ASARCO AUSTRALIA LIMITED

(incorporated in Western Australia)

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By Courier

5 February, 1990.

Mining Registrar
Department of Mines and Energy
Government Centre
Windley Street
TENNANT CREEK NT 0861

Dear Sir,

Attached please find a copy of the following Annual report:

Tennant Creek Project, Mammoth Prospect

Covering Mineral Claims C482 to 484, 514 to 518.

Yours faithfully,

A. Peterson

Encs.

ASARCO AUSTRALIA LTD.

TENNANT CREEK PROJECT

Mammoth Prospect

Mineral Claims C482 - 484, 514 - 518

1989 Annual Report to the
N.T. Department of Mines and Energy

by
A. Peterson
January, 1990

Contents

1. Introduction

This report details the work to date on the Mammoth tenements since a joint venture was entered into between Asarco Australia Ltd. and TopEnd Resources N.L. on May 23, 1988. The block comprises eight mineral claims (C482 to 484, 514 to 518) five of which were granted on March 15, 1988, the remainder granted on October 12, 1988.

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2. Location and Access

The Mammoth tenements lie approximately 15 kilometres north east of the Tennant Creek township. A well graded track runs from the Peko bypass out past the relay station and through the claim block. A side track leading to the Mammoth mine and battery site (excised from the joint venture ground) provides access within the area.

.../3.

3. 1988 Exploration

The area has been mapped at 1:1 000 scale including a brief look over the excised Mammoth Mine which follows a major north west/south east shear zone. Within the joint venture area the only old gold workings are a series of pits within BIF and exposing siliceous dolomite alteration with malachite staining and minor magnetite south of, and parallel to the Mammoth shear. Sampling returned low gold values but moderate bismuth and high copper.

Trending north west/south east is a major quartz vein which is a prominant feature marking the fault which passes through the area. The vein has minor iron staining and no mineralization associated with it. The general dip throughout the area is towards the south west, but there are several minor flexures and folds with the general fold plunges toward the south east best seen in the southern portion of the block.

The Mammoth block, including the excised mine (permission obtained from the holder), was gridded by compass and chain at 200 metre line spacings, prior to the completion of a lag sampling survey at 200 x 25 metre spacings.

A total of 139 samples were taken and analysed for gold (to ppb levels), copper and bismuth. Values in the proximity of the Mammoth Mine were expectedly high, largely accounted for by mullock and tailings from the old battery site. The rest of the area was not noticably anomalous, but the wide spread of wind blown tailings has masked the primary geochemical signature over much of the ground.

The Mammoth prospect is included in an area flown by Aerodata for magnetics and radiometrics; line spacing was 200 metres and flight height 60 metres. Results from this survey have been processed and interpreted by Aerodata. There is no indication of any obvious magnetic targets within the Mammoth block, but several prominent lineaments that are spatially associated with historic workings nearby pass through the area.

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4. 1989 Exploration

4.1 Aims

Lag sampling anomalism close to the western boundary of the excised Mammoth mine site was defined by the 1988 geochemical survey and is coincident with a number of shallow (<1 metre) pits. Further surface sampling of the outcropping sediments was contradicted by the presence of nearby ruins and the upwind location of mine tailing. A ground magnetic survey failed to indicate any significant features.

4.2 RAB Drilling

Seven holes, RAB 72 to RAB 78, totalling 151 metres (average 21.6 metres) were drilled on October 13 to 14.

Drill sites were located between the tenement boundary and the east flank of a hill comprising sediments devoid of massive ironstone. Holes were drilled with RAB Hammer to depths of 19 to 23 metres within a facies of siltstone/wacke containing 3 to 5% disseminated hematite.

Assay results from the drilling were disappointing with all gold values below the 0.02 ppm detection limit and maximum values of 19 ppm copper and 6 ppm bismuth.

Drill hole locations are shown on Plan 4926 and all assay results are included in the drill hole geological logs.

.../5.

5. Conclusions

The 1989 work programme tested the sole zone of geochemical anomalism coincident with favourable geology. No significant intersections were encountered.

No further work is warranted on this tenement block.

A. Peterson

AB GEOLOGICAL & SAMPLE LOG

GRID: MAMMOTH

GGED: AP

DATE: 13/10/89 + To 18m in RAD 72
14/10/89

OLE NO.	CO-ORDINATES	FROM TO	GEOLOGICAL DESCRIPTION	PLOTTING SUMMARY	ACC. TOTAL DEPTH	SAMPLE NO.		INTVAL	Au	As	Cu	Bi	
					154	414	377						
AB 2	10 900N 6400E	0-8	ox brown wcke										
3AB 72		8-12	ox yellow brown wcke		168								
		12-23	ox purple grey dissem hm rich slst										
			03% Hm, rare un qz to 3mm	slst	9	414	378	18-23	<.02		1	6	
AB 3	10 875N 6375E	0-2	ox orange brown overburden, un qz + sed float										
73		2-8	ox yellow brown slst/wcke										
		8-12	ox brown slst/wcke, rare 3mm qz										
		12-14	ox dark grey brown dissem Hm rich slst/wcke										
			03% Hm (dissem), rare un qz to 3mm										
		14-16	AA + 30% brick red chips										
		16-19	As for 12-14 interval	slst/wcke	28	414	379	14-19	<.02		1	6	
AB 4	10 850N 6385E	0-2	ox orange brown overburden, un qz + sed float										
74		2-8	ox orange brown slst/wcke										
		8-12	ox brown slst/wcke										
		12-14	ox dark grey brown dissem Hm rich (5%) slst/wcke										
		14-19	AA + 5% black lim on fractures	slst/wcke	47	414	380	14-19	<.02		1	6	

...AL & SAMPLE LOG

GRID: MAMMOTH

OGGED: AP

DATE: 14/10/89

OLE NO.	CO-ORDINATES	FROM TO	GEOLOGICAL DESCRIPTION	PLOTTING SUMMARY	ACC. TOTAL DEPTH	SAMPLE NO.	INTVAL	Au	As	Cu	Bi
AB 75 /	10825N 6375E	0-1	orange brown overburden + sed + qz float		47	414 380					
		1-3	ox 50:50 orange brown and pale grey slst/wcke chips								
		3-8	ox pale grey slst			414 381	4-6m	4·02		1	5
		8-11	as for 1-3m EOH stuck bit		58						
			REDRILL								
		0-1	orange brown overburden + sed + qz float								
		1-4	ox 50:50 orange brown and pale grey slst/wcke								
		4-10	ox orange slst/wcke, common vn qz to 2cm								
		10-16	ox 50:50 yellow brown and orange brown wcke chips								
		16-22	ox red brown wcke 02% lim on fractures	wcke	80	414 382	20-22	4·02		1	3
AB 76 / RAB 76	10800N 6390E	0-4	ox orange brown wcke								
		4-19	ox purple brown wcke rare 2mm vn qz	wcke	99	414 383	16-19m	4·02		4	3

GEOLOGICAL & SAMPLE LOG

GRID: MAMMOTH

GED: AP

DATE: 14/10/87

E	CO-ORDINATES	FROM TO	GEOLOGICAL DESCRIPTION	PLOTTING SUMMARY	ACC. TOTAL DEPTH	SAMPLE NO. 414	SAMPLE NO. 383	INTVAL	Au	As	Cu	Bi	
	10775N 6375E	0 - 0.5	ob overburden + sed float										
		0.5 - 21	ox purple brown slst/wcke, 02% lim as fracture coating	slst/wcke	120	414	384	18-21	<02		2	3	
	10750N 6390	0 - 0.5	orange brown overburden, qz. + sed float										
		0.5 - 8	ox orange brown slst/wcke										
		8 - 19	ox purple brown slst/wcke, 04% lim on fractures		139	414	385	16-19m	<02		19	3	

11 500mN

5 000mE

5 500mE

6 000mE

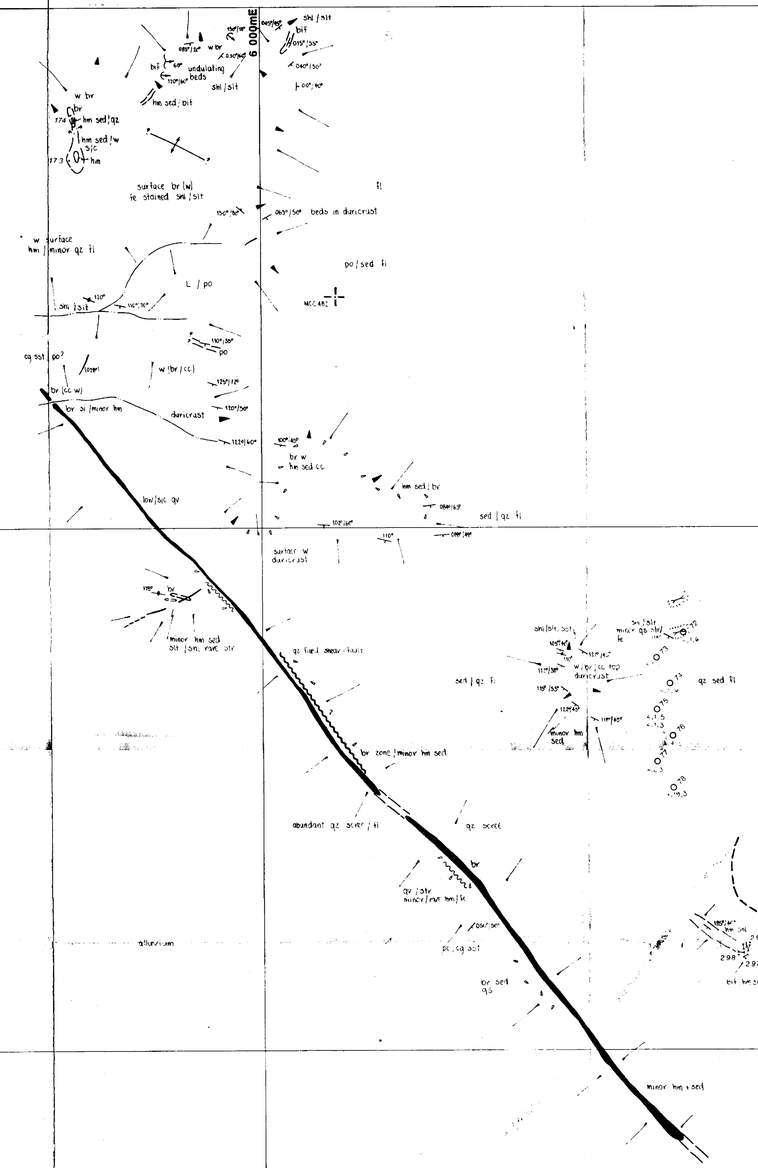
6 500mE

7 000mE

11 000mN

10 500mN

10 000mN



Legend

bc	-	chert (incl. banded chert)
bd	-	dolerite
bif	-	banded iron formation
br	-	breccia, brecciated
cc	-	calcrete
chl	-	chlorite
cong	-	conglomerate
dol	-	dolomite
fe	-	ferruginous
fe st	-	ironstone
f g, m q, c g	-	fine, medium, coarse grained
fl	-	float
fol	-	foliated
frac	-	fractures, fractured
hm	-	haematite
j	-	jasper
L	-	laterite/lateritic
lim	-	limonite/limonitic/limonitised
maf	-	mafic
mas	-	massive
mgt	-	magnetite
o/c	-	outcrop
po	-	porphyry
qe	-	quartz stringers
qv	-	vein quartz
qz	-	quartz
rk	-	rock
s/c	-	subcrop
sch	-	schist/schistose
sdy	-	sandy
sed	-	undifferentiated sediments
sh	-	shale
si	-	siliceous/silicified
sst	-	sandstone
str	-	stringer/stockwork
t	-	undifferentiated tuff
tc	-	talc
vb	-	basalt
ve	-	veining
w	-	weathered

- Dip and strike of bed
- Dip and strike of cleavage
- Vertical cleavage
- Plunge and sense of parasitic fold
- Plunge of 'm' fold
- Joint
- Syncline major / minor
- Anticline major / minor
- Fault
- Shear
- Minor shear
- Brecciation
- Quartz
- Geological boundary
- Approximate geological boundary
- Break of slope
- Creek
- Wash
- Road
- Track
- Fence
- Pit, shaft
- Trench
- Dump, mullock heap
- Sample location and number prefixed by 420

CR90/404

Sample No.	ppm Au	ppm Bi	ppm Cu
420 173	.03	<	6
420 174	.04	<	9
420 296	.26	40	11500
420 297	<	5	220
420 298	.11	20	800
420 299	.03	10	58

0 25 50 100 150 200m

SCALE

ASARCO AUSTRALIA LTD

TENNANT CREEK
MAMMOTH

GEOLOGY
Drill Hole Location

Compiled: D.J.		Plan No.
Drawn: P.S.V.		4926
Checked		
Scale: 1:2500	Date: 1988	