

Mc ARTHUR RIVER MINING

DIAMOND DRILL HOLE HEADER SUMMARY SHEET

HOLE I.D.	:97/3	LOCATION (eg.drive name)	:2H8
GRID AZIMUTH	:171	DESIGN DEPTH (m)	:30.0
COLLAR INCLINATION	:+30	TOTAL DEPTH (m)	:42.2
<u>SURVEYED COLLAR CO-ORDINATES</u>		DATE STARTED	:29/11/97
EASTING	:7749.421	DATE FINISHED	:29/11/97
NORTHING	:1625.743	DRILLED BY	:LONGYEAR
RL	:9671.546	<u>CORE INTERVALS ASSAYED:</u>	
HOLE/CORE SIZE(S)	:NQ	13.35-14.3 (I23C)	
	:	12.15-13.35 (I23D)	
		6.9-12.15 (#2)	
LOGGED BY	: NS/KC	5.8-6.9 (I12A-D)	
D/HOLE SURVEY METHOD	:EASTMAN SS	LOCAL MAG. DEV.	: + 5
		(add to downhole survey azim. reading)	

RAW DOWNHOLE SURVEY DATA

Depth (m)	Azimuth(Mag)	Dip	Depth (m)	Azimuth(Mag)	Dip
0	166.27	37.3			
42.2	166.27	37			

ASSAY SUMMARY

O/B	TT	Zn%	Pb%	Ag g/t	Fe%
I2/3	2.2	9.3	2.5	26	14
#2	4.6	20.1	7.2	73	6.7
I1/2	0.8	3.9	1.6	16	5.1

Surveyed Collar & Geology Entered Into Micromine Database

:SP 03/98

Assays Entered Into Micromine Database

:SP 03/98

Surveyed Collar & Geology Transferred Into Vulcan Database

: SP 18/04/98

Assays Transferred Into Vulcan Database

: SP 18/04/98

Comments: HOLE NOT SURVEYED BECAUSE NO UPHOLE GEAR
SURVEYS ESTIMATED FROM COLLAR PICKUP
HOLE TARGETED WOYZBUN FAULT (NOT INTERSECTED) VIA #20B

Mc ARTHUR RIVER MINING

DIAMOND DRILL HOLE HEADER SUMMARY SHEET

HOLE I.D.	:97/3	LOCATION (eg.drive name)	:2H8
GRID AZIMUTH	:+59.6	DESIGN DEPTH (m)	:30.0
COLLAR INCLINATION	:+30	TOTAL DEPTH (m)	:42.20
<u>SURVEYED COLLAR CO-ORDINATES</u>		DATE STARTED	:29/11/97
EASTING	:7749.421	DATE FINISHED	:29/11/97
NORTHING	:1625.743	DRILLED BY	:LONGYEAR
RL	:9671.546	<u>CORE INTERVALS ASSAYED:</u>	
HOLE/CORE SIZE(S)	:NQ	13.35-14.3 (2/3C)	
LOGGED BY	:NS/KC	12.15-13.35 (2/3D)	
D/HOLE SURVEY METHOD	:EASTMAN SS	6.9-12.15 (#2)	
		5.8-6.9 (1/2)	
		LOCAL MAG. DEV.	: + 5
		(add to downhole survey azim. reading)	

RAW DOWNHOLE SURVEY DATA

Depth (m)	Azimuth	Dip	Depth (m)	Azimuth	Dip
0.00	166.27	37.0			
42.2	166.27	37.0			

Surveyed Collar & Geology Entered Into Micromine Database :

Assays Entered Into Micromine Database :

Surveyed Collar & Geology Entered Into Vulcan Database :SP 12/97

Assays Entered Into Vulcan Database :SP 12/97

Comments: HOLE NOT SURVEYED BECAUSE NO UPHOLE GEAR
SURVEYS ESTIMATED FOR VULCAN
HOLE TARGETED WOYZBUN FAULT VIA #2OREBODY

McARTHUR RIVER MINING

GEO. SICAL LOG SHEET

GEO K.C.

DATE 14/11/97

HOLE 97/3

VERSION 15/01/95

PAGE 1 of 2

TO	COL	WTH	CODE	G	LITHOLOGY			ALTERATION			SULPHIDES			FAULTING			GEOCHEMICAL			STRUCTURE			COMMENTS				
					LITH	TEX	DOL	VEIN	NO	CR	CO	PY	MIN	TYP	NAME	Q	OXJ	REC	CORE	CUT	DEPTH	BCA		A1	OTH	D	A2
					5	3	3	4	3	3	3	2	3			1	3	5	4	3	7	3		3	3	3	
7	3	3		1	5	3	3	3	3	3													30				
2	W-61	FR	#1		SH	10	5	S	S	-						790	NQ						50	Intermittent veins. Cracks are common and tend to be quite irregular. Chertic coarse material <150µm ground 5:1. <200µm bands of intensely oxidized material probably weathered. FAULT? (Clock up to 9 cm, occasionally oxidized (floats into silt). Then to local material again. Fracture with many crushed minerals. It becomes more red when towards the top.			
2.52	W-61	FR	12D		SHSA	M	10			-	W					795								Coarser Graded than 17R and 795. Rebars shown (found) in 17R. Heavy fine silt. Highly variable grey 1:25:1. PAYMENT 7/10/97			
1.79	W-61	FR	12D		SH	M	10			-						795							60	FA, irregular bed			
4.1	W-61	FR	12D		SH	L	<5	5		-						795							50	Interbedded with shale. Finer resources of silt.			
4.2	W-61	FR	12D		SH	XI	40			-	W					795							4.1	More appears to occur in normal chert bed at 8.8m			
4.52	W-61	FR	12D		SHSA	M	<5			-						795							50	Very friable. Some dolomite remains. Enable fault marker			
5.0	W-61	FR	12D		SHSA	M	<10			-						795							50	Some oxidized remains. S part of nodular sequence			
5.9	W-61	FR	12C		SH	L	<5	25		-	W					795							55	Intrinsically nodular bed. Fairly thick.			
6.75	W-61	FR	17R		SHSA	R	<10			-						795							90	Variable with some dolomite. Fracture in dolomite (F.F.)			
6.5	W-61	FR	12B		SH	M	<5			-	W					795							100	Wider 2-ventured silt (less dolomite). Tub band.			
6.6	W-61	FR	12A		SH	L				-						795							10	UP some nodular unit			
6.9	W-61	FR	12A		SH	L	<10	20		-	M					795							100	rounded particles in. with increased			
7.5	W-61	FR	20		SH	L	<5	5		-	L					795							50	3L Freshly crushed			
7.6	W-61	FR	20		TP	M				-						790											
10.5	W-61	FR	20		TP	L	<5			-	S					795											
10.51	W-61	FR	20		TP	M				-						790											
12.1	W-61	FR	20		SH	L	<7	<5W		-	M					795											
12.14	W-61	FR	20		SH	L	<7	T		-	W					795											
12.15	W-61	FR	20		SH	L	<7	<5W		-	S					790											
13.3	W-61	FR	23D		SH	L	<4	<10W		-						790											
14.23	W-61	FR	23C		SH	L	<2	T		-						790											
14.5	W-61	FR	23F		TP	M				-						790											
15.2	W-61	FR	23B		SH	L	<2	T	W	-	I					795											
15.7	W-61	FR	23B		SH	L	<7	S	S	-	S					795											
16.1	W-61	FR	23B		SH	L				-						795											
17.6	W-61	FR	23B		SH	L		M		-	M					795											
17.5	W-61	FR	23B		TP	L				-	W					795											
17.5	W-61	FR	23B		TP	L				-	W					795											
17.5	W-61	FR	23B		TP	L				-	W					795											
20	W-61	FR	23A		SH	L		M	M	-	M					795											
21	W-61	FR	23A		SH	L		M	M	-	M					795											
21	W-61	FR	23A		SH	L		M	M	-	M					795											
23	W-61	FR	23A		SH	L		M	M	-	M					795											
23	W-61	FR	23C		SH	L		M	M	-	M					795											
24	W-61	FR	23C		SH	L		M	M	-	M					795											

3-4cm nodules
seen
sequence

3L Freshly crushed

rounded particles in. with increased

Wider 2-ventured silt (less dolomite). Tub band.

UP some nodular unit

rounded particles in. with increased

3L Freshly crushed

Mc ARTHUR RIVER MINING

U/G CHANNEL SAMPLE DATA SHEET

97/3

DDH

DATE : 4/12/97

LOCATION : 248

SURVEY PEG : _____

CHANNEL ID : 97/3

SAMPLER : MF

ESTIMATE NORTHING : _____

SURVEY NORTHING : 1626.663

ESTIMATE EASTING : _____

SURVEY EASTING : 7748.665

ESTIMATE RL (TOP) : _____

SURVEY RL (TOP) : 9670.711

(Please Tick Box for Relevant Sample START Location)

LOW WALL

HIGH WALL

LITHOLOGY:

SAMPLE No.	FROM	TO	INTERVAL SAMPLED
23896	13.35	14.3	23C
7	12.15	13.35	23D
8	11.9	12.15	2A
9	10.5	11.9	2B
23900	8.9	10.5	2C
1	6.9	8.9	2D
2	6.5	6.9	12A
3	5.8	6.5	12B

0.95
1.2
0.25
1.4
1.6
2.0
0.4
0.7

5.25

ASSAY: (MIN DEPT)

SAMPLE No.	Pb%	Ag%	Zn(g/t)	Cu(ppm)	Fe%
23896	1.9		8.4	1000	13.8
97	2.9		9.3	1000	12.1
98	6.7		19.4	3000	8.6
99	6.7		19.6	3000	8.3
23900	6.8		21.8	3500	6.1
01	7.2		21.2	4000	5.5
02	2.5		8.6	-	6.1
03	1.0		1.0	1000	4.3
#206 vb av	6.9		20.87		6.52

BCA = 60°
⇒ 4.5 - 20.9

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 _____

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	70	70	8.6	8.6	9.2	3000	3000	2600
23899	1.4	6.7	6.7	6.96	19.6	19.6	19.2	68	68	68	8.3	8.3	8.55	3000	3000	2700
23900	1.6	6.8	6.8	7.04	21.8	21.8	21	70	70	70	6.1	6.1	6.24	3000	3000	2200
23901	2	7.2	7.2	7.43	21.2	21.2	20.1	80	80	80	5.5	5.5	5.53	4000	4000	1810
Average		6.85	6.85	7.10	20.50	20.50	19.83	72	72	72	7.13	7.13	7.38	3250	3250	2328
Linear wt. av of intersection	5.25	6.92	6.92	7.16	20.87	20.87	20.08	73	73	73	6.58	6.58	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

ICP II

17/12/97

BATCH I.D: GEO SAMPLES 23892 TO 23903

SAMPLE	Pb	Zn	Fe	Si	Cu	S
23892	6.9	19.6	7.2	14.1	0.3	16.9
23893	6.1	18.4	8.9	13.4	0.3	19.2
23894	6.7	22.8	5.7	13.4	0.3	17.4 ^{97/1}
23895	6.1	17.2	5.2	15.2	0.2	14.3
23896	1.9	8.4	13.8	12.4	0.1	19.6
23897	2.9	9.3	12.1	12.1	0.1	17.6
23898	6.7	19.4	8.6	13.8	0.3	18.2
23899	6.7	19.6	8.3	13.5	0.3	18.7 ^{97/2}
23900	6.8	21.8	6.1	13.5	0.3	16.8
23901	7.2	21.2	5.5	13.6	0.4	16.5
23902	2.5	8.6	6.1	10.1	0.0	8.9
23903	1.0	1.0	4.3	12.7	0.1	1.7

McARTHUR RIVER MINING GEOLOGICAL LOG SHEET

TO	COL	WTH	CODE	LITHOLOGY			ALTERATION				SULPHIDES			FAULTING			GEOLOGICAL				COMMENTS														
				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	4	1	5	3	3	3	3	3								1	3	5	4	3	7	3	3	3	30								
97/1																																			
2676			2/3D																																
2683			2A		H																			28											
2730			2B		H																			21											
2734			2B		TF	M																													
2769			2C		H	L																													
2820			2D		H	L																													
17/3																																			
50																																			
58			12C																																
65			12B																																
69			12A		SL	L																													
89			2D																																
105			2C																																
119			2B																																
1215			2A																																
1235			2/3D																																
1473			2/3C																																
97/5																																			
1461																																			
1473			4L		TH	M																													
1578			4L		SH	L																													
1560			2/3A		SLSC	M																													
1585			2/3A?		SH	L																													
1627			2/3A?		SL	M																													
1652			2/3A		SLSC	M																													
16521					FL?																														
1669			3M?		SH	L																													
16691			6/3/34		FLT																														
1742			4L		SH	L																													
1751			4L		SLSC	L																													
1822			T		SH	L																													
1822					FA	L																													
1822					FA	L																													
1822					SH	L																													
1882			D64		TH	M																													
1924			"		SH	L																													
1934			"		FZ	XT																													
1954			"		SH	L																													
1954			"		FA	XT																													
1954			V																																

3m flt vs c cb-pj-upt 1/11

Dubois, fault

3m flt

Nathan min shale

Siltstone + basal gravel bed

3m flt vs c cb-pj-upt 1/11

out m with trace Fz

back int J.L.?

Seoly breccia flt zn.

MCARTHUR RIVER CORES #23900 - 23903#

CREATED AT :- 7:43 AM TUE., 16 DEC., 1997
 PRINTED AT :- 7:45 AM TUE., 16 DEC., 1997
 CHEM LAB\XRF\REPORT.XRF MISC
 ALL RESULTS ARE REPORTED IN PERCENT

M.R.M. Mine Sample

MR 023900 <SR1>

PB.....	7.04
ZN.....	21.0
CU.....	0.22
FE.....	6.24
CAO.....	2.41
S.....	14.6
SIO2...	28.0
AL2O3..	6.16
MGO.....	2.18
AS.....	0.188
CO.....	0.004
SB.....	0.042

*Ag = 70**10/3*

M.R.M. Mine Sample

MR 023901 <SR1>

PB.....	7.43
ZN.....	20.1
CU.....	0.181
FE.....	5.53
CAO.....	2.28
S.....	8.56
SIO2...	28.7
AL2O3..	6.42
MGO.....	2.03
AS.....	0.193
CO.....	0.003
SB.....	0.048

Ag = 80

M.R.M. Mine Sample

MR 023902 <SR1>

PL.....	2.49
ZN.....	8.61
CU.....	0.015
FE.....	6.20
CAO.....	13.7
S.....	7.94
SIO2...	19.9
AL2O3..	4.35
MGO.....	8.12
AS.....	0.023
SB.....	0.029

Ag = 18

M.R.M. Mine Sample

MR 023903 <SR1>

PB.....	1.01
ZN.....	0.84
CU.....	0.116
FE.....	4.29
CAO.....	17.3
S.....	1.42
SIO2...	27.6
AL2O3..	3.74
MGO.....	9.99
AS.....	0.053
SB.....	0.022

Ag = 14

AS..... 0.21
 CO..... 0.004
 SB..... 0.058

M.R.M. Mine Sample

MR 023896 <SR1>

PB..... 1.93
 ZN..... 8.77
 CU..... 0.067
 FE..... 14.9
 CAO..... 5.45
 S..... 8.20
 SIO2... 25.0
 AL2O3.. 5.86
 MGO..... 3.87
 AS..... 0.107
 CO..... 0.002
 SB..... 0.030

Ag = 24

M.R.M. Mine Sample

MR 023897 <SR1>

PP..... 3.10
 Z..... 9.70
 CU..... 0.116
 FE..... 13.2
 CAO..... 5.66
 S..... 9.27
 SIO2... 26.2
 AL2O3.. 5.68
 MGO..... 4.01
 AS..... 0.184
 CO..... 0.002
 SB..... 0.035

Ag = 28

M.R.M. Mine Sample

MR 023898 <SR1>

PB..... 6.96
 ZN..... 19.0
 CU..... 0.26
 FE..... 9.20
 C..... 0.95
 S..... 12.0
 SIO2... 27.9
 AL2O3.. 7.14
 MGO..... 1.55
 AS..... 0.167
 CO..... 0.003
 SB..... 0.050

Ag = 70

M.R.M. Mine Sample

MR 023899 <SR1>

PB..... 6.96
 ZN..... 19.2
 CU..... 0.27
 FE..... 8.55
 CAO..... 1.38
 S..... 16.4
 SIO2... ~~28.5~~
 AL2O3.. 6.53
 MGO..... 1.62
 AS..... 0.24
 CO..... 0.004
 SB..... 0.044

Ag = 68