present.	5471202	15.0	17.1

ASSAY VALUES (Analysed by .....)

MAG SUS DEPTH	MAG SUS VALUE	REC From	REC To	REC (m)	REC %
4.5	0	0	4.3	0	0
5.0	0	4.3	6.0	1.65	97
5.5	8	6.0	9.0	2.80	93
6.0	0	9.0	12.0	1.80	60
6.5	6	12.0	13.7	1.25	74
7.0	5	13.7	15.0	1.30	100
7.5	0	15.0	17.1	1.90	90
8.0	0	17.1	18.9	1.60	89
8.5	0	18.9	21.2	2.20	100
9.0	0	21.2	22.7	1.50	100
9.5	6	22.7	25.5	2.25	80
10.0	5	25.5	27.0	1.40	93
10.5	0	27.0	30.0	3.0	100
10.0	5	30.3	33.0	2.6	87
11.5	7	33.0	35.8	1.7	94
12.0	5	35.8	38.9	2.3	74
12.5	8	38.9	42.0	2.6	84
13.0	0	42.0	43.2	1.2	100
13.5	15	43.2	44.6	1.2	86
14.0	10	44.6	45.9	1.1	85
14.5	10	45.9	48.0	1.9	90
15.0	6	48.0	49.3	1.1	85
15.5	7	49.3	50.9	1.4	88
16.0	9	50.9	52.5	1.3	81
16.5	5	52.5	54.0	1.6	100
18.0	9	54.0	54.7	0.7	100
17.5	5	54.7	55.7	0.9	90
18.0	5	55.7	58.7	3.0	100
18.5	8	58.7	60.9	2.0	91
19.0	9	60.9	62.1	1.2	100
19.5	7	62.1	63.7	1.3	81

3644876E } AMG
S349450N.J
61150E Local Grid

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

SHEET No. 2/4

TENEMENT NAME GRIEVES No. 38/89

PLAN – MAP REFERENCE

CO-ORDINATES 47900N AZIMUTH 131 (Mag) DRILLERS ODTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. ZG 416

RL COLLAR 140m INCLINATION 85 DRILL TYPE LY38 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

DEPTH From (M)	DEPTH To(M)	Rec %	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	ASSAY VALUES (Analysed by MAG SUS) Depth	Value	Rec From	Rec To	Rec (m)	Rec %
16.3	22.7	90	1F	Ogul	Grey laminated medium grained calcarenite with local micrites. Discrete dk grey-black 2-3cm argillaceous bands of calcarenite. Occassional bioclasts up to 1cm diameter + local compactional syn sedimentary stylolites. Some (= 5-10%) interstitial argillaceous calcarenite.	Regular contact with above unit parallel to bedding (C/A = 45°) Local pyrite mineralisation exploiting argillaceous unit adjacent to contact. C/A bedding = 90° at 16.7m + returns to 45° @ 17.1m				20.0	10	63.7	65.2	1.3	87
										20.5	11	65.2	66.5	1.3	100
										21.0	9	66.5	67.8	1.2	92
										21.5	9	67.8	69.0	1.2	100
										22.0	8	69.0	70.5	1.5	100
										22.5	6	70.5	71.7	1.1	92
										23.0	10	71.7	73.2	1.3	87
										23.5	q/c	73.2	74.7	1.5	100
										24.0	9	74.7	76.4	1.6	94
										24.5	10	76.4	77.9	1.5	100
										25.0	10	77.9	79.7	1.6	89
22.7	29.195		1F	Ogul	Intermixed medium grained grey calcarenite with dk grey argillaceous calcarenite. Grades into a zone of discrete layers where argillaceous calcarenite can occur in bands up to 4-5cm. Occassional bioclasts, increasing in size and occurrence towards the base of the unit.					25.5	9	79.7	81.0	1.3	100
							5471203	24.0	25.5	26.0	5	81.0	82.4	1.2	86
										26.5	7	82.4	84.0	1.5	94
										27.0	6	84.0	85.6	1.3	81
										27.5	q/c	85.6	88.5	2.9	100
										28.0	q/c	88.5	90.0	1.5	100
										28.5	5	90.0	90.9	0.9	100
										29.0	5	90.9	92.3	1.4	100
										29.5	9	92.3	93.7	1.4	100
										30.0	5	93.7	95.0	1.2	92
										30.5	8	95.0	96.5	1.5	100
29.1	31.7	180	1F	Ogul	Course bioclastic, high energy unit. Contains bivalves (up to 2 cm) + gastropods (up to 2 cm). Medium grained, grey calcarenite. Rare corals (2cm Ø). Intense bioturbation + occurrence of discrete argillaceous bands.	C/A 45° bedding.				31.0	8	96.5	98.0	1.5	100
										31.5	5	98.0	99.6	1.6	100
										32.0	10	99.6	101.2	1.6	100
										32.5	5	101.2	102.7	1.5	100
										33.0	2	102.7	104.4	1.7	100
										33.5	5	104.4	106.4	2.0	100
										34.0	9	106.4	107.9	1.4	93
										34.5	10	107.9	109.5	1.6	100
										35.0	5	109.5	111.0	1.5	100

3840333

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 3/11

364487 E } AMG
5349450 N
61150 E Local Grid
47900 N

TENEMENT NAME GRIEVES No. 38/89

PLAN – MAP REFERENCE

CO-ORDINATES AZIMUTH 131 (Mag) DRILLERS DDTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. DD96 ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/1996 CASING LEFT DPO No(s) 77400

DEPTH From (M)	DEPTH To(M)	Rec. %	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	ASSAY VALUES (Analysed by.....) Mag Sus Depth	Mag Sus Value	Rec From	Rec To	Rec (m)	Rec %
31·7	33·6	70	5F	Ogfz	Possible Fracture Zone	Fracture zone.	6471204	32·2	33·5	35·5	9	111·0	112·5	1·5	100
					Broken core - medium grained					36·0	5	112·5	115·5	3·0	100
					grey calcarenite containing					36·5	5	116·5	117·4	1·6	84
					large amnt of clays.					37·0	4	117·4	118·4	1·0	100
33·6	37·5	90	1F	Ogwl	Intermixed / Interstitial	Discrete shear zone parallel				37·5	5	118·4	120·5	1·75	83
					(30-40% argillaceous)	to length of core.				38·0	2	120·5	121·3	0·7	88
					grey medium/fine calcarenite	Minor calcite veining.				38·5	8	121·3	123·2	1·2	63
					+argillaceous calcarenite.					39·0	7	123·2	124·5	1·1	85
					large degree of fracturing					39·5	5	124·5	125·9	1·45	100
					Some bioturbation + occasional					40·0	5	125·9	128·0	1·2	57
					bioclasts (up to 1cm)					40·5	6	128·0	129·6	1·5	94
37·5	38·9	95	5F	Ogfz	Broken core as above.	Fracture zone				41·0	11	129·6	130·1	0·5	100
38·9	39·9	85	2F	Ogwl	As for 33·6 - 37·5 - with					41·5	9	130·1	130·9	0·8	100
					less argillaceous material		5471205	39·6	40·6	42·0	4	130·9	132·1	1·0	83
					(5-10% interstitial)					42·5	9	132·1	133·6	0·5	33
39·9	42·5	100	3F	Ogwl	Grey fine grained	Possibly partial / slight				43·0	4	133·6	135·0	1·1	79
					calcarenite - micrite, with	dolomitisation.				43·5	2	135·0	136·4	1·2	86
					some birdseye textures.					44·0	5	136·4	138·2	1·2	67
					10-15% interstial argillaceous					44·5	4	138·2	139·8	0·7	44
					material. Intensely					45·0	5	139·8	141·0	1·1	92
					bioturbated.					45·5	6	141·0	144·0	3·0	100
42·5	43·6	90	5F	Ogfz	Fracture zone - medium -	Fracture zone				46·0	4	144·0	146·3	2·2	96
					fine grained calcarenite +	Calcite veining/replacement				46·5	5	146·3	149·5	2·4	75
					10-20% argillaceous dk grey	of argillaceous units. Minor				47·0	5	149·5	152·0	2·8	100
					calcarenite. Minor - no bioclasts	pyrite contained within				47·5	5	152·0	152·9	0·9	100
					present.	calcite veins/replacements.				48·0	4	152·9	155·7	2·8	100
43·6	45·6	95	3F	Ogwl	As above, with more					48·5	8	155·7	158·3	2·6	100
					pronounced replacement of arg.					49·0	9	158·3	161·0	2·7	100
					material by calcite.					49·5	7	161·0	161·9	0·9	100
45·6	46·[illegible]	100	5F	Ogfz	As above - fracture zone.	Fracture zone.				50·0	6	161·9	163·5	1·6	100
										50·5	5	163·5	164·9	1·4	100

38403

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 4/4

TENEMENT NAME GRIEVES No. 38/89

PLAN – MAP REFERENCE JD96

AMG: 364487E

CO-ORDINATES 5344850N AZIMUTH 131 (Mag) DRILLERS DOTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

DEPTH From (M)	DEPTH To (M)	Rec. %	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)
46.1	48.7	90	3F	ogwl	Discrete 1-2cm argillaceous dk grey calcarenite in fine grained calcarenite. Some burrowing + local synsedimentary brecciation	Minor calcite veins c/A BPs = 40° Some shear on calcite veins = mineral lineations	5471206	48.0	49.3
48.7	60.4	90	2F	ogwl	Intensely burrowed + bioturbated grey fine grained calcarenite - locally micritic	Calcite veins up to 1.5cm wide increasing towards base of unit. dominantly @ 90° to core	5471207	58.7	60.0
							5471208	60.0	60.9
60.4	61.8	95	4F	ogwl	Medium grained calcarenite (dk grey) - no obvious argillaceous layers. Possible partial dolomitisation	Minor → intense calcite veining (coarsely crystalline	5471209	60.9	62.1
61.8	65.5	85	4F	ogdl	Fractured medium to coarse grained calcarenite with partial - extensive dolomitisation.	Fracture zone. Calcite veins contain small angular fragments of host rock. Pyrite present in some calcite veins.	5471210	62.1	63.7
							5471211	63.7	65.2
65.5	66.9	100	2F	ogdl	Medium grained grey - dk grey calcarenite Minor dolomitisation.	Zone of medium to intense calcite veining (@ 90° ^ to core) Local hydrothermal breccias in veins ≥ 4cm diameter.	5471212	65.2	66.5
66.9	70.6	90	3F	ogdl	Medium - coarse grained calcarenite; partial - extensive dolomitisation Local bioturbated units.	Calcite veins with angular fragments of host rock common Core heavily fractured towards base	5471213	66.5	67.8
							5471214	67.8	69.0
							5471215	69.0	70.5
70.6	71.7	75	5F	ogwl	Dk grey rotted limstone with high clay content + calcite veining	Calcite + pyrite veining	5471216	70.5	71.7
71.7	73.0	90	3F	ogwl	As above - some fresh calcite veining. Occasional bleeds to angle to long axis of 30°	Secondary(?) pyrite @	5471217	71.7	73.2

ASSAY VALUES (Analysed by .....)

Mag Sus Depth	Mag Sus value	Rec From	Rec (To)	Rec (m)	Rec %
51.0	6	164.9	165.7	0.8	89
51.5	5	165.7	168.0	2.1	91
52.0	6	168.0	170.2	2.2	100
52.5	8	170.2	171.0	0.8	100
53.0	5	171.0	174.0	3.0	100
53.5	10	174.0	176.7	2.7	100
54.0	5	176.7	179.2	2.5	83
54.5	6	179.2	180.6	0.6	67
55.0	5	180.6	184.5	0.2	5
55.5	6	184.5	185.2	0.7	54
56.0	10	185.2	187.4	0.9	56
56.5	6	187.4	188.9	1.5	100
57.0	8	188.9	190.4	0.9	60
57.5	20	190.4	191.9	1.5	100
58.0	9	191.9	193.2	1.1	92
58.5	5	193.2	195.7	2.5	100
59.0	10	195.7	196.9	1.2	100
59.5	9	196.9	198.5	1.2	75
60.0	10	198.5	201.0	0	0
60.5	5	201.0	203.1	0.8	38
61.0	21	203.1	205.1	1.6	80
61.5	14	205.1	206.9	1.6	89
62.0	5	206.9	208.5	1.6	100
62.5	30	208.5	210.0	1.5	100
63.0	20	210.0	213.0	3.0	100
63.5	5	213.0	216.0	2.7	90
64.0	5	216.0	218.3	1.9	83
64.5	15	218.3	221.6	2.5	76
65.0	25				
65.5	5				
66.0	5				

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 5/11

TENEMENT NAME GRIEVES No. 38189

PLAN – MAP REFERENCE DD96

AMG: 3644876E

CO-ORDINATES 5349450N AZIMUTH 131 (Mag) DRILLERS DOTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. ZGH16

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

DEPTH From (M)	DEPTH To (M)	Rec. %	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) Mag SUS. Depth	Value	REC (From)	REC (To)	REC (m)	REC %
73.0	75.8	100	1F	Ogul	Fine grained calcarenite - locally micritic with bands of ag. calcarenite (dk grey) up to 3cm wide. Grades into a heavily bioturbated/burrowed calcarenite	Very minor calcite veinlets B/Ps @ 45° C/A. Some shearing/shear planes.					66.5	25	221.6	222.4	0.4	50
											67.0	10	222.4	226.2	1.9	50
											67.5	24	226.2	227.6	1.4	100
											68.0	19	227.6	229.1	1.85	100
											68.5	15	229.1	230.6	1.2	80
75.8	78.3	100	1F	Ogul	Fenestral limestone/calcarenite Dominantly micritic with argillaceous filled fenestrae occasional bioclasts.	Little - no calcite veining					69.0	22	230.6	234.0	1.7	50
											69.5	23	234.0	236.6	1.8	70
											100	22	236.6	239.5	2.0	69
											70.5	10	239.5	240.8	0.3	22
78.3	81.0	90	2F	Ogmu	Main micrite unit. Pale grey, v. fine grained with anastomosing compactional stylolites.	Little to no veining Some pyrite on fracture surface.					71.0	26	240.8	242.5	0.5	30
											71.5	10				
											72.0	5				
											72.5	5				
81.0	82.0	80	5F	Ogdl	Fracture zone - broken core Extensive dolomitisation: more coarsely grained angular core fragments	Fracture zone					73.0	10				
											73.5	10				
											74.0	6				
											74.5	10				
82.0	82.4	70	4F	Ogmu	Micrite Unit: As for 78.3-82m	Minor calcite veinlets.					75.0	15				
82.4	84.3	60	3F	Ogmu	Broken core - (as 81-82m) Significant clays (drillers mud?) towards base. Micrite.	Fracture zone					75.5	18				
											76.0	14				
											76.5	10				
84.3	88.9	90	2F	Ogmu	Laminated micrite (pale grey) with common calcite filled birdseyes.	Minor calcite veining laminations @ 90° C/A.	547128	84.2	85.6		77.0	5				
											77.5	10				
											78.0	5				
88.9	90.3	95	4F	Ogmu	Pale grey micrite with some sand filled cavities (birdseyes). Significant fracturing of core	Fracture zone					78.5	6				
											79.0	10				
											79.5	9				
											80.0	6				
90.3	92.2	95	3F	Ogmu	Laminated pale grey micrite with variable fracturing Small calcite veinlets. (< 1cm)	Some shearing + presence of clays.					80.5	9				
											81.0	11				
											81.5	10				

3840360

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 6/11

TENEMENT NAME GRIEVES No. 3889

PLAN – MAP REFERENCE

CO-ORDINATES AMG 364487E 5349450N AZIMUTH 131° (Mag) DRILLERS DOTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. DD96ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

DEPTH From (M)	DEPTH To (M)	Rec. %	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by) Mag Sus Depth	Value
92.2	94.0	70	4F	Ogmw	broken micrite - some 'rotted' surfaces. Compactional stylolites common	Fracture zone					82.0	10
											82.5	5
											83.0	5
94.0	95.1	90	3F	Ogwl	Fine grained calcarenite locally micritic with ≈ 20% interstitial argillaceous calcarenite	Significant syn sedimentary deformation on local scale (1cm displacement)					83.5	5
											84.0	0
											84.5	4
											85.0	6
95.1	98.2	90	2F	Ogwl	Fine-medium grained darker grey calcarenite, occasionally micritic. ≈ 5% interstitial argillaceous calcarenite. Occassional bioclasts + calcite filled birdseyes	Calcite filled vugs + rare calcite veinlets. Pyrite occurs on some fracture surfaces.	5471219	95.0	96.5		85.5	4
											86.0	7
											86.5	10
											87.0	9
											87.5	10
											88.0	6
											88.5	10
98.2	101.2	100	1F	Ogwl	Intensely burrowed + bioturbated fine grained calcarenite, with ≈ 25% argillaceous calcarenite occassional bioclasts (gastropods < 1cm)	Calcite veinlets					89.0	11
											89.5	10
											90.0	10
											90.5	5
											91.0	6
											91.5	5
101.2	104.6	100	1F	Ogwl	Variably bioturbated grey calcarenite with common bivalves + gastropods (< 1cm) + large colonial corals (BRYOZOAN) (up to 6cm diameter)	Colonial corals = possible marker horizon.	5471220	104.4	106.4		92.0	11
											92.5	6
											93.0	6
											93.5	8
											94.0	10
104.6	106.0	90	2F	Ogwl	Medium grained calcarenite, with 3 bands 1-2cm wide containing abundant bioclasts (< 1cm) (gastropods + bivalves). Partial dolomitisation.	Minor calcite veining.					94.5	6
											95.0	6
											95.5	10
											96.0	10
											96.5	10
											97.0	9

384037

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

SHEET No. 7/4
TENEMENT NAME Grieves No. 3809
PLAN – MAP REFERENCE
AMG 3644876E
CO-ORDINATES 5349450N AZIMUTH 131° (Mag) DRILLERS ODTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. JD96 2GT416
RL COLLAR 140m INCLINATION 85° DRILL TYPE LY88 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

DEPTH From (M)	DEPTH To(M)	Rec. (%)	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)	ASSAY VALUES (Analysed by .....) mag sus Depth	Value
106.0	107.1	95	2F	Ogul	Intermixed arg. calcarenite + some micrites. Small (<1cm) bioclasts - possibly some tetradiums.						97.5	9
											98.0	5
											98.5	6
											99.0	6
107.1	109.4	95	2F	Ogul	Laminated medium grained calcarenite + common bioclastic units =5cm wide =5% argillaceous calcarenite	Bips @ C/A 45°					99.5	5
											100.0	10
											100.5	5
											101.0	10
109.4	111.7	90	2F	Ogul	Intensely bioturbated unit - pale grey calcarenite +35% interstitial arg. calcarenite. Contains colonial corals (typical) bivalves + gastropods (up to 2cm ø) Grains become equigranular towards base.	Common calcite veins.					101.5	9
											102.0	6
											102.5	6
											103.0	6
											103.5	5
											104.0	9
											104.5	4
											105.0	5
111.7	113.5	95	1F	Ogul	Intercalated burrowed calcarenites/micrites with laminited calcarenites Occasional bioclasts (tetradiums + small bivalves)	Anastamosing calcite veins Contacts between burrowed/ intermixed zones with laminated zones = C/A 30°	547221	117.4	118.4	105.5	105.5	5
											106.0	4
											106.5	5
											107.0	6
											107.5	5
113.5	114.6	100	2F	Ogul	Broken core: grey medium grained calcarenite with discrete 1-2cm arg. calcarenite layers. Possible partial dolomitisation.	Fracture zone					108.0	2
											108.5	2
											109.0	9
											109.5	0
											110.0	10
114.6	117.4	95	2F	Ogul	Medium grained calcarenite + discrete arg. calcarenite bands. Local synsedimentary deformation common. Minor bioclastic bands present throughout	Arg. units @ 45° C/A.					110.5	4
											111.0	4
											111.5	5
											112.0	5
											112.5	7

3840038

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

SHEET No. 8/11

TENEMENT NAME GRIEVES No. 38189

AMG 364487 E

PLAN – MAP REFERENCE DP96

CO-ORDINATES 5349450N AZIMUTH 131 (Mag) DRILLERS DOTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

DEPTH From (M)	DEPTH To (M)	Rec. (%)	RQD	Graphic Log	CORE DESCRIPTION	SPECIAL FEATURES Weath, Alteration, Fracturing, Veining, Mineralization	Sample No.	From (M)	To (M)	Rec (M)
117.4	119.5	70	5F	ogfz	Dominantly broken core; Grey calcarenite with 30-40% interstitial argillaceous calcarenite. Numerous bioclasts (dominantly bivalves up to 0.5cm) replaced by calcite. Local micritic units present.	Fracture zone. Little - no calcite veining				
119.5	126.0	90	2F	ogmu	Micrite unit, locally fine grained calcarenite with variable interstitial arg. calcarenite. Rare bioclasts.	Faulted clay zone from 122.3m → 123.3m				
126.0	135.2	80	2F	ogmu	Pale grey micrite unit with compactional stylolites + laminations. Rare - no bioclasts	Minor calcite veins. Common fracturing + presence of clays/sands	5471222	130.1	132.1	
135.2	136.8	85	2F	ogwl	Grey calcarenite + locally micrite unit, with increasing clays towards base. ≈ 20% interstitial argillaceous calcarenite. Rare bioclasts.	Minor calcite veins + veinlets				
136.8	140.0	65	5X	ogwl	Pale pink/brown calcarenite medium grained. Local pale grey micrite units. Significant core loss/erosional surface)	Significant calcite veins towards base. ~ Typical emergent conditions (TOP OF PAC).	5471223	136.4	139.8	
							5471224	139.8	141.0	
140.0	145.3	95	2X	ogwl	Grey calcarenite, locally micritic with increasing argillaceous calcarenite content downwards large component of clays. Occasional birdseyes (calcite filled). Increased bioclasts (<0.5cm) + minor bioturbation at base.	Minor calcite veins with common 0.5 - 1cm displacements.	5471225	141.0	144.0	
							5471226	144.0	145.2	

ASSAY VALUES (Analysed by .....)

Mag Sus Depth	Value	Mag Sus Depth	Value
113.0	6	128.5	0
113.5	5	129.0	0
114.0	10	129.5	0
114.5	5	130.0	5
115.0	5	130.5	5
115.5	5	131.0	3
116.0	6	131.5	0
116.5	5	132.0	2
117.0	5	132.5	5
117.5	5	133.0	c/L
118.0	7	133.5	5
118.5	9	134.0	5
119.0	9	134.5	c/L
119.5	4	135.0	5
120.0	5	135.5	15
120.5	2	136.0	0
121.0	6	136.5	2
121.5	6	137.0	4
122.0	5	137.5	c/L
122.5	4	138.0	15
123.0	6	138.5	c/L
123.5	9	139.0	c/L
124.0	6	139.5	0
124.5	4	140.0	0
125.0	5	140.5	0
125.5	4	141.0	6
126.00	0	141.5	9
126.5	0	142.0	4
127.0	5	142.5	12
127.5	4	143.0	11
128.0	0	143.5	5

384039

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 9/11

TENEMENT NAME GRIEVES. No. 38189

PLAN – MAP REFERENCE

364487E ? AMG
5349450N

CO-ORDINATES 6115OE 47900N AZIMUTH 131 (Mag) DRILLERS ODTAS COMMENCED 6/2/1996 DEPTH 242.5m HOLE No. DD96ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/1996 CASING LEFT DPO No(s) 77400

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 ...) Mag Sus depth	Mag Sus value	Mag Sus depth	Mag Sus value	Mag Sus depth	Mag Sus Value
145.3	152.0	95	3X	Ogul	Grey calcarenite - (fine grained) capped	- Significant fracturing of core	5471227	145.2	146.3		144.0	15	159.5	4	175	4
					by pink coloured calcarenite	- Calcite veining.	5471228	146.3	149.5		144.5	15	160.0	8	175.5	4
					at top of interval (20cm).	- Possible fracture zone	5471229	149.5	151.7		145.0	15	160.5	15	176	3
					Some elongated calcite filled		5471230	151.7	152.9		145.5	15	161.0	7	176.5	2
					birdseye structures are present.						146.0	9	161.5	10	177	13
					occasional bioclasts.	Fractures along b/ps @ 45°	5471231	152.9	154.0		146.5	8	162.0	13	177.5	3
152.0	156.0	100	2F	Ogul	Dark grey argillaceous	angle to core axis.					147.0	9	162.5	20	178	10
					calcarenite - rare to no	Minor calcite veining.					147.5	12	163.0	14	178.5	15
					macroscopic bioclasts.	Some shearing surfaces					148.0	C/L	163.5	11	179	40
156.0	166.2	95	2	Ogul	Grey calcarenite - fine-	Minor calcite veining					148.5	C/L	164.0	5	179.5	C/L
					medium grained, with	Bedding = ≃45° C/A.					149.0	0	164.5	4	180	20
					30-40% interstitial argillaceous						149.5	0	165.0	9	180.5	75
					calcarenite. Occasional						150.0	5	165.5	26	181	C/L
					birdseyes + rare bioclasts.						150.5	4	166.0	19	181.5	C/L
166.2	167.2	100	3X	Ogul	Reddened clay zone		5471232	165.7	168.0		151.0	0	166.5	4	182	C/L
					(possibly represents						151.5	18	167.0	60	182.5	C/L
					top of PAC)						152.0	18	167.5	5	183.0	C/L
167.2	172.5	100	2F	Ogul	Intermixed grey fine grained	Fine calcite veinlets, +					152.5	10	168.0	0	183.5	13
					calcarenite + argillaceous dk	occasional argillaceous horizons					153.0	15	168.5	8	184	C/L
					grey calcarenite. Occasional	replaced by calcite May also					153.5	10	169.0	5	184.5	C/L
					calcite filled birdseye features	contain red (ferruginous?)					154.0	11	169.5	11	185	65
					towards base	material. B/Ps @ 45° C/A.					154.5	2	170.0	25	185.5	47
172.5	176.8	100	2F	Ogul	Grey, medium grained	Minor 10cm clay zone @	5471233	174.0	176.0		155.0	4	170.5	7	186	65
					calcarenite containing	174m.					155.5	22	171.0	5	186.5	42
					abundant bioclasts (<0.3cm)	Calcite veining.					156.0	5	171.5	3	187	35
					+ birdseye structures. Large						156.5	10	172.0	0	187.5	C/L
					(8cm Ø) clast of red siltstone						157.0	C/L	172.5	0	188	96
					/calcisiltite within calcarenite						157.5	10	173.0	0	188.5	70
					@ 176.4m, indicative of shallow						158.0	10	173.5	3	189	50
					marine/emergent conditions (see ITAAC).						158.5	8	174.0	5	189.5	25
											159.0	0	174.5	3	190	55

384040

364487E } AMG
5349450N }

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

SHEET No. 10 / 11

TENEMENT NAME GRIEVES No. 38/89

PLAN – MAP REFERENCE

CO-ORDINATES 6115OE 47900N AZIMUTH 131 (Mag) DRILLERS DOTAS COMMENCED 6/2/96 DEPTH 242.5m HOLE No. DD96 ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

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) MAG SUS Depth	MAG SUS Value	MAG SUS Depth	MAG SUS Value
176.8	177.0	100	3F	Ogwl	Medium grained grey calcarenite		5471234	176.0	178.0		190.5	c/L	206	18
					with discrete 0.5cm horizons						191	38	206.5	11
					of argillaceous calcarenite.						191.5	45	207	37
177.0	178.6	90	3X	Ogwl	Grey medium grained	Minor calcite veining,	5471235	178.0	178.7		192	180	207.5	28
					calcarenite, 5-10% interstitial	Significant fracturing of					192.5	78	208	46
					argillaceous calcarenite.	core.					193	75	208.5	40
178.6	179.8	20	3X	Ogwl	Red medium grained calcisiltite		5471236	178.7	179.7		193.5	60	209	12
					(top of PAC) - undergone subaerial		5471237	179.7	180.6		194	27	209.5	9
					exposure.		5471238	183.0	184.5		194.5	38	210	20
179.8	193.3	52	2X	Ogsd	Zone of sideritic alteration,	Possible shear zone causing	5471239	184.5	185.8		195	30	210.5	20
					Partially rotted, with slight	siderite alteration.	5471240	185.5	187.4		195.5	23	211	20
					reaction with acid. Remnant	- Grey/Brown/colouration.	5471241	187.4	188.9		196	18	211.5	22
					red-bed @ 190.4m.	Olive Green	5471242	188.9	190.4		196.5	65	212	33
193.3	193.5	100	2F	Ogsd	Non calcareous red siltstone/		5471243	190.4	191.9		197	50	212.5	180
					sandstone with sharp		5471244	191.9	193.2		197.5	75	213	15
					upper contact - possibly sheared		5471245	193.2	194.4		198	25	213.5	8
193.5	194.4	100	3X	Ogdl	Sheared zone of calcarenite,	Shear zone.	5471246	194.4	195.7		198.5	30	214	5
					extensively dolomitised.		5471247	195.7	196.9		199	c/L	214.5	4
					Significant clay component		5471248	196.9	198.5		199.5	c/L	215	21
					Grey/Dk Grey colouration.		5471249	201.0	203.1		200	c/L	215.5	55
194.4	215.0	95	2F	Ogoo	Equigranular grey bioclastic	Calcite veining.	5471250	203.1	205.1		200.5	c/L	216	16L
					unit - (oolitic + calcareous).	Sideritic alteration	5471251	205.1	206.9		201	c/L	216.5	250
					Extensive dolomitisation,	(more minor than above	5471252	206.9	208.5		201.5	28	217	240
					(areas of white matrix	unit) increases density	5471253	208.5	210.0		202	20	217.5	220
					brecciation). Areas of	of core.	5471254	210.0	211.5		202.5	85	218	110
					red haematitic staining		5471255	211.5	213.0		203	c/L	218.5	200
215.0	215.4	100	2X	Ogoo	Shear zone - brecciated	Shear zone.	5471256	213.0	213.9		203.5	25	219	210
					dolomitised equigranular		5471257	213.9	215.7		204	0	219.5	150
					bioclastic unit		5471258	215.7	216.0		204.5	15	220	140
215.4	222.6	60	4X	Ogsd	Dk green/grey sideritic alteration	Pyrite present in some regions	5471259	216.0	218.3		205	8	220.5	240
					zone, partially rotted. Significant	clays. Brick red alteration @ 221m.	5471260	218.3	221.6		205.5	10	221	160

384041

C.R.A. EXPLORATION PTY. LIMITED

DRILL CORE LOG

SHEET No. 1 of 11

TENEMENT NAME Zeehan 4 No. 38/89

PLAN – MAP REFERENCE GRIEVES

CO-ORDINATES 364487 E AMG 5349450N AZIMUTH 131° (mag) DRILLERS DDTAS COMMENCED 6/2/96 DEPTH 242.5m HOLE No. DD96 ZG416

RL COLLAR 140m INCLINATION 85° DRILL TYPE LY38 COMPLETED 6/3/96 CASING LEFT DPO No(s) 77400

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)
222.6	229.1	75	5x	Ogdc	Dark grey/black clay – possible sheared zone.	Heavily pyritic as blebs and disseminations – localised	547126 61	221.6	222.6	
							62	222.6	223.4	
							63	223.4	226.2	
229.1	236.45	69	5x	Ogst	Dark grey/black clay with qtz sand grains – locally sandstone. Bedding 50° to c/A	?Magnetite grains @ 230.1m. minor dissem of pyrite.	64	226.2	227.6	
							65	227.6	229.1	
							66	229.1	230.6	
							67	230.6	234	
236.45	239.1	66	5x	Ogst	White/grey sandstone clay with white silt fragments. Possible bedding 60° to c/A.		68	234	236.45	
							69	236.45	239.5	
							70	239.5	242.5	
239.1	242.5	50	5x	Om	White/grey silicic massive looking quartzite; broken core + core loss Upper contact preserved. 60° to c/A.	V. minor hematite alteration at top of unit.				
					END OF HOLE	242.5m.				

ASSAY VALUES (Analysed by .....)

MAG Depth	MAG Value	SUS Depth	SUS Value
221.5	c/L	237	0
222	c/L	237.5	c/L
222.5	200	238	0
223	0	238.5	c/L
223.5	c/L	239	c/L
224	c/L	239.5	0
224.5	0	240	0
225	c/L	240.5	c/L
225.5	c/L	241	c/L
226	0	241.5	c/L
226.5	5	242	c/L
227	c/L	242.5	0
227.5	0		
228	0		
228.5	0		
229	0		
229.5	0		
230	c/L		
230.5	0		
231	c/L		
231.5	c/L		
232	c/L		
232.5	0		
233	c/L		
233.5	c/L		
234	0		
234.5	c/L		
235	40		
235.5	c/L		
236	c/L		
236.5	0		

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