PROJECT A-80-80G



PROGRESS REPORT

JANUARY 1980 TO JANUARY 1981

EXPLORATION LICENCE 2217

ARLTUNGA

NORTHERN TERRITORY

PAUL JOYCE

JANUARY 1981

REPORT 231

NORTHERN TERRITORY GEOLOGICAL SURVEY

cesipil

DISTRIBUTION

- o Denver
- Mines Department
- o Sydney
- o Field
- o Spare
- o Trade

CONTENTS

1 ANALYTICAL RESULTS

		Page
SUMMARY AND CONCLUSIONS		1
RECOMMENDATIONS		2
INTRODUCTION		. 3
LOCATION AND ACCESS		5
DESCRIPTION OF THE PROPERTY AND OWNERSHIP		7
HISTORY AND EXPLORATION		8
REGIONAL GEOLOGY		10
INERALIZATION		12
WORK CONDUCTED BY AMOCO		14
EXPLORATION POTENTIAL		16
EXPENDITURE		18
FIGURE		
	after	page
LOCATION		5
	·	
VICIATION R	•	

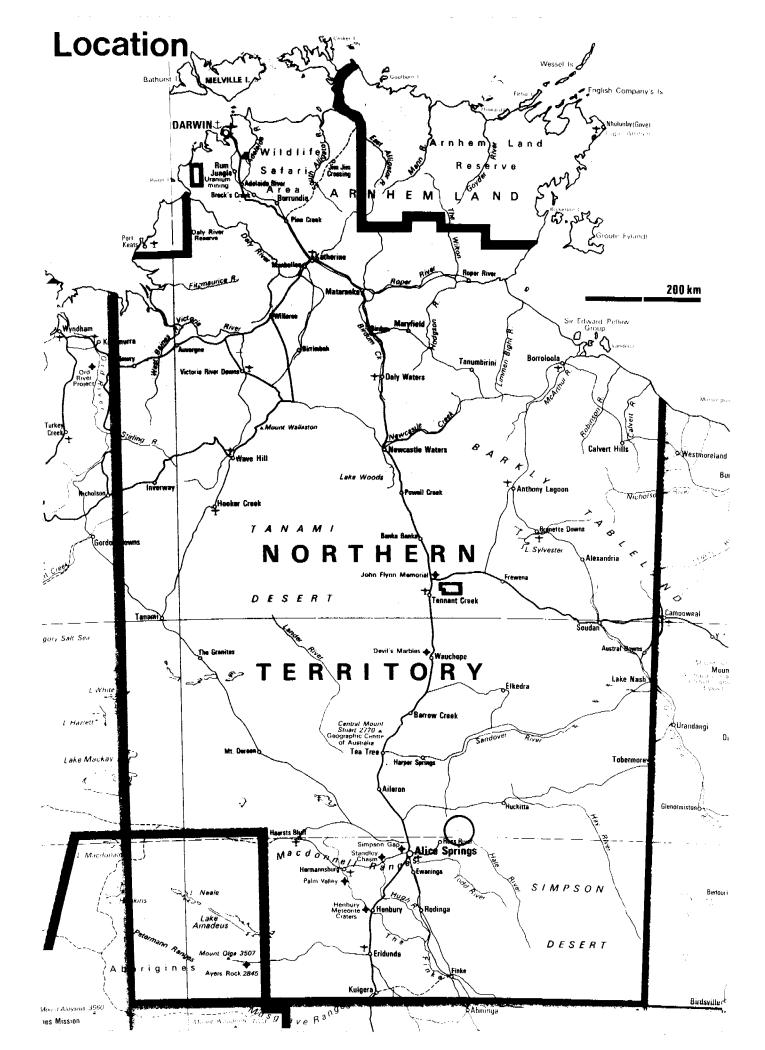
after page

1 LITHOLOGICAL DESCRIPTION OF SAMPLES 15

ENCLOSURES

Scale

1 ROCKCHIP GEOCHEMISTRY - SAMPLE LOCATIONS 1:25000



SUMMARY AND CONCLUSIONS

Initial appraisal of the multiple gold occurrences in the Arltunga goldfield area, indicates that they are small but still may contain a significant collective aggregate tonnage of gold mineralization.

It does not appear immediately feasible at this stage, to develop these occurrences, even collectively on a sattelite basis, without the support of a larger operation based on the White Range gold deposits.

A continuation of exploration at Arltunga would therefore be largely dependant on the availability of the White Range deposit for exploration.

RECOMMENDATIONS

Further exploration within the Exploration Licence will be dependant primarily on the outcome of negotiations between Amoco and the owner of GML914 which protects most of the White Range gold prospect.

Should the negotiations be successful a detailed exploration program including mapping, geochemical sampling, ground geophysics and drilling is recommended to be conducted over the White Range deposit and the surrounding areas.

INTRODUCTION

The White Range and Arltunga goldfield areas first came to the notice of Amoco during the course of a bibliographic study of goldfields in the Northern Territory.

A report written by P.S. Hossfield, the Senior Geologist of the Aerial, Geological and Geophysical Survey of Northern Australia in 1937, indicated that there were significant gold values remaining in the old workings, to motivate Amoco in applying for an Exploration Licence over the area.

The Exploration Licence was granted in January 1980, although part of a historical reserve, and an existing gold mining lease of thirty two hectares were excluded from the Licence.

Negotiations aimed at allowing Amoco to explore these areas are

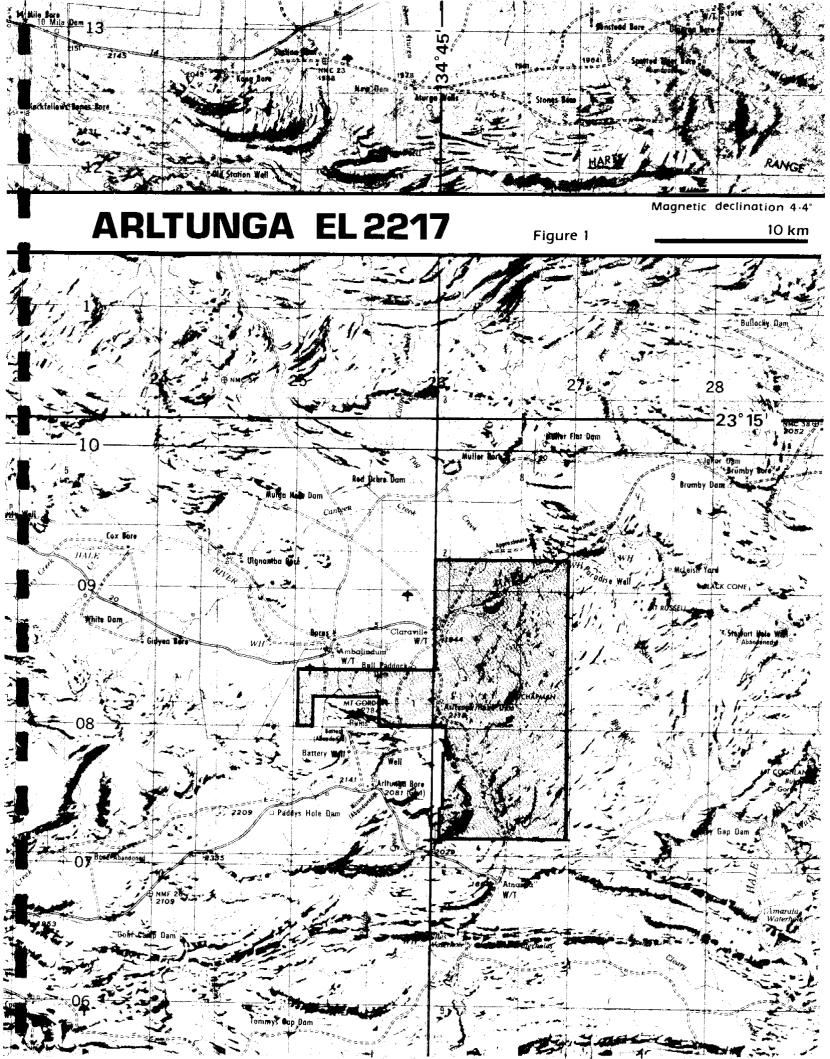
still underway between Amoco and the holder of gold mining lease 91H. It is hoped that these negotiations will result in the acquisition by Amoco of this area in the near future. A continued exclusion of the White Range section from the Exploration Licence would provide a sufficiently large obstacle to prevent further exploration in the region being justified.

LOCATION AND ACCESS

Exploration Licence No. 2217 is situated almost centrally in the Australian Continent, on the eastern extremity of the McDonnell Ranges, about ninety two kilometers northeast of Alice Springs (Figure 1).

Regular rail and air services connect Alice Springs with Adelaide and less frequent air services fly direct to Sydney.

From Alice Springs, the best access to the Exploration Licence is by way of a partly bituminised road leading due east via Bitter Springs. Alternative access also suitable for two wheel drive vehicles, can be made by a road leading from the Stuart Highway which connects Alice Springs to Darwin. The road leads east from the highway, forty nine kilometers north of Alice Springs and passes through The Garden, Ambalindum and Claraville stations,



and provides access to the northern section of the Exploration Licence.

There is no permanent human habitation within the Exploration Licence.

DESCRIPTION OF THE PROPERTY AND OWNERSHIP

Exploration Licence No. 2217 covers an area of 175.62 square kilometers and surrounds the White Range and Arltunga goldfields.

The Licence is wholly owned by Amoco Minerals Australia Company.

The Arltunga Historical Reserve abuts the southwestern corner of the Licence and an existing gold mining lease (91H), in the is also excluded from the Licence.

HISTORY AND EXPLORATION

Alluvial gold was first discovered in the Arltunga area in 1887. The following year, twenty reef claims were being worked in the Arltunga area in addition to alluvial workings.

Three years later, there were twenty five reef claims in the course of development or production, with three light stamper batteries in operation.

In 1897, gold was discovered at White Range, and the amount of ore taken from this area to a newly erected government battery at Arltunga settlement, soon eclipsed that taken from the Arltunga field.

Subsequent history of the Altunga area is mainly that of the larger White Range field.

Full production continued at White Range until 1912 when the government battery ceased to operate on a full time basis. In 1913 the total production from the White Range workings had been 11,677 ozs. of bullion from 6,753 tons of ore treated, giving an average value of 55.3 ppm gold.

Recorded total production from the ten smaller operations at Arltunga is 1,427 ozs. of bullion from 1,320.97 tons of ore with an average value of 34.6 ppm gold.

Various reasons for the decline of mining have been suggested, they are:-

- 1. Transition of the ore, particularly at White Range, from oxidised to sulfides, causing extraction problems and preventing the practice by the miners of 'shaking' fine gold from vughs in the ore prior to crushing.
- 2. Difficult working conditions suffered by the miners due to a harsh climate, lack of water and the effects of silicosis resulting from the highly siliceous nature of the ore and gangue.
- 3. Discovery of the Winnecke gold field, 50 kilometers to the northeast, drawing away miners who failed to return.

Since the cessation of operations, no systematic Exploration has been conducted in the area.

REGIONAL GEOLOGY

Exploration Licence No. 2217 covers the southeastern section of the Lower Proterozoic Arunta Complex, comprising strongly deformed, faulted and metamorphosed sediments and probable clastics which have been metamorphosed to greenschist facies and gniess. They have been intruded by granites with late stage aplites, pegmatites and quartz veins occasionally bearing calcite and siderite.

Mafic and ultramafic sills dykes and stocks also intrude the area.

The Arunta Complex within the Exploration Licence has been involved with the emplacement of the Arunta Nappe Complex, where recumbent folding and overthrusting has occurred, giving rise to the development of a synclinal antiform with an east-west axis in

the Arltunga goldfield area.

Unconformably overlying the Arunta Complex, is a blocky resilient quartzite, less than five hundred meters thick which forms the White Range. The quartzite is Upper Proterozoic in age and has been named the Heavitree Quartzite. The unit contains occasional thin bands of siltstone, shale and conglomerate.

A positive Bouguer anomaly beneath the White Range region could possibly indicate that during the nappe formation, the lower crust and mantle has been remobilised upwards in a similar fashion to crustal movement during diapiric emplacement.

MINERALIZATION

Gold is the principle economic mineralization within the Exploration Licence. Subordinate copper and arsenic occur but are not of primary interest.

In both the White Range and Arltunga Goldfields, the only host to gold mineralization so far known, has been within quartz veins associated with pyrite, arsenopyrite, chalcopyrite, calcite and siderite.

Stratiform or porphyry deposits are unknown in the area.

In almost every case of gold being worked in the area, the host quartz veins have been transgressive of the bedding, both in the White Range and Arltunga goldfields. The primary difference between the two areas apart from spatial density and size of the quartz veins, is the orientation of the veins, and the hostrock. At White Range, the quartz veins have a predominant eastwest orientation, following the general axis of folding, while the quartz veins in the Arltunga field are generally meridional, roughly parallel the direction of the dominant fault in the region known as the Wheal Mundi fault.

The host rocks at White Range are a blocky medium grained quartzite, while the rocks surrounding the quartz veins in the Arltunga area are generally schists and gneisses.

The proximity of gold occurrences in the region to the positive Bouguer anomaly beneath the White Range and the Wheal Mundi Fault, tends to suggest that the origin of gold mineralization is connected with either or both of these features, but theories concerning the source of the gold can only be conjectural at this stage.

There is little doubt that local fracturing caused during orogenic movement has provided channel ways for the passage and deposition of auriferous quartz of varying thicknesses.

WORK CONDUCTED BY AMOCO

All auriferous occurrences and old mines within the Exploration Licence mentioned in previous literature were inspected during the period and traverses were made throughout the Exploration Licence in the search for further possible auriferous areas.

A short wheel base Toyota Landcruiser was used for transport to most sections of the Exploration Licence. Other areas inaccessible by this method had to be reached on foot.

Five previously unrecorded ferruginous quartz veins, occasionally associated with calcite and three well laminated quartz felspar biotite horizons were sampled. Rockchip strip sampling was carried out over the Fortune and Jenkins workings (Enclosure 1).

The density of sampling was influenced by the relative

mineralized appearance, or surface extent of each particular prospect area. Sample locations were marked with flagging tape, bearing relevant sample numbers at each sample point. Rockchips dispatched for assay were composed of a composite of about twenty pieces weighing about twenty five grams, to comprise a sample of about five hundred grams weight.

A follow up rockchip sampling program was carried out on the Bushy Gully and Laminated prospects to the north of Mount Chapman, and across the Beds prospect to the south of the peak of Mount Chapman.

Strip samples were comprised of multiple small chips across the outcropping width of each prospect, then split to provide a sample approximately one kilogram in weight.

Four strip samples about fifty meters apart, were taken from the Beds prospect, and two strip samples were taken from each of the Laminated and Bushy Gully prospects.

A lithological description of each sample is given in Table 1.

Assay results from the preliminary reconnaissance and follow up were in general not sufficiently encouraging to justify an immediate continuation of exploration work without the addition of access to the White Range deposit.

TABLE 1
Lithological Description of Samples

Sample Number	Sample Description	Locality
14957	5cm qtz vein	Chinamans Workings
14958	11 11 11	
14959	Cu stained 23cm pegmatite	11 11
14960	Feldspathic 6cm qtz vein	# #
14961	Gossanous qtz vein 10cm	11
14962	n n n n	" "
14963	Ore dump composite	Wipeout Mine
14964	Slimes composite	
14965	Qtz composite	. " "
14966	H II	Wheal Fortune
14968	Laminated amphibolite	Bushy Gully Prospect
14969	Amphibolite feldspar schist	Magdala Workings
14970	Amphibolite feldspar schist	Laminated Prospect
14971	Qtz composite	Mt. Chapman Summit
14972	u H	11 11 11
14973	н н	Grave Prospect
14974	Magnetite composite	V8 Prospect
14975	Qtz composite	. 11
14976	u #	11
14977	Amphibolite	FF 10
14978	Qtz composite	Mt. Chapman
14979	H Commence of the Commence of	11 11
14980	n	11 11
14981	Granite	11 19
14982	Qtz composite	Pale Hill Prospect
14983	Sideritic qtz composite	11 11 11
14984	Qtz composite	Blue Flag Prospect
14985	n tt	n n n
14986	Malachite stained qtz comp.	Fat Dingo Mine
14987	Feldspathised qtz composite	Beds Prospect
14988	Limonite float	17 17
14989	Feldspathised schist	Wheal Fortune Mine
14990	Magnetite composite	11 11 11
14991	Banded sediment	st th H
14992	Qtz composite	Jenkins Mine
43014	Laminated qtz composite strip	Beds Prospect Strip 1
43015	11 11 11 11	" " 2
43016	11 11 11	и и з
43017		n n 1 4
43018	п н п	" " 5
43019	" qtzite " "	Laminated Prospect 1°
43020	n n n	" 2
43021	Qtz lamprophyre " "	Bushy Gully " 1
43022	THE	11 11 11 11 11 11
	150 10 meter composite strip	Jenkins Workings
	150 10 meter composite strip	Wheal Fortune

EXPLORATION POTENTIAL

The Arltunga group of workings has potential to contain a small tonnage of high grade mineralization which could provide feedstock to a treatment plant based primarily on ore from the larger White Range deposits.

Signed_____

P.J. JOYCE

REFERENCES

Brown H.Y.L	Government Geologist's Report on a Journey from
	Adelaide to the Hale River.
	Geol. Sur. S.Aust.Rept.(Parl paper No. 24) 1889
Brown H.Y.L	Geological Examination of Country in the
	Neighbourhood of Alice Springs
	Geol. Sur. S.Aust Rept. (Parl paper No. 189) 1890
Brown H.Y.L	Arltunga Goldfield and Hartz Range Mica Field
	Geol. Sur. S.Aust Rept. (Parl paper No. 127) 1896
Brown H.Y.L	The Gold Deposits at Winnecke's Depot and Mines in
	the Arltunga Goldfield, McDonnell R.
	Geol. Sur. S.Aust Rept. (Parl paper No. 59) 1903
Forman D.J	The Arltunga Nappe Complex McDonnell Ranges N.T.
	Journal of the Geol. Soc. Aust Vol 18 pp 178-82
•	July 1975
Forman D.J	Palaeotectonics of Precambrian and Palaeozoic
	Rocks of Central Australia
	Ph. D. Thesis Harvard Univ. (Unpublished) 1968
Forman D.J)	Regional Geology and Structure of the North
Milligan E.N)	Eastern Margin of the Amadeus Basin
McCarthy W.R)	N.T. Rep. Bur. Min. Resour. Geol. Geophys. 103
	1967
Hossfield P.S	The Eastern Portion of the Arltunga Area, Eastern
	McDonnell Ranges
	N.T. Report No. 20 1937a
Hossfield P.S	The White Range Goldfield, Eastern McDonnell
	Ranges District
	N.T. Report No. 28 1937b
Stewart A.J	Potassium Argon Dates from the Arltunga Nappe
	Complex.
	N.T. J. Geol. Soc. Aust 17 pp 205-211
and the second s	

AMOCO MINERALS AUSTRALIA COMPANY

EXPENDITURE FOR THE TWELVE MONTHS TO JANUARY 31, 1981

EXPLORATION LICENCE NO. 2217

Salaries and Wages	3,236.91
Supplies	64.00
Supplies - maps	14.00
Cookery	102.44
Field Supplies	64.80
Travel	433.00
Assays	2,216.00
Equipment Rental	706.57
Equipment Operation & Maintenance	86.90
Property Payments	135.62
Entertainment	107.30
Enter out the enter	7,167.54
Overhead	2,359.26
070111044	\$9,526.80

T.J. CONQUEST

Accountant

APPENDIX 1

ANALYTICAL RESULTS

Pilbara Laboratories Pty Ltd.

Analytical Report

AMOCO MINERALS AUSTRALIA COMPANY

4 MacAdam Place, Balcatta, Western Australia 6021

Telephone: (09) 344 2411

Telex: AA 93837

Cables: Pilbaralab - Perth

Report Code: W 1906

Copy 1: J. E. James

Locality: . . .

smple Type:.....Rock chips

Sample Prefix:.....

Ments Order: Desp 0311

Submission Date:May 13, 1980

Method:ICP; Au20; AAS

LABORATORY OFFICER: Land and inde

SAMPLE	As	Ag	Sb	Bi	Au	Sn	Co	Ni	V	Çı	Zh ;
14901			<2	.<2	0.6	3	13	20	24	85	29
14902	9		<2	<2	0.6	5	12	19	22	61	32
14903	j 2	<1	<2	<2	0.8	2	4	3	9	10	11
14904	67	<1	<2	<2	0.3	. 4	19	19	24	23	49
14905	63	<1	<2	<2	0.2	<2	2)	33	62	27	95
14951	4	<1	<2	<2	15.1	<2	7	30	14	4	3
14952	<2	<1	<2	<2	0.2	5	9	22	31	2	32 1
14953	1 44 5	~<1	<2	¹ <2	0.9	, <2	<2	9	⁴⁰ 38	13	147
14954	24	<1	<2	<2	0.4	2	41	91	37	17	173 ′
14955	l 63	<1	<2	<2	0.1	<2	<2	14	47	33	74
14956	6	<1	<2	<2	0.1	3	27	35	47	6	425
■ 14957 ×	9	<1	<2	23	12.1	3	1,9	23	17	94	34
14958	17	<1	<2	23	12.8	<2	28	21	28	148	9 (
14959	62	2	<2	11	0.4	<2	5	9	7	1120	45
14960	35	<1	<2	<2	0.3	<2	31	23	15	365	12 (
14961	80	2	< 2	<2	0.3	<2	23	29	18	754	15
14962	87	1	<2	<2	0.5	<2	5	23	14	243	12 /
149 63	58	2	· <2	40	14.5	<2	15	16	32	84	<5)
_ 14964	18	, <1	<2	65	11.3	<2	14	19	24	236	ا و
14965	21	18:1	<2	. 3	0.4	<2	22	36	335	38	13 *
14966	3	<1	<2	<2	0.5	<2	6	16	9	6	< 5
14967	25	<1	<2	9	19.6	<2	22	39	13	20	< 5 }
14968	<2	.<1	<2	<2	0.2	<2	41	57	239	149	108
14969	9	(1	<2	2	0.4	<2	29	39	161	104	57
14970	<2		<2	<2	5,4	<2	13	21	56	13	18



ilbara Laboratories Pty Ltd

Analytical Report

4 Mac Adam Place, Balcatta, Western Australia 6021 Telephone: (09) 344 2411

Telex: AA 93837

Cables: Pilbaralab - Perth

Copy 1: J. E. James

Report Code: 5.

mple Type:Rock chips

Sample Pretta:

lents Order:Desp 0311

brilission Date: May 13, 1980

Method: ICP; Au20; AAS

SAMPLE		Ba	W	Mo.	ca .	Li	
14901	i wasin waa	527	14	325	= :	 39	
14902	1.1	215	16	331	< 5	36	
14903	19.75 -	1220	< 5	6	<5	24	
14904		308	14	14	< 5	26	
14905	* .	398	15	29	<5	30	
14951		49	12	5	<5	27	
14952		215	< 5	22	< 5	21	
14953	t manage	255	13	139.	.<5 <	39	
14954		200	20	92	<5	40	
14955		212	46	82	< 5	37	
14956	-	187	28	61	<5	33	
14957		172	13	22	⟨5๋	20	
14958		133	9	11	< 5	22	
14959		2160	9	8	<5	23	
14960	. :	664	12	13	< 5	24	
14961		968	20	24	<5	23	
14962	100	837	21	27	< 5	25	
14963		81	. 8	9	< 5	23	
14964	* * * * * * * * * * * * * * * * * * * *	137	17	14	<5	22	
14965	** ₹ 3	3630	34	. 54	<5 ,	22	rs
14966		96	14	7	< 5	26	
14967	3.5 3.5	85	17	6	< 5	21	
14968	30 22	408	12	77	< 5	27	7.7
14969		1090	10	54	<5 '	30	* .
14970	31	961	17	29	< 5	13	

ta in ppm unless otherwise stated ...



aboratories Pty. Ltd.

Analytical Report
AMOCO MINERALS AUSTRALIA COMPANY

W 1906

Locality:Rock chips

Sample Type:.

Report Code:

Sample Prefix:.....

Charles Archer 1

Clients Order:Desp 0311 Submission Date: May 13, 1980

Method:ICP; Au20; AAS

4 Mac Adam Place, Balcatta, Western Australia 6021

Telephone: (09) 344 2411

Telex: AA 93837

Cables: Pilboralab - Perth

Copy 1: J. E. James

<u></u> 4								*				
•	SAMPLE	As		Sb	Bi	Au	Sn	<u> </u>	Ni 	v	Cu	2h
. •	14971	11	5	<2	73	88.0	<2	250	185	196	51	40
1	14972	54	<1	<2	<2	0.5	3	71	12	29	141	4 5
1	14973	37	<1	<2	34	15.5	5	53	28	28	309	< 5
	14974	<2	<1	₹2	<2	0.4	8	45	16	2700	7	361
I	14975	15	1	<2	<2	0.5	<2	213	114	303	5 0	7 3
_	14976	15	1	<2	<2	0.4	<2	57	75	413	53 3	53
	14977	<2	<1	<2	<2	0.2	ç 2	14	32	44	26	50
· •	14973	8	~1	<2	<2	0.3	(2	17	11	13	22	< 5
_	14979	48	11	<2	18	17.7	<2	32	5 5	- 33	3390	40
	14980	7	1	<2	55	9.2	<2	7	11	25	43	< 5
_	14981	<2	<1	<2	. <2	0.3	<2	9	14	91	43	12
	14982	2	<1	<2	11	0.2	<2	40	107	53	14	202
4	14933	4	<1	<2	<2	0.2	<2	121	 68	54	535	32
	14984	36	1	<2	2	0.7	<2	1070	225	376	125	30
	14985	27	2	<2	13	0.7	<2	1030	227	267	31	53
	14986	105	35	< 2	4	66.0	. <2	115	140	35	9320	66
1	14987	10	3	. <2	5	3.4	<2	20	21	22	520	< 5
	14988	14	3	<2	<2	0.3	<2	143	35	95	30	42
	14989	11	3.71	<2	, ; <2	0.5	< 2	26	33	127	33 3	3 1
,	14990	<2	1	<2	10	0.3	4	40	131	1740	3 55	407
	14991	31	2	√2 √2	1 3	1.2	<2	97	143	361	1010	6 5 }
	14992 W	36	17	₹2	<2	2.1	<2	85	96	195	5 3	48
	14993	22	1 2	< 2	, 18	0.4	2	<2	<2	34	14	9 0
	14994	34	್ತ 2 ಇತಿಕ್ಕ	4	10	0.2	<2	156	205	105	475	48
	14995	10	1	36 C 2	<2	<0.1	<2	21	47	253	36	29



Pilbara Laboratories Pty Ltd.

Analytical Report
AMOCO MINERALS AUSTRALIA COMPANY

4 Mac Adam Place, Balcatta, Western Australia 6021

Telephone: (09) 344 2411

Telex: AA 93837 Cables: Pilbaralab - Perth

W 1906

ő

Copy 1: J. E. James

Sample Type:.....Rock chips

Sample Prefix:.....

Clients Order:Deso 0311 Submission Date:May 13, 1980

Method:ICP; Au20; AAS

SAMPLE	79 -					
	Ba =======	W	Mo	Cd	Li	
14971	1060	31	100	======	322 <u>22</u> 2	
14972	93		192	< 5	30	
14973		24	17	< 5	23	
14974	121	17	25	<5	21	
_ 14975	363	22	231	<5	34	
149/3 (214	44	43	<5	2 5	
14976	135	5	65	<5	25	. *
14977	246	13	47	<5	23	
14978	100	7	19	< 5	20	
1497)	397	19	24	<5	/ 21	
14980	193	11	7	<5	15	
14000			•	1.5	ŢŢ	
— 14931	829	16	2:)	: <5	21	
14982	212	< 5	31	<5	23	
14983	187	< 5	55	< 5	24	
14984	487	27	143	< 5	30	•
14935	325	21	112	<5	32	
14985	625					
740.35	587	31	47	< 5	26	
14987 14938	100	9	8	< 5	17	
;	553	· 5 5	3 6	<5	17	
14989	1600	46	40	< 5	29	
14990	397 .	33	177	< 5	. 36	
14991	968	50.	57	<5	29	
14992	1390	48	79	< 5	31	
14993	173	56	90	< 5	29	
14994	461	65	112	<5	29 29	
14995	306	66	77	< 5	26	



Pilbara Laboratories Pty Ltd

Analytical Report

AMOCO MINERALS AUSTRALIA COMPANY

4 Mac Adam Place, Balcatta, Western Australia 6021

Telephone: (09) 344 2411

Telex: AA 93837

Cables: Pilbaralab - Perth

Copy 1: J. E. James

Report Code:

W 1905

6

Somple Prefix:.....

Clients Order:Desp 0311

Sample Type:......Rock chips

Submission Date: May 13, 1980

Method: ICP; Au20; AAS

LÁBORATORY OFFICI	۷-	لل.	سلم
	•		

SAMPLE	As	Ag	Sb	Bi ======	Au	Sn	Co	Ni =====	V	Qu	Zn
14996	1 6	4	15	4	0.1	<2	13	б	23	1450	365
14997	1 4	4	4	<2	<0.1	<2	12	9	23 34	1510	365 355
14998	1 <2	2	11	<2	0.3	< 2	4	5	13	735	291
14999	4	2	<2	<2	0.1	(2	2	3	25	24	10 -
1500	1 <2	3	<2	<2	0.1	<2	5	12	23	23	10
	JENHINS	5 was	241~95		10 M		ر وحصربه ه		وعد حرب		1.4
J 0-15	,	3	< 2	<2	0.2	<2	3	7	15		<5
15-30	1 <2	3	<2	<2	0.1	<2	13	21	103	43	37
30-45	1 <2	. 2	<2	<2	<0.1	<2	11	34	50	25	22
45- 60	i <2	1	<2 €	<2	<0.1	√ <2	5	5	3 5	51	24
60-75	 <2	<1	<2	<2	<0.1	<2	9	15	43	15	21
75-90	1 <2	1	<2	<2	<0.1	<2	3	2.)	47	13	23
— 90-105	1 <2	1	<2	<2	<0.1	<2	11	17	42	33	17
105-120	1 <2	<1	<2	<2	0.1	<2	13	21	57	19	25
120-135	1 <2	<1	<2	<2	0.3	< 2	17	4)	39	17	31
135-150	1 <2	<1	<2	<2	0.1	< 2	15	40	37	15	30
1.1 0 7.7	WHEAL		ME		O ME		01/105		Any pla	5	
■W 0-15	<2	<1	<2	<2	1.1	<2	14	25	35	19	23
15-30	· -	<1	<2	<2	0.1	< 2	12	19	41	20	30
30-45	<2	<1	. <2	<2	0.1	<2	19	43	31	. 37	45
45 - 60	<2	<1	<2	<2	<0.1	<2	15	31	85	23	42
60-75	•	<1	<2	<2	<0.1	<2	23	101	120	19	53 🖔
7 5 – 90	<2	<1	<2	<2	<0.1	<2	13	21	43	21	21
90-105	l <2	<1	<2 €	<2	0.1	<2	15	23	54	14	23
105-120	l <2	<1	<2	<2	<0.1	<2	30	58	118	39	54
	MISSING S	AMPLE								3,	71
L35-150	1 <2	<1	<2	<2	<0.1	<2	11	19	57	13	25

ita in ppm unless otherwise stated ...



Pilbara Laboratories Pty. Ltd.

Analytical Report

AMOCO MINERALS AUSTRALIA COMPANY

4 MacAdam Place, Balcatta, Western Australia 6021

Telephone: (09) 344 2411

Telex: AA 93837 Cables: Pilbaralab - Perth

6

₩ 1906

Project:

Report Code:

....

Locality:

Page:

Sample Type:Rock chips

Sample Prefix:....

LABORATORY OFFICER:

Copy 1: J. E. James

SAMPLE | Ba W 110 Cd. Li 14995 | 100 18 18 <5 20 14997 | 125 19 б <5 21 14998 1 91 13 3 <5 19 14999 | 136 <5 8 **<**5 23 15000 I 1950 16 24 **<**5 23 0-15 | 102 **<**5 10 **<**5 21 15-30 | 2223 14 23 <5 23 30-45 1350 б 26 <5 24 45-60 I 1390 10 17 <5 21 60-75 1560 6 25 **<**5 25 75-90 1 1710 15 16 **<**5 25 90-105 | 795 11 20 **<**3 22 05-120 | 735 <5 39 **<**5 22 20-135 751 5 32 **<**5 23 135-150 | 1600 6 38 <5 22 0-15 2070 10 25 **<**3 20 15-30 | 1730 10 38 **<**5 13 30-45 1 946 13 44 <5 21 45-60 J 1190 7 44 <5 20 60-75 | 1140 9 67 <5 20 75-90 | 1310 14 32 **<**5 19 90-105 | 1020 16 32 <5 19 05-120 I 1030 17 43 ₹5 21 120-135 | *MISSING SAMPLE* ₿5**-1**50 | 1420 12 33 **<**5 21



Pilbara Laboratories Pty. Ltd.



Analytical Report

Report Code:

N 2556

Data Sheet

REGISTERED LABORATORY NUMBER 1076

.... September 24, 1980

MacAdam Place, Balcatta, Western Australia, 6021

And the second s	•			- 5	-					
• 4 3014	7	13	104	' 5	<2	4	1	<2	< 5	< 2
43015	. 36	17	139	5	- 5	<2	<1	<2	<5	<2
43016	17	24	10	2	3	2	<1	<2	, < 5	2
43017	< 5	14	9	5	<2	<2	1.	<2	< 5	< 2
43018	< 5	10	. 8	4	<2	< 2	<1	<2	7	< 2
43019	< 5	20	10	13	<2	< 2	<1	<2		< 2
43020	10 Aut 7	18	· 3 5	*· 21 //	:<2	<2	<1	<2	(5	< 2
43021	14	25	29	35	<2	<2	<1	< 2	< 5	<2
43022	23	40	46	65	5	<2	3	<2	< 5	< 2

PIIDATA LADOTATORIES Pry Lid



Analytical Report

port Code:

N 2556

September

Data Sheet

Page: 2 of

REGISTERED LABORATOR

NUMBER 1076

MacAdam Place, Balcatta, Western Australia, 6021.

- 4	PORT	Dete:	oc	D.cemoc									
	*			and the second	33, Y	No. 27 36	1.000			A	35. A. T. A		
	*	` * _ <u>-</u> ·	The state of	nh.	- 	71.1	A. C. C.	7 T	Rb	Ba	was W	Pt	Au
'n.	SAN	PLE		PU	> DI	2 24		744		· · · · · · · · · · · · · · · · · · ·			-
102												*	

						· · · · · · · · · · · · · · · · · · ·				
43014	6	< 5	23	<100	31	6	75	7	<2	<0.1
43015	13	< 5	< 5	<100	16	5	97	< 5	<2	<0.1
43016	34	<5	< 5	<100	49	8	145	13	<2	<0.1
43017	23	< 5	< 5	<100	15	5	136	7	<2	<0.1
43018 \	12	<5	6	<100 [†]	30	< 5 ·	. 123 /	< 5	<2	<0.1
43019	13	< 5	35	<100	36	24	191	15	<2	<0.1
43020	25	. (5	. 41	<100	101	82	839	22	<2	<0.1
43021	33	<5	49	<100/	166	73	1530	20	, 2	<0.1
43022	3680	< 5	51	<100	194	45	±75	25	< 2	<0.1