

Mc ARTHUR RIVER MINING

DIAMOND DRILL HOLE HEADER SUMMARY SHEET

HOLE I.D.	:97/1	LOCATION (eg.drive name)	:2H8
GRID AZIMUTH	:137.0	DESIGN DEPTH (m)	:270
COLLAR INCLINATION	:-33.0	TOTAL DEPTH (m)	:292.9
<u>SURVEYED COLLAR CO-ORDINATES</u>		DATE STARTED	:20/11/97
EASTING	:7748.944	DATE FINISHED	:27/11/97
NORTHING	:1626.342	DRILLED BY	:LONGYEAR
RL	:9668.018	<u>CORE INTERVALS ASSAYED:</u>	
HOLE/CORE SIZE(S)	:0.0-2.2 PQ ; 2.2-EOH HQ	267.6-282.0 (#2)	
LOGGED BY	:SGP	1/4 CORE TO ASSAY LAB	
D/HOLE SURVEY METHOD	:EASTMAN SS	1/2 CORE FOR MET TESTING	
		LOCAL MAG. DEV.	: + 5
		(add to downhole survey azim. reading)	

RAW DOWNHOLE SURVEY DATA

Depth (m)	Azimuth(Mag)	Dip	Depth (m)	Azimuth(Mag)	Dip
10	132.5	-32.5	120	130	-36
30	133	-33	150	131	-37
56	133	-34	180	129	-38.5
90	132	-35	210	131	-39

ASSAY SUMMARY *Vein/Fault Orientation Measurements*

147.2	70° → 321 ✓	164.0	65° → 328 ✓	172.3	69° → 325
148.3	63° → 338	165.3	66° → 347 ✓	168.5	70° → 347
				195.1 (Flt surface)	60° → 335 ✓

O/B	TT	Zn%	Pb%	Ag g/t	Fe%
#2	4.9	18.2	6.4	75	6.8

Surveyed Collar & Geology Entered Into Micromine Database	<input type="checkbox"/>	:SP 03/04/98
Assays Entered Into Micromine Database	<input type="checkbox"/>	:SP 03/04/98
Surveyed Collar & Geology Transferred Into Vulcan Database	<input type="checkbox"/>	:
Assays Transferred Into Vulcan Database	<input type="checkbox"/>	:

Comments: HOLE SUCCESSFULLY INTERSECTED #2OB WITH MINIMUM INCIDENT

WATER PREVENTION MEASURES PROVED TO BE UNNECESSARY

McARTHUR RIVER MINING

GEOLOGICAL LOG SHEET

GEO: SCY HOLE: 97/1 VERSION: 15/01/95
 DATE: 2/12/97 PAGE: 1 of 3

TO	COL	WTH	CODE	G	LITHOLOGY				ALTERATION				SULPHIDES				FAULTING				STRUCTURE				COMMENTS
					LITH	TEX	DOL	VEIN	NO	CR	CO	PY	MIN	TYPE	NAM	Q	OXJ	REC	CORE	CUT	DEPTH	BCA	A1	OTH	
7	3	3	4	1	5	3	3	3	3	3	3	3					7	3	3	3			30	POV. DOL. SL 2 GEN TP	
15	CHC-N	FE	"	WFS	SL	L	I									1.5	35							FLYSH. FORM. SH. PL. 2	
22	B4	"	"	"	SH	L	I									22	30							Testimonial. bones. thin veins	
39.9	GABE	"	"	"	H	L	I									38.5	45							DOL. sub-parallel. fine sh. p. 2	
51.6	B	"	"	"	H	L	I									31.5	5								
53.7	SHC-2	"	"	"	H	L	I									52.7	15							Faulted contact // S 50	
69.7	CAGE	"	"	"	SL(b)	L	I									28.7	5							Low dol. calc. 100	
75.7	"	"	"	"	SL	L	I									30.7	20							FLYSH. 100	
83.7	"	"	"	"	SL	L	I									40.7	5							FLYSH. 100	
92.7	"	"	"	"	SL	L	I									43.7	15							FLYSH. 100	
97.7	GNL	"	"	"	H	L	I									46.7	15							FLYSH. 100	
101.7	"	"	"	"	H	L	I									48.7	20							Dolomite. sub-parallel. with congl.	
107.9	GNL	"	"	"	H	L	I									49.9	35							10cm. broken siliceous dol.	
110.9	DOL	"	"	"	TF	L	I									52.9	30							82 gram. shales / siliceous dol. congl.	
120.7	BROWN	"	"	"	H	L	I									55.7	35								
125.7	"	"	"	"	H	L	I									58.5	30								
130.7	"	"	"	"	H	L	I									59.7	30								
135.7	GN	"	"	"	TF	L	I									60.7	30								
145.7	BROWN	"	"	"	H	L	I									61.2	20								
151.4	DOL	"	"	"	TF	L	I									61.6	30								
157.2	DOL	"	"	"	H	L	I									62.2	35								
167.2	DOL	"	"	"	H	L	I									63.2	60								
169.7	DOL	"	"	"	H	L	I									67.9	31								
171.7	"	"	"	"	H	L	I									69.3	28								
175.7	"	"	"	"	H	L	I									71.2	1							1cm dol. with small bones	
182.7	"	"	"	"	D	X	I									71.48									
185.7	DOL	"	"	"	H	L	I									72.2	20								
194.2	DOL	"	"	"	H	L	I									74.0	20								
198.2	"	"	"	"	H	L	I									77	22								
201.2	"	"	"	"	H	L	I									81.2	20								
207.2	"	"	"	"	H	L	I									83.2	20								
209.2	"	"	"	"	H	L	I									89.2	15								
212.2	"	"	"	"	H	L	I									91.2	20								
215.2	"	"	"	"	H	L	I									93.2	15								
219.2	GN	"	"	"	H	L	I									102.5	10								
220.2	GN	"	"	"	H	L	I									104.2	22								
226.2	GN	"	"	"	H	L	I									106.2	10								
236.6	GN	"	"	"	H	L	I																		
238.7	GN	"	"	"	H	L	I																		
250.7	GN	"	"	"	X	I	I																		
251.5	DOL	"	"	"	H	L	I																		
252.5	"	"	"	"	H	L	I																		

TO	COL	WTH	CODE	LITHOLOGY			ALTERATION				FAULTING			STRUCTURE					COMMENTS									
				G	LITH	TEX	DOL	VEIN	NO	CR	CO	PY	MIN	TYPE	NAM	Q	OXJ	REC		CORE	CUT	DEPTH	BCA	A1	OTH	D	A2	
122.8	D2029	46	5A	5	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	30			
123.3	"	"	T	FA	XT																Es						Intensely brecciated mica	
123.5	"	"		FA	L																18						Small quartz veinlets	
124.0	"	"		FA	XT																60						Intensely brecciated mica	
124.2	607	"		FA	XT																						Small quartz veinlets	
124.3	2029	"		SL	L																10						Small quartz veinlets	
124.5	D2029	"		SH	L																						Small quartz veinlets	
124.7	607	"	SM	TF	M			3																			Small quartz veinlets	
131.6	8604	"	SN	SH	L																15						Small quartz veinlets	
134.7	607	"	SL	SL	M																						Small quartz veinlets	
137.4	8604	"	SL	SH	L																						Small quartz veinlets	
142.1	607	"	4/5	SL	M																15						Small quartz veinlets	
145.7	607	"	4/5	SL	M																						Small quartz veinlets	
148.3	607	"	4/5	SL	L																						Small quartz veinlets	
147.1	607	"	"	SL	L																						Small quartz veinlets	
147.4	607	"	"	SL	L																						Small quartz veinlets	
147.4	607	"	"	SL	L																						Small quartz veinlets	
149.1	607	"	4M	FA	XT			9.5																			Small quartz veinlets	
149.5	607	"	4M	SL	L																						Small quartz veinlets	
161.5	607	"	4L	S	L			5																			Small quartz veinlets	
183.0	607	"	4L	TF	L																						Small quartz veinlets	
183.1	607	"	4L	FA	L																						Small quartz veinlets	
185.1	607	"	4L	SH	L																						Small quartz veinlets	
185.1	607	"	4L	SH	L																						Small quartz veinlets	
187.7	"	"	4L	SL	L																						Small quartz veinlets	
192.1	607	"	3/4	SL	L																						Small quartz veinlets	
194.0	607	"	3/4	SL	L																						Small quartz veinlets	
195.1	607	"	3/4	SL	L																						Small quartz veinlets	
196.7	607	"	3U	SH	L			2																			Small quartz veinlets	
197.1	607	"	3U	SH	L			3S																			Small quartz veinlets	
197.9	"	"		SH	L			1.5																			Small quartz veinlets	
198.0	"	"		FA	XT																						Small quartz veinlets	
198.8	"	"		SH	L																						Small quartz veinlets	
198.8	"	"		FA	XT			70																			Small quartz veinlets	
199.8	"	"		SH	L			30																			Small quartz veinlets	
199.1	"	"	3M	FA	XT																						Small quartz veinlets	
198.2	"	"		SE	L			15																			Small quartz veinlets	
198.9	607	"	3M	FA	XT																						Small quartz veinlets	
199.0	607	"		TF	M			15																			Small quartz veinlets	
199.0	607	"		FA	XT																							Small quartz veinlets

192.1 to 197.8 Hand log to 192.1
 Thin dark brown & 190.8
 } Series of good beds
 Checked with Green point scale
 Dec + and minor streak
 2cm Fault lenses
 faulted off to 197.8
 Note: several 2cm fault lenses
 3 layers alternate 1.5cm fault lenses

Mc ARTHUR RIVER MINING
U/G CHANNEL SAMPLE DATA SHEET

#2

97/1

DATE : 4/12/97
 LOCATION : 2H8
 CHANNEL ID : DDH 97/1
 SAMPLER : MF

SURVEY PEG : _____

ESTIMATE NORTHING : _____
 ESTIMATE EASTING : _____
 ESTIMATE RL (TOP) : _____

SURVEY NORTHING : 8626.342
 SURVEY EASTING : 7748.944
 SURVEY RL (TOP) : 9668.918

(Please Tick Box for Relevant Sample START Location)

LOW WALL

HIGH WALL

LITHOLOGY:

SAMPLE No.	FROM	TO	INTERVAL SAMPLED
23892	267.6	268.3	2A
23893	268.3	273.4	2B
23894	273.4	276.9	2C
23895	276.9	282.0	2D

0.7
5.1
1.5
5.1

ASSAY: (MARI CP)

SAMPLE No.	Pb%	Ag%	Zn(g/t)	Cu(ppm)	Fe%
23892	7.0	74	19.3	3000	7.3
23893	6.1	74	17.9	3000	9.1
23894	6.8	82	22.5	3000	6.0
23895	6.2	70	17.7	2000	5.3
#206 utav	6.35	75	18.87	2646	6.9

Collar Entered Into CHANCOL.DAT Database _____
 Splits Entered Into CHANASS.DAT Database _____
 Assays Entered Into CHANASS.DAT Database _____
 Micromine .dat files transfered into Vulcan Database _____

McARTHUR RIVER MINING										GEOLOGICAL LOG SHEET										GEO		HOLE		VERSION						
																				3-1/19/97		47/1		15/01/95						
																				DATE		PAGE		of		COMMENTS				
LITHOLOGY					ALTERATION					SULPHIDES			FAULTING			GEO TECHNICAL					STRUCTURE									
TO	COL	WTH	CODE	G	LITH	TEX	DOL	VEIN	NO	CR	CO	PY	MIN	TYPE	NAM	Q	OXJ	REC	CORE	CUT	DEPTH	BCA	A1	OTH	D	A2				
7	3	3		1	5	3	3	4	3	3	3	2	3			1	3	5	4	3	7	3	3	3	3			30		
17/1																														
2																														
267.6			2/30		H	L														3/4		28								
268.3			2A		H	L														3/4		21								
273.0			2B		H	L														3/4										
273.4			2B		TF	M														3/4		20							Magnetic blank test (T2)	
276.9			2C		H	L														3/4		22								
282.0			2D		H	L														3/4		15								
277.3																				3/4		22								
50																														
58.08			12C																											
6.5 0.7			12B																											
6.9 0.4			12A		SL	L																								
8.9 1.9			2D																											
10.5 1.6			2C																											
11.9 1.4			2B																											
12.15 0.25			2A																											
12.35			2/2D																											
14.3			2/3C																											
97.5																														
146.1																														
147.3	27		4L		TH	M																								
153.8	40N		4L		SH	L																								
156.0			I34		SLSC	N																								
158.5			I34?		SH	L																								
163.7			I34?		SL	M																								
165.2	47		I34		SL20	M																								
165.21					FL?																									
166.9	40N		3M?		SH	L																								
166.91			0/I34		FL?																									
174.2	07		4L		SH	L																								
175.1			4L		SLSC	L																								
182.2	40N		T		SH	L																								
182.2					FA	L																								
186.3					SH	L																								
188.2	009				TH	M																								
182.9	"				SH	L																								
192.4	"				FZ	XT																								
192.4	"				SH	L																								
195.4	"				FA	XT																								
195.5	40N		Y		FA	XT																								

Dubious, James
 3m depth
 1m thick shale
 5.15.15m + head grade to 1
 3m 116 vs c 16-17-18
 111
 0.5 m wide base F2
 back mb JL?
 5.0m base fit em.

Check Assay Data for #2 orebody intersections in diamond drill holes 97/1 and 97/3

DDH 97/1

Sample No.	Sample Width (m)	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF
		Pb%	Pb%	Pb%	Zn%	Zn%	Zn%	Ag g/t	Ag g/t	Ag g/t	Fe%	Fe%	Fe%	Cu ppm	Cu ppm	Cu ppm
23892	0.7	7	6.9	7.14	19.3	19.6	18.7	74	7.3	7.2	7.38	7.38	3000	3000	2800	
23893	5.1	6.1	6.1	6.17	17.9	18.4	17.5	74	9.1	8.9	9.01	9.01	3000	3000	2500	
23894	3.5	6.8	6.7	6.74	22.5	22.8	21.4	82	6	5.7	5.73	5.73	3000	3000	2600	
23895	5.1	6.2	6.1	6.36	17.3	17.2	16.6	70	5.3	5.2	5.27	5.27	2000	2000	1930	
Average		6.53	6.45	6.60	19.25	19.50	18.55	75	6.93	6.75	6.85	6.85	2750	2750	2458	
Linear wt. av of intersection	14.4	6.35	6.28	6.42	18.87	19.10	18.19	75	6.91	6.73	6.81	6.81	2646	2646	2337	

DDH 97/3

Sample No.	Sample Width (m)	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF	MRM ICP I	MRM ICP II	ISA XRF
		Pb%	Pb%	Pb%	Zn%	Zn%	Zn%	Ag g/t	Ag g/t	Ag g/t	Fe%	Fe%	Fe%	Cu ppm	Cu ppm	Cu ppm
23898	0.25	6.7	6.7	6.96	19.4	19.4	19	70	8.6	8.6	9.2	9.2	3000	3000	2600	
23899	1.4	6.7	6.7	6.96	19.6	19.2	19.2	68	8.3	8.3	8.55	8.55	3000	3000	2700	
23900	1.6	6.8	6.8	7.04	21.8	21	21	70	6.1	6.1	6.24	6.24	3000	3000	2200	
23901	2	7.2	7.2	7.43	21.2	20.1	20.1	80	5.5	5.5	5.53	5.53	4000	4000	1810	
Average		6.85	6.85	7.10	20.50	19.83	19.83	72	7.13	7.13	7.38	7.38	3250	3250	2328	
Linear wt. av of intersection	5.25	6.92	6.92	7.16	20.87	20.08	20.08	73	6.58	6.58	6.73	6.73	3381	3381	2204	

Conclusions

ISA zinc tends to be 3.5% lower than the MRM ICP's which duplicate within 99% of each other

ISA lead tends to be 3% higher than MRM ICP's

ISA copper is more conservative than the less precise MRM ICP

MRM ICP iron is slightly more conservative than ISA XRF

MCARTHUR RIVER CORES #23892 - 28399#

CREATED AT :- 7:26 AM TUE., 16 DEC., 1997
 PRINTED AT :- 7:44 AM TUE., 16 DEC., 1997
 CHEM LAB\XRF\REPORT.XRF MISC
 ALL RESULTS ARE REPORTED IN PERCENT

ATTN :- STEV PEVELY

M.R.M. Mine Sample

MR 023892 <SR1>

PB..... 7.14
 ZN..... 18.7
 CU..... 0.28
 FE..... 7.38
 CAO.... 1.21
 S..... 15.7
 SIO2... 29.8
 AL2O3.. 7.66
 MGO.... 1.75
 AS..... 0.147
 CO..... 0.004
 SB..... 0.062

Ag = 74

MIN ASSAYS

M.R.M. Mine Sample

MR 023893 <SR1>

PB..... 6.17
 ZN..... 17.5
 CU..... 0.25
 FE..... 9.01
 CAO.... 1.52
 S..... 16.1
 SIO2... 27.8
 AL2O3.. 7.05
 MGO.... 1.76
 AS..... 0.21
 CO..... 0.005
 SB..... 0.055

Ag = 74

77/1

M.R.M. Mine Sample

MR 023894 <SR1>

PB..... 6.74
 ZN..... 21.4
 CU..... 0.26
 FE..... 5.73
 CAO.... 1.76
 S..... 12.9
 SIO2... 26.9
 AL2O3.. 6.81
 MGO.... 1.99
 AS..... 0.169
 CO..... 0.004
 SB..... 0.053

Ag = 82

M.R.M. Mine Sample

MR 023895 <SR1>

PB..... 6.36
 ZN..... 16.6
 CU..... 0.193
 FE..... 5.27
 CAO.... 2.98
 S..... 12.6
 SIO2... 31.8
 AL2O3.. 7.59
 MGO.... 2.63

Ag = 70

Ag 70
 Au 0.001
 Pt 0.001
 Cr 0.001

ICP I 6/12/97

Steve Peverly

Results for #206
interactions w/ 97/1

	Pb	Zn	Fe	Si	Co	S
23892 1	7.0	19.3	7.3	13.5	0.3	16.8
23893 1	7.0		7.4	13.2	0.3	17.3
23893 2	6.1	17.9	9.1	12.5	0.3	19.4
23894 1	6.1		8.9	12.2	0.3	19.0
23894 2	6.8	22.5	6.0	11.9	0.3	17.6
23895 1	6.8		6.0	11.7	0.3	17.5
23895 2	6.2	17.3	5.3	13.1	0.2	14.3

MRM ASSAYS

97/1 Distance Weighted Av. of
Interactions

Steve

	Pb %	Zn %	Fe %
267.6 - 282.0 14.4m C	6.35	19.81	6.9
(BCA av. 20°) ⇒ 4.9m D	6.4	18.9	6.9

4m D 17%

4.7
3.5

97/1 Samples re-submitted for analysis on 16/12 returned linear weighted average of 19.03% Zn, or a 99.2% correction

98/2 (27.8) (12.8)
 97/5 195.5 211.4
 97/1 195.1

99/5 195.1 55 → 330



fault 210
 75 → 320
 76 → 335
 77 → 305

Soi 31 → 145
 c 209m

97/5 -25 → 159 core area 15

fault 60 → 335
 195.1

2192.3m
 vein 69 → 325
 symmetrical

97/1 195.1 core area 15
 -39 → 120

On 181m
 Fault 17m

150 → 194
 78° → 340°

98/2
 42 → 161 core area 15

97/7 203.6 - 203.8

97/1 166.2

97/1 147.4 165.1 195.1

97/5 195.5 211.4

98/2 127.8 (121.8?)

92/+ 155.5



37 → 131
sympathetic vein
168.5: 70° → 347

orientating bedding straight
down dip, graded bed
giving sense.

sympathetic vein.

165.3 m: 66 → 347
graded bed
167.0 m

164.0 m 65 → 328° graded bed
at 161.0

98/+ on ? 163.0 m

-10 → 180

5° ± 20° → 089

sympathetic vein

160.1: 80° → 341

graded bed at 161.0 m.

97/1. sympathetic vein.

147.2: 70° → 321

graded bed ? 148.5

148.3 ~~148.1~~: 63° → 338°

graded bed 2 148.5

97/7

0 m

221.6



5°: 35° → 110°

210: 39 → 108

graded bed at 201.2

201.2: 65 → 346

200.5: 53 → 348°