Open File Envelope No. 6819

EL 1376

HOPE BANK

PROGRESS AND FINAL REPORTS FOR THE PERIOD 5/1/87 TO 5/7/88

Submitted by

CRA Exploration Pty Ltd
1988

Enquiries: Customer Services
Ground Floor
101 Grenfell Street, Adelaide 5000

Telephone: (08) 8463 3000
Facsimile: (08) 8204 1880

PRIMARY INDUSTRIES AND RESOURCES SA

CONTENTS ENVELOPE 6819

TENEMENT: E.L. 1376

TENEMENT HOLDER: CRA Exploration Pty. Ltd.

CRA EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)
Adelaide Office: 31 OSMOND TERRACE, NORWOOD 5067
Head Office: 55 COLLINS STREET, MELBOURNE 3001

P.O. BOX 254 Norwood
TELEPHONE: 42 8871
TELEGRAMS: "EXPLORECO"
TELEX: AA 88605

30th April, 1987

The Director-General,
Department of Mines & Energy, South Australia
P.O. Box 151,
EASTWOOD. S.A. 5063.

Dear Sir,

Re: Hope Bank E.L. 1376, S.A.

Report For Quarter Ended 5th April, 1987

No field work was undertaken.

Digital aeromagnetic data was purchased from the BMR. Data will be COMTAL imaged by CRAE's Canberra Research Group to aid geological mapping.

Expenditure for the quarter to the nearest accounting period amounted to to: $5339.00. The expenditure consisted of:

Payroll	$1770.00
General Supplies	$ 414.00
Vehicle Operation	$ 80.00
Travel	$1434.00
Property	$ 720.00
General Overheads	$ 921.00
Total	$5339.00

Yours faithfully,

W.H. JOHNSTON
CHIEF GEOLOGIST, S.A./N.T.

WHJ/pq

CRA EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)

Adelaide Office: 31 OSMOND TERRACE, NORWOOD 5067
Head Office: 55 COLLINS STREET, MELBOURNE 3001

P.O. BOX 254 Norwood
TELEPHONE: 42 8871
TELEGRAMS: "EXPLORECO"
TELEX: AA 88605

9th July, 1987

The Director General,
S.A. Department of Mines & Energy,
P.O. Box 151,
EASTWOOD. S.A. 5063

Dear Sir,

Re: HOPE BANK E.L. 1376

Second Quarterly Report - Period Ending 5 July, 1987

No field work was undertaken.

Digital aeromagnetic data purchased from the BMR was COMTAL imaged by CRAE Canberra Research Group.

A detailed stream geochemical sampling has been planned and is programmed to commence in mid July 1987. Concurrently a detailed stratagraphic mapping at 1:40 000 scale will be undertaken.

Expenditure for the quarter to the nearest accounting period amounted to $1,443.00, the expenditure consisted of:

Payroll	$ 892.00
General Supplies	$ 119.00
General Overheads	$ 432.00
	$1443.00

Yours faithfully,

W.H. JOHNSTON
Chief Geologist

WHJ/dp

CRA EXPLORATION PTY. LIMITED

THIRD QUARTERLY REPORT FOR HOPE BANK EL 1376, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 5TH OCTOBER, 1987

AUTHORS: B. MURRELL
S.P. SUGDEN

DATE: 21ST OCTOBER, 1987

COPIES TO: CIS CANBERRA
SADME

SUBMITTED BY:

ACCEPTED BY:

CONTENTS

LIST OF PLANS

Plan No.	Title	Scale
SAa 4244	Hope Bank EL 1376, S.A. - Location Plan	1:250 000
SAa 4742	Hope Bank EL 1376, S.A. - Sample Sites, Catchments and Geology - Overbank Clays	1:100 000

LIST OF TABLES

LIST OF APPENDICES

1. SUMMARY

Overbank silt samples were collected from four hundred and fifty-two catchments in the 0.5 km^2 to 5.0 km^2 size range. A nominal -10 micron fraction separated from these samples was analysed for twenty elements including gold. A further one hundred and ten soil samples east of the Waukaringa Mine and from the drainage divides of the catchment sampled by 1239595 and six rock samples from miscellaneous locations were also collected.

Mapping of the licence area showed that the Tarcowie Siltstone, the host of the Waukaringa and Ajax Mines, changed along strike from being a prominent ridge-forming unit to one of low relief favoured as drainage lines. These portions were not tested by previous licence holders, nor covered by sampling in this survey. Sampling is recommended.

Forty adjacent catchments anomalous in gold only, all drain the upper glacial sequence (Elatina Subgroup). This reinforces the indication from the regional survey that gold concentrations occur at this stratigraphic level (e.g. at the Dustholes Mine, Mt. Grainger) and are probably fluvial concentrations.

2. LOCATION

Hope Bank EL 1376 is located approximately 20 km north west of the Yunta township on the Adelaide-Broken Hill Highway (plan no. SAa 4244).

3. RECOMMENDATIONS

3.1 Interpretation

Final assays have been only recently received. Therefore only preliminary interpretations and recommendations have been made. Further, more detailed interpretation is necessary before the next phase of field work begins and final recommendations made.

3.2 Spur Soil Sampling

Marginal spurs and subdividing spurs of catchments showing sufficient anomaly to be of interest should be soil sampled at 100 m spacing. This should allow delineation of the parts of the catchments containing the source of the anomaly.

3.3 Gridding

Areas such as the upper portion of the catchment represented by sample 1239595 need to be soil sampled on a grid pattern no bigger than about 25 m x 125 m to delineate targets for backhoe costeaning and channel sampling.

3.4 Costeaning

The valley expression of the Tarcowie Siltstone upstream and downstream of Folly Dam should be exposed in at least three sections by a digger or backhoe costean (the cover is generally less than 2 m) and channel samples collected over zones of argillic alteration and other rock types of interest.

4. INTRODUCTION

Hope Bank EL 1376 was granted to CRA Exploration Pty. Limited on the 6th January, 1987 for a period of one year. The licence covers an area of approximately 1303 sq km and covers parts of East Wydown, McCoys Well, Melton, Minburra, Teetulpa & Wabricoola stations.

In the period 1981 to 1985, Utah spent in excess of, (Historical), $600,000 sampling and drilling a tenement with approximately the same boundaries in an attempt to locate a Telfer style gold resource without success (SADME Open File Report envelope No. 4547). The stream sediment geochemistry approach used in this survey was designed to test all subcrop within the licence area regardless of stratigraphy and the multi-element signature used to rate areas of anomalous gold.

5. GEOLOGY

The main rock units found within the licence are the Adelaidean sediments of the Yudnamutana, Farina & Elatina Subgroups and Wilpena Group. Thin Quaternary sands, gravels and alluvium cover much of the above stratigraphy.

Table 1 describes the Adelaidean stratigraphy in greater detail.

Locally the licence covers the eastern and western closures of the Waukaringa Syncline and a parallel antiform in the same sequence to the south. The mineralisation at Waukaringa and Ajax mines (which lie in that portion of the Waukaringa Syncline not held by CRAE) is associated

with quartz and arsenical pyrite filling dilation zones in layer-parallel fault planes. At Waukaringa Mine, material on the dumps (apparently from development work) contains superfine sulphide mineralisation in sandstones and black siltstones, suggesting that the mineralisation in the quartz lodes occurs nearby to primary mineralisation in the sediments.

Table 1

ADELAIDEAN STRATIGRAPHY - HOPE BANK EL 1376

Group	Unit	Lithology
Wilpena Gp	Pound Sst.	Quartzite feldspathic sandstone & siltstone
	Wonoka Fmn.	Calcareous siltstone & shale minor limestone & quartzites
	Ulupa siltstone	Siltstone (Brachina Equliv)
Elatina Sub Gp - Upper Glacial Gp		Diamictite & fluvials
Farina Sub Gp (intraglacials)	Undifferentiated	Shales, siltstone, carbonatic siltstones, minor carbonate units
	Tarcowie siltstone	Siltstone & sandstone
	Willochra Fmn.	Siltstone, shale, minor gritty sandstone & limestone
	Tapley Hill Fmn.	Siltstone, limestone, minor breccia bands, slump conglomerates & sandstone
Yunnamunta Sub Gp	Wilyerpa Qtzite	Sandstone, siltstone and minor tillites
	Appilla Tillite	Boulder tillite siltstone & sandstone
Callana Gp	Undifferentiated	

6. CONCEPTS

The target sought is disseminated gold mineralisation which would have been too fine in grain size to have led to discovery of the source by panning. A number of pannable gold occurrences were located in the district during the Nineteenth Century including the Teetulpa alluvial goldfield and the layer-parallel lodes of the Waukaringa and Manna Hill goldfields. The one to two metre thick regolith which mantles much of this region is considered sufficient cover to mask mineralisation not associated with quartz veins or major gossans, but not sufficient to hide a chemical signature.

The kaolinitic clays of the regolith have a small but significant cation exchange capacity. The choice of clay-size material as a sample medium for this project was forced by the dynamics of this landscape. Much runoff is as sheet flood during rainstorms and little material above sand-size is transported to the drainage lines. The quartz sand/silt component is assumed chemically inert and its removal gives a more homogeneous sample medium than is able to be obtained by sieving. The relatively normal distribution of the background populations of most base metals as they report in their frequency distribution histograms appears to support this assumption. The occurrence of multi-element signatures in some samples is considered more significant than outstanding gold values.

7. SAMPLING

Stream sediment samples were collected at sites pre-determined by plotting stereoscopically over the aerial photographs. Each site represented a primary catchment in the size range 0.5 to 5.0 km^2. Samples were collected from the overbank silts/clays of the floodplain, with care being taken that the sample was not dominated by local colluvium. Where no flood plain was developed, silts were collected from clay curls in dried pool bottoms, settling areas behind bushes in the channel or remnant overbank deposits exposed in the sediments along the creek bank. Clay size fraction material, separated from the overbank silts by suspension and decantation, was submitted for analysis.

Four hundred and fifty-two catchments were sampled in the first pass and a further 68 soil samples were collected at 100 m spacing along lines crossing the mine-host stratigraphic sequence in the axial zone of the syncline east of the Waukaringa Mine. Soil samples were processed identically to the overbank silts. Little horizon differentiation is present in these soils though well developed argillic B-horizons are occasionally seen in remnant palaeosols. The soils are mainly skeletal (A)/C soils with a large lithic component. Aeolian sand sheets mantle these in some areas and the ubiquitous drainage line calcretes which form upon both fresh and kaolinized rocks suggests that much of the soil carbonate is derived from a carbonate component brought in the sand sheets.

All samples were analysed for gold to a nominal detection limit of 0.0005 ppm (aqua regia digest/solvent extraction/FAAS) 8 other elements were determined by AAS and a further 10 by ICP. In addition the first 181 samples were assayed for platinum and palladium by lead fire assay.

One catchment with anomalous gold values (1239595) supported by a multi-element signature (which was identified from the first batch of results received) was followed up by collecting 42 soil samples at 100 m spacings up the spurs bounding the catchment from the original sample site. The source of the anomaly appears to be in the Tindelpina Shale Member and higher up in the lower part of the Tapleys Hill Formation.

8. INITIAL RESULTS

The first pass sampling over the whole exploration licence area revealed an area in which all catchments sampling the upper glacial package (mapped as Elatina Subgroup) reported elevated gold values. This stretches from east of Wabricoola Homestead to west of One Tree Hill on McCoys Well. These results are not supported by anomalies in other elements with sulphide affinities, so it is considered that this gold may be derived from fluvial concentrations in reworked zones within this unit.

In regional orientation work it was noted that an arsenic/antimony association did not follow stratigraphic units but crossed the stratigraphy on a north-northeasterly trend. During geological reconnaissance this was found to be the trend of closely spaced joint sets. North of Melton (outside the licence area) some of these joints were noted filled by a quartz/siderite/haematite after sulphide association, but usually a thin selvedge of slightly ferruginized rock rather more resistant to weathering (presumably also silicified) than the adjacent material is all that can be observed. These joints cut and displace the layer-parallel quartz veins of both the Waukaringa Lode type and the short strike parallel quartz pods which abound in this area.

One robust multi-element anomaly appeared from the first data set (1239595). Follow up results have only recently been received, which have shown a zone of anomalous gold associated with the Tindelpina shale member and further up the lower part of the Tapleys Hill Formation.

The geomorphic expression of the Tarcowie Siltstone was noted to change quite abruptly around the region from a strong ridge-former as at Waukaringa and Ajax Mines to a zone of no outcrop favoured as the drainage line as at the Eighteen Mile and Folly Dams. Examination of stream bottom exposures east of Folly Dam showed three zones of apparent argillic alteration within pyritic silts. The Utah map shows that these zones were not sampled, but as the Folly Dam area lies adjacent to the anticline of Apilla Tillite where Utah recorded

much of their gold anomalism and to catchment 1239595 with its multi-element signature, it is considered that further examination of this interval is warranted. Thin-sections cut from the argillic alteration zone which under the hand lens appeared to have the possibility of an acid tuff component, showed only calcification of altered siltstone.

S.P. SUGDEN / B. MURRELL

SPS/BM/pq

EXPENDITURE

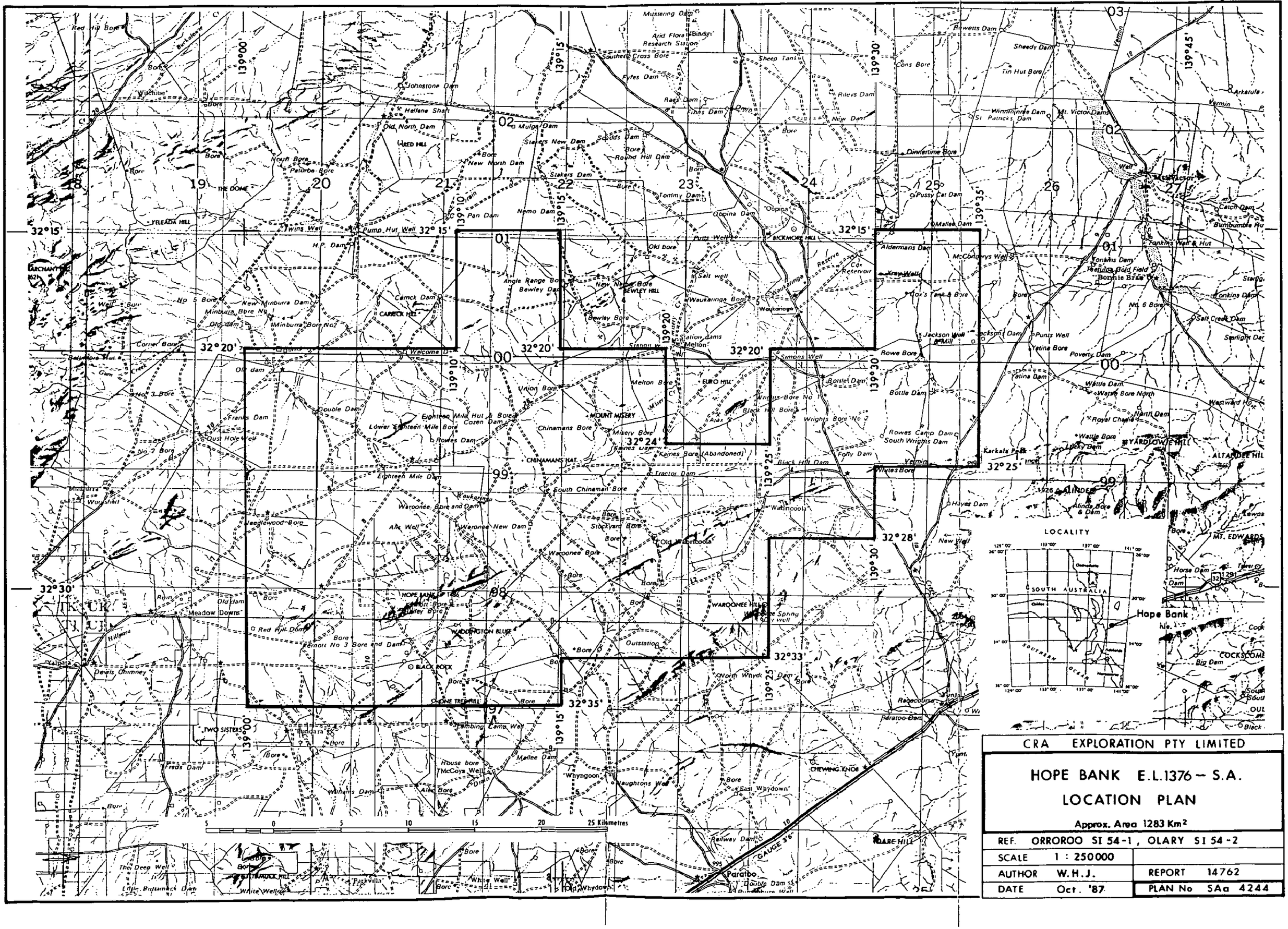
Expenditure for the period ended 30th September, 1987 the nearest accounting period amounted to $61 330.00, as listed below.

	$
Payroll	29 544
Supplies	1 790
Vehicle	3 858
Travel	1 055
Rent	5 481
Contractors	7 347
Laboratory	3 469
Sundry	600
Overheads	8 186
Total	$61 330

KEYWORDS

Gold, Geochemistry - Stream Sediment, Clays, Soils, Multi-Element, Waukaringa, South Australia

00016



CRA EXPLORATION PTY LIMITED

HOPE BANK E.L.1376 – S.A.

LOCATION PLAN

Approx. Area 1283 Km²

REF.	ORROROO SI 54-1, OLARY SI 54-2		
SCALE	1 : 250000		
AUTHOR	W.H.J.	REPORT	14762
DATE	Oct. '87	PLAN No	SAa 4244

APPENDIX I

ANALYTICAL RESULTS

amdel
technology and enterprise

Amdel
31 Flemington Street,
Frewville, S.A. 5063

Telephone: (08) 372 2700

Address all correspondence to:
P.O. Box 114,
Eastwood, S.A. 5063

Telex: AA82520
Facsimile: (08) 79 6623

NATA CERTIFICATE
Amdel Limited - Inc. in S.A.

25 August 1987

Dr. B. Murrell
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609

REPORT AC 134/88

YOUR REFERENCE: DPO 46556

REPORT COMPRISING: Cover sheet
Page G1-G10
Page I1-I10

DATE RECEIVED: 13 July 1987

Approved Signatory: Don Patterson

D. Patterson

Manager, Geo-Analytical Services

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc Administration Officer
PO Box 656
FYSHWICK ACT 2609

cc Chief Geologist Information Services
PO Box 656
FYSHWICK ACT 2609

The report relates specifically to the sample tested and also the entire batch in so far as the sample is truly representative of the sample source.

tk

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G1

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239417	<2	11	35	27	<1	26	11	73
1239418	<2	13	30	30	<1	28	11	72
1239419	<2	13	30	27	<1	26	11	69
1239420	<2	12	37	25	<1	27	13	83
1239421	<2	12	34	27	<1	23	14	84
1239422	<2	11	32	25	<1	23	12	68
1239423	<2	14	33	25	<1	26	14	89
1239424	<2	21	39	27	<1	31	23	105
1239425	<2	17	35	28	<1	29	14	96
1239426	<2	16	37	27	<1	28	19	89
1239427	<2	10	29	21	<1	22	12	64
1239428	<2	19	35	31	<1	30	18	90
1239429	<2	10	26	22	<1	20	11	59
1239430	4	13	38	29	<1	28	16	82
1239431	<2	17	37	28	1	28	16	78
1239432	<2	9	28	24	<1	25	12	73
1239433	3	19	33	30	<1	28	20	79
1239434	2	16	39	34	<1	32	18	76
1239435	<2	13	33	25	<1	28	14	92
1239436	<2	17	30	33	2	32	21	97
1239437	<2	17	32	29	<1	28	15	82
1239438	3	13	30	28	<1	24	15	83
1239439	4	14	34	27	<1	25	14	92
1239440	3	15	33	27	<1	27	16	90
1239441	<2	11	29	25	<1	22	11	70
1239442	<2	12	32	24	<1	23	12	79
1239443	<2	10	24	21	<1	19	8	61
1239444	3	12	32	26	<1	21	11	76
1239445	<2	11	25	24	<1	19	10	68
1239446	<2	14	36	27	<1	24	16	89
1239447	<2	10	24	22	<1	18	9	68
1239448	<2	13	37	28	<1	24	14	87
1239449	<2	10	23	21	<1	17	9	63
1239450	<2	11	28	25	<1	21	15	77
1239451	<2	14	27	27	<1	23	13	72
1239452	4	12	27	24	<1	20	14	88
1239453	<2	11	25	28	<1	21	11	74
1239454	3	13	27	25	<1	26	12	79
1239455	<2	15	31	33	<1	24	16	83
1239456	<2	13	31	28	<1	25	14	79
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G2

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239457	<2	9	26	24	2	19	10	60
1239458	2	12	35	31	1	25	18	73
1239459	<2	12	31	27	2	23	14	72
1239460	<2	14	34	23	2	22	18	88
1239461	<2	14	32	27	3	24	17	85
1239462	<2	13	35	25	2	22	15	74
1239463	<2	13	35	26	3	22	14	80
1239464	<2	14	32	23	2	20	15	90
1239465	<2	12	26	20	2	19	13	82
1239466	<2	9	22	20	4	15	9	55
1239467	<2	14	34	29	3	24	11	90
1239468	<2	9	25	22	1	16	9	65
1239469	3	8	27	23	<1	16	10	64
1239470	<2	13	38	34	<1	25	9	83
1239471	<2	12	34	25	1	22	12	77
1239472	<2	14	32	29	1	25	15	99
1239473	<2	14	39	26	1	24	15	86
1239474	<2	13	37	29	<1	27	13	90
1239475	<2	8	22	17	<1	18	6	59
1239476	2	13	35	26	<1	27	12	87
1239477	<2	17	35	26	<1	27	18	97
1239478	<2	12	30	28	<1	26	15	84
1239479	<2	13	29	27	<1	24	13	79
1239480	<2	10	27	25	<1	22	10	74
1239481	<2	10	28	24	2	24	12	82
1239482	<2	10	25	25	<1	23	10	74
1239483	3	15	32	30	1	29	17	86
1239484	<2	16	32	30	2	31	17	88
1239485	<2	11	33	28	3	29	12	89
1239486	<2	12	30	27	<1	27	9	86
1239487	<2	11	26	27	<1	23	12	82
1239488	<2	11	33	24	<1	27	11	82
1239489	<2	13	33	26	<1	27	13	94
1239490	<2	16	43	25	<1	28	16	93
1239491	<2	12	35	24	<1	23	14	77
1239492	<2	7	26	18	1	18	4	56
1239493	<2	12	39	30	1	22	9	78
1239494	<2	16	40	31	1	32	12	86
1239495	<2	14	36	28	1	27	13	87
1239496	<2	11	37	27	2	25	12	86
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G3

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239497	<2	12	34	27	<1	24	10	79
1239498	<2	11	32	23	1	23	10	76
1239499	2	12	37	27	2	29	11	98
1239500	<2	15	39	25	2	28	14	93
1239501	<2	14	40	26	<1	29	12	95
1239502	3	13	38	26	<1	24	14	87
1239503	<2	15	37	26	<1	26	14	88
1239504	<2	13	36	28	2	24	11	79
1239505	<2	12	27	27	1	23	10	75
1239506	<2	11	29	26	<1	22	13	82
1239507	<2	13	33	30	<1	28	15	110
1239508	<2	12	33	35	<1	22	10	73
1239509	<2	12	34	32	<1	23	10	75
1239510	<2	9	26	31	<1	18	11	72
1239511	<2	11	22	30	2	22	10	71
1239512	<2	11	26	29	2	22	10	73
1239513	<2	10	23	28	2	20	11	64
1239514	<2	11	23	32	3	26	12	79
1239515	<2	20	37	36	<1	33	22	110
1239516	<2	15	31	34	<1	31	16	105
1239517	<2	12	31	32	1	28	11	87
1239518	<2	14	34	31	<1	30	10	110
1239519	<2	17	32	31	2	33	17	100
1239520	<2	11	28	26	1	29	9	91
1239521	<2	19	38	36	1	38	17	115
1239522	<2	15	34	42	<1	34	17	105
1239523	<2	15	32	39	<1	35	16	105
1239524	<2	13	43	33	<1	33	14	105
1239525	<2	15	22	31	<1	38	9	76
1239526	<2	13	33	34	<1	28	7	89
1239527	<2	14	37	28	<1	35	10	100
1239528	<2	17	39	28	1	36	15	115
1239529	<2	13	38	30	<1	35	7	100
1239530	<2	14	38	32	<1	30	12	98
1239531	<2	13	36	33	<1	25	9	86
1239532	<2	13	29	33	<1	25	8	81
1239533	<2	15	39	32	2	32	12	115
1239534	<2	13	30	28	1	28	11	110
1239535	<2	12	36	36	2	35	14	105
1239536	<2	14	41	32	2	33	14	125
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G4

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239541	<2	14	27	34	1	28	7	87
1239542	<2	15	25	29	2	29	7	94
1239543	<2	13	29	27	2	28	10	81
1239544	<2	9	21	26	1	17	11	61
1239545	<2	13	25	32	2	20	28	90
1239546	<2	13	21	37	3	21	29	95
1239547	<2	10	24	30	3	19	19	76
1239548	<2	11	24	20	<1	19	32	55
1239549	<2	14	33	26	<1	29	15	79
1239550	5	14	29	25	<1	25	14	71
1239551	<2	10	22	24	<1	20	9	58
1239552	3	11	25	25	<1	22	7	67
1239553	<2	11	24	24	<1	21	9	61
1239554	<2	11	26	25	1	19	9	69
1239555	<2	14	32	26	2	24	13	88
1239556	<2	12	29	25	1	21	12	82
1239557	<2	14	32	24	1	22	15	93
1239558	<2	10	27	28	<1	20	10	71
1239559	<2	15	31	26	<1	23	12	88
1239560	<2	13	32	29	<1	26	12	88
1239561	<2	12	35	28	<1	28	13	93
1239562	<2	14	32	29	<1	29	12	88
1239563	<2	11	30	29	1	22	14	85
1239564	4	11	28	30	<1	22	12	75
1239565	<2	12	30	32	2	22	12	79
1239566	<2	13	27	32	1	23	12	77
1239567	<2	14	29	32	2	23	17	89
1239568	<2	16	35	34	1	27	14	105
1239569	<2	15	34	26	2	25	18	100
1239570	<2	13	32	27	1	23	21	100
1239571	<2	14	32	26	2	22	17	90
1239572	<2	19	42	31	1	27	20	98
1239573	4	12	30	30	<1	18	14	68
1239574	<2	16	31	34	2	25	15	86
1239575	<2	11	35	25	2	21	13	86
1239576	3	10	31	23	<1	18	12	73
1239577	3	11	33	24	1	20	10	79
1239578	5	18	38	26	1	28	17	94
1239579	3	16	39	27	2	<2	15	92
1239580	<2	22	36	31	1	24	21	94
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G5

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239581	<2	11	31	23	<1	18	10	81
1239582	<2	20	32	23	<1	21	16	96
1239583	<2	11	39	30	<1	18	15	83
1239584	<2	13	37	26	<1	22	12	78
1239585	<2	20	39	29	<1	26	20	93
1239586	<2	23	40	33	<1	28	20	94
1239587	<2	13	34	27	<1	21	11	75
1239588	<2	12	41	33	<1	24	14	92
1239589	<2	14	35	28	<1	22	19	90
1239590	<2	19	39	31	<1	24	19	86
1239591	<2	15	40	32	<1	23	19	90
1239592	<2	20	42	32	1	28	17	100
1239593	<2	25	42	31	2	28	18	85
1239594	<2	13	38	31	<1	22	14	92
1239595	<2	21	60	35	<1	34	41	180
1239596	<2	13	37	24	1	21	20	91
1239597	<2	16	43	34	2	27	21	90
1239598	<2	14	41	30	<1	27	19	85
1239599	<2	11	31	28	1	22	14	76
1239600	<2	15	40	28	1	25	18	95
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G6

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239417	0.0010	0.001	0.001
1239418	0.0025	<0.001	0.002
1239419	0.0005	<0.001	0.002
1239420	0.0005	<0.001	0.001
1239421	0.0005	<0.001	0.002
1239422	0.0025	<0.001	0.001
1239423	0.0015	<0.001	0.002
1239424	0.0015	0.001	0.002
1239425	0.0015	<0.001	0.002
1239426	0.0015	<0.001	0.002
1239427	0.0010	0.001	0.002
1239428	0.0005	<0.001	0.001
1239429	0.0035	<0.001	0.002
1239430	0.0020	0.001	0.001
1239431	0.0020	0.001	0.002
1239432	0.0010	<0.001	<0.001
1239433	0.0025	0.001	0.001
1239434	0.0035	<0.001	<0.001
1239435	0.0040	<0.001	<0.001
1239436	0.0600	<0.001	<0.001
1239437	0.0030	<0.001	<0.001
1239438	0.0320	0.001	<0.001
1239439	0.0080	<0.001	<0.001
1239440	0.0015	0.001	0.001
1239441	0.0045	0.002	<0.001
1239442	0.0010	0.002	0.002
1239443	0.0025	0.002	0.001
1239444	0.0015	<0.001	0.001
1239445	0.0030	<0.001	0.002
1239446	0.0015	0.001	0.001
1239447	0.0015	<0.001	0.002
1239448	0.0010	<0.001	0.001
1239449	0.0005	<0.001	0.002
1239450	0.0015	<0.001	0.001
1239451	0.0005	<0.001	0.002
1239452	0.0005	<0.001	0.002
1239453	0.0045	<0.001	0.002
1239454	0.0030	<0.001	0.001
1239455	0.0025	<0.001	0.001
1239456	0.0110	<0.001	0.002

Detn limit(.0005)(0.001)(0.001)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G7

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239457	0.0015	<0.001	0.002
1239458	0.0015	<0.001	0.001
1239459	0.0010	0.002	0.003
1239460	0.0030	<0.001	0.001
1239461	0.0015	0.001	0.002
1239462	0.0025	<0.001	<0.001
1239463	0.0015	<0.001	0.002
1239464	0.0005	<0.001	<0.001
1239465	0.0020	<0.001	0.001
1239466	0.0005	<0.001	0.002
1239467	0.0005	<0.001	0.002
1239468	0.0005	<0.001	0.002
1239469	0.0005	<0.001	0.002
1239470	0.0020	0.001	0.001
1239471	0.0005	<0.001	0.004
1239472	0.0005	<0.001	<0.001
1239473	0.0005	<0.001	0.002
1239474	0.0005	<0.001	0.001
1239475	0.0005	<0.001	<0.001
1239476	0.0005	<0.001	0.001
1239477	0.0005	<0.001	0.003
1239478	0.0005	<0.001	0.002
1239479	0.0030	<0.001	0.001
1239480	0.0025	<0.001	0.002
1239481	0.0015	<0.001	0.001
1239482	0.0010	<0.001	0.001
1239483	0.0015	<0.001	0.002
1239484	0.0015	<0.001	0.001
1239485	0.0025	<0.001	<0.001
1239486	0.0030	<0.001	<0.001
1239487	0.0010	<0.001	0.002
1239488	0.0010	<0.001	0.001
1239489	0.0010	<0.001	0.003
1239490	0.0010	<0.001	0.003
1239491	0.0025	<0.001	0.004
1239492	0.0050	<0.001	0.004
1239493	0.0020	<0.001	0.002
1239494	0.0015	<0.001	0.005
1239495	0.0015	0.001	0.010
1239496	0.0010	<0.001	0.009
Detn limit	(.0005)	(0.001)	(0.001)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G8

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239497	0.0010	<0.001	0.001
1239498	0.0005	<0.001	<0.001
1239499	0.0005	<0.001	<0.001
1239500	0.0025	<0.001	<0.001
1239501	0.0005	<0.001	<0.001
1239502	0.0005	<0.001	0.001
1239503	0.0005	<0.001	0.001
1239504	0.0005	<0.001	0.002
1239505	0.0005	<0.001	0.001
1239506	0.0005	<0.001	0.002
1239507	0.0005	<0.001	0.001
1239508	0.0005	<0.001	0.002
1239509	0.0005	<0.001	0.002
1239510	0.0005	0.001	0.002
1239511	0.0005	<0.001	<0.001
1239512	0.0015	<0.001	<0.001
1239513	0.0025	<0.001	0.001
1239514	0.0005	<0.001	<0.001
1239515	0.0005	<0.001	0.001
1239516	0.0005	<0.001	<0.001
1239517	0.0005	<0.001	<0.001
1239518	0.0025	<0.001	<0.001
1239519	0.0010	<0.001	<0.001
1239520	0.0005	<0.001	0.001
1239521	0.0005	<0.001	<0.001
1239522	0.0005	<0.001	<0.001
1239523	0.0005	<0.001	<0.001
1239524	0.0005	<0.001	<0.001
1239525	0.0005	<0.001	<0.001
1239526	0.0005	<0.001	<0.001
1239527	0.0005	<0.001	<0.001
1239528	0.0015	<0.001	<0.001
1239529	0.0005	<0.001	<0.001
1239530	0.0005	<0.001	<0.001
1239531	0.0005	<0.001	<0.001
1239532	0.0005	<0.001	<0.001
1239533	0.0005	<0.001	0.001
1239534	0.0005	<0.001	<0.001
1239535	0.0005	<0.001	<0.001
1239536	0.0005	<0.001	<0.001

Detn limit(.0005)(0.001)(0.001)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G9

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239541	0.0050	<0.001	<0.001
1239542	0.0025	<0.001	0.003
1239543	0.0005	<0.001	0.003
1239544	0.0005	<0.001	0.003
1239545	0.0060	<0.001	0.002
1239546	0.0035	<0.001	0.002
1239547	0.0025	<0.001	0.003
1239548	0.0025	<0.001	0.003
1239549	0.0020	<0.001	0.002
1239550	0.0020	<0.001	0.003
1239551	0.0030	<0.001	0.004
1239552	0.0035	0.001	0.003
1239553	0.0030	<0.001	0.002
1239554	0.0035	<0.001	0.002
1239555	0.0020	<0.001	<0.001
1239556	0.0030	<0.001	0.003
1239557	0.0020	<0.001	0.001
1239558	0.0035	<0.001	<0.001
1239559	0.0045	<0.001	0.001
1239560	0.0040	<0.001	0.002
1239561	0.0025	<0.001	0.001
1239562	0.0045	<0.001	<0.001
1239563	0.0010	<0.001	<0.001
1239564	0.0025	<0.001	<0.001
1239565	0.0015	<0.001	0.001
1239566	0.0010	<0.001	0.003
1239567	0.0005	<0.001	0.001
1239568	0.0005	0.001	0.001
1239569	0.0005	<0.001	0.001
1239570	0.0005	<0.001	<0.001
1239571	0.0005	0.001	0.002
1239572	0.0040	0.001	0.003
1239573	0.0025	<0.001	0.002
1239574	0.0005	<0.001	0.003
1239575	0.0025	<0.001	0.005
1239576	0.0015	<0.001	0.003
1239577	0.0025	<0.001	0.003
1239578	0.0045	<0.001	0.002
1239579	0.0055	0.001	<0.001
1239580	0.0045	<0.001	0.002
Detn limit	(.0005)	(0.001)	(0.001)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G10

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239581	0.0050	<0.001	0.002
1239582	0.0025	0.001	0.001
1239583	0.0025	<0.001	0.002
1239584	0.0020	<0.001	0.003
1239585	0.0020	<0.001	0.003
1239586	0.0020	0.001	0.002
1239587	0.0020	0.002	0.001
1239588	0.0025	<0.001	0.004
1239589	0.0035	<0.001	0.002
1239590	0.0015	<0.001	0.003
1239591	0.0030	0.001	0.002
1239592	0.0030	<0.001	0.002
1239593	0.0035	0.001	0.001
1239594	0.0030	0.003	0.001
1239595	0.0160	<0.001	<0.001
1239596	0.0025	<0.001	<0.001
1239597	0.0025	<0.001	<0.001
1239598	0.0020	<0.001	<0.001
1239599	0.0025	<0.001	0.003
1239600	0.0015	<0.001	<0.001
Detn limit	(.0005)	(0.001)	(0.001)

amdel

00029

Analysis code ICP2 Report AC 134/88 Page I1

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239417	10	160	4.78%	560	320	35	140	<5
1239418	10	200	4.14%	940	500	35	120	5
1239419	10	180	4.38%	800	380	35	130	5
1239420	5	170	4.98%	560	340	35	140	<5
1239421	10	240	4.36%	700	500	35	140	5
1239422	5	170	4.58%	580	360	35	130	5
1239423	5	180	5.35%	1100	550	35	140	<5
1239424	10	220	5.65%	1450	650	40	160	<5
1239425	5	180	4.88%	1000	450	40	140	<5
1239426	10	180	5.75%	960	550	40	150	<5
1239427	5	130	4.22%	560	340	35	120	<5
1239428	10	180	5.40%	1200	600	35	150	<5
1239429	10	150	3.96%	450	300	30	120	5
1239430	10	180	5.65%	800	600	45	180	<5
1239431	10	150	5.30%	860	500	35	150	<5
1239432	10	140	4.04%	460	320	30	110	5
1239433	10	180	5.20%	1250	600	40	150	<5
1239434	10	160	5.75%	880	550	40	160	<5
1239435	5	160	4.62%	440	800	35	130	<5
1239436	15	220	3.98%	1300	800	35	120	5
1239437	10	180	4.74%	880	400	35	140	<5
1239438	10	190	4.14%	680	550	35	130	5
1239439	10	190	4.38%	780	600	40	130	5
1239440	10	170	4.70%	840	450	35	140	<5
1239441	10	140	4.22%	470	280	35	130	<5
1239442	10	160	4.38%	660	400	40	130	5
1239443	10	170	3.30%	400	400	30	100	10
1239444	5	150	4.68%	500	360	35	130	<5
1239445	10	160	3.90%	480	400	30	120	5
1239446	10	180	4.94%	780	550	40	150	<5
1239447	10	130	3.24%	460	450	30	110	10
1239448	10	180	5.30%	660	500	40	150	5
1239449	10	110	2.80%	410	400	30	95	10
1239450	10	170	3.98%	560	450	30	120	5
1239451	10	130	3.86%	600	360	25	120	<5
1239452	10	180	3.94%	600	550	35	120	10
1239453	10	140	3.24%	490	500	30	100	5
1239454	15	150	3.58%	600	650	30	120	10
1239455	10	150	4.46%	720	500	35	130	<5
1239456	15	150	3.46%	580	700	35	110	10
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 134/88 Page I2

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239457	10	130	2.88%	410	360	30	95	5
1239458	10	140	4.78%	500	300	35	140	<5
1239459	10	110	3.38%	490	320	30	100	5
1239460	10	130	3.48%	620	450	30	110	5
1239461	10	150	3.74%	720	600	35	110	5
1239462	5	85	3.76%	490	300	30	110	<5
1239463	10	150	3.70%	600	500	35	130	5
1239464	10	200	4.00%	700	700	35	140	10
1239465	5	140	2.80%	580	500	30	95	5
1239466	10	110	2.06%	280	340	20	75	5
1239467	10	140	2.88%	560	500	30	100	10
1239468	5	95	2.24%	320	400	25	90	5
1239469	5	140	2.14%	300	360	25	95	10
1239470	<5	170	4.42%	410	450	<5	70	<5
1239471	<5	160	4.28%	580	380	<5	65	<5
1239472	<5	160	4.34%	680	600	<5	70	<5
1239473	<5	75	4.64%	640	400	<5	70	<5
1239474	<5	170	4.50%	680	400	<5	75	<5
1239475	<5	110	2.62%	380	400	5	40	5
1239476	<5	160	4.38%	660	380	<5	70	<5
1239477	<5	220	4.60%	940	650	<5	75	<5
1239478	<5	160	4.06%	660	400	<5	65	<5
1239479	<5	160	4.14%	680	550	<5	65	<5
1239480	<5	160	3.46%	520	600	<5	60	5
1239481	<5	170	3.48%	560	600	<5	60	5
1239482	<5	140	3.34%	460	500	<5	55	5
1239483	<5	170	4.26%	720	500	<5	70	<5
1239484	<5	160	4.56%	860	450	<5	70	<5
1239485	<5	150	3.80%	380	380	<5	75	5
1239486	<5	150	3.94%	520	500	<5	70	5
1239487	<5	150	3.56%	560	650	<5	60	5
1239488	<5	110	3.44%	520	650	<5	50	5
1239489	<5	130	4.26%	700	700	<5	60	<5
1239490	<5	170	4.66%	800	550	<5	70	<5
1239491	<5	150	4.08%	620	450	<5	70	<5
1239492	10	180	2.40%	240	400	10	45	15
1239493	<5	140	5.15%	660	400	<5	70	<5
1239494	<5	190	4.32%	940	700	<5	75	5
1239495	<5	160	4.44%	800	600	<5	80	<5
1239496	<5	140	4.18%	660	650	<5	75	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 134/88 Page I3

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239497	<5	130	3.62%	600	650	<5	70	5
1239498	<5	140	3.82%	620	600	<5	65	5
1239499	<5	160	4.34%	800	900	<5	80	<5
1239500	<5	210	4.62%	1000	600	<5	80	<5
1239501	<5	160	4.76%	960	500	<5	75	<5
1239502	<5	200	4.50%	820	700	<5	80	5
1239503	<5	150	4.44%	1050	550	<5	70	<5
1239504	<5	190	4.22%	680	650	<5	80	5
1239505	<5	130	3.20%	490	600	<5	65	5
1239506	<5	160	3.34%	560	750	<5	65	5
1239507	<5	140	4.46%	860	800	<5	75	<5
1239508	<5	160	4.00%	580	500	<5	80	<5
1239509	<5	170	4.26%	640	400	<5	80	<5
1239510	<5	140	3.38%	520	450	<5	60	<5
1239511	<5	140	3.22%	540	450	<5	55	5
1239512	<5	110	2.50%	350	380	<5	55	<5
1239513	5	95	2.26%	280	340	<5	55	5
1239514	<5	75	2.12%	330	240	<5	40	<5
1239515	<5	190	4.86%	1100	500	10	50	<5
1239516	<5	150	4.20%	780	450	10	45	<5
1239517	5	150	3.60%	500	450	10	40	5
1239518	<5	100	4.14%	660	550	10	45	5
1239519	<5	170	4.24%	860	600	10	50	5
1239520	<5	95	3.60%	460	360	10	35	<5
1239521	<5	190	5.25%	880	380	10	50	<5
1239522	<5	190	4.70%	660	400	10	50	<5
1239523	<5	180	4.40%	680	400	10	55	<5
1239524	<5	130	4.68%	600	380	10	50	<5
1239525	15	160	5.65%	1150	750	10	60	<5
1239526	5	140	3.94%	540	500	10	50	5
1239527	<5	85	4.36%	500	340	10	45	<5
1239528	<5	160	5.20%	1050	500	10	55	<5
1239529	<5	150	4.58%	840	450	10	50	<5
1239530	<5	210	4.48%	880	750	10	55	5
1239531	<5	170	4.12%	580	450	10	50	<5
1239532	<5	160	3.66%	600	650	10	50	10
1239533	<5	180	4.94%	740	500	10	60	<5
1239534	5	130	4.10%	640	800	10	50	5
1239535	<5	95	4.66%	440	360	10	50	<5
1239536	<5	130	5.70%	720	400	10	55	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 134/88 Page I4

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239541	<5	220	3.90%	720	600	10	50	5
1239542	5	180	4.04%	620	650	10	45	5
1239543	<5	210	4.26%	680	650	10	50	5
1239544	<5	170	3.04%	450	450	10	45	5
1239545	<5	220	4.14%	1150	750	10	50	5
1239546	5	190	4.10%	1300	800	10	45	5
1239547	<5	190	3.54%	470	450	10	50	10
1239548	5	170	3.50%	920	850	10	40	10
1239549	<5	250	4.18%	780	600	10	50	5
1239550	<5	180	4.82%	640	360	10	45	<5
1239551	5	190	2.86%	430	400	10	40	10
1239552	<5	240	3.30%	420	400	10	35	10
1239553	<5	210	3.20%	520	500	10	40	10
1239554	<5	220	3.60%	460	450	10	45	10
1239555	<5	230	5.00%	780	600	10	50	5
1239556	<5	220	4.18%	660	650	10	45	10
1239557	<5	290	4.72%	820	700	10	60	5
1239558	<5	160	3.28%	410	400	10	35	10
1239559	<5	260	4.70%	820	650	10	50	5
1239560	<5	190	4.90%	660	500	10	55	5
1239561	<5	150	5.10%	620	450	10	45	<5
1239562	<5	220	4.36%	660	500	10	50	5
1239563	<5	210	4.24%	520	450	5	45	<5
1239564	<5	190	3.80%	430	400	10	45	10
1239565	<5	190	4.10%	470	400	10	45	5
1239566	<5	200	4.34%	620	550	10	45	5
1239567	<5	200	4.86%	860	650	25	85	<5
1239568	<5	200	6.55%	1000	700	25	95	<5
1239569	<5	210	6.25%	840	550	30	95	<5
1239570	<5	200	6.15%	780	700	30	95	<5
1239571	<5	200	5.35%	820	650	25	95	5
1239572	<5	210	6.75%	1200	650	25	100	<5
1239573	5	190	4.30%	560	600	25	85	10
1239574	5	190	5.35%	780	700	25	95	5
1239575	5	180	4.62%	620	600	25	85	5
1239576	<5	170	4.04%	500	450	25	80	10
1239577	5	180	4.20%	540	600	25	80	10
1239578	<5	190	5.30%	1100	500	25	95	<5
1239579	<5	200	5.30%	1000	550	30	100	<5
1239580	5	240	5.15%	1450	600	25	100	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 134/88 Page I5

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239581	5	160	3.78%	450	400	20	80	10
1239582	5	190	4.32%	860	500	20	90	5
1239583	<5	85	5.55%	460	380	30	100	<5
1239584	5	210	5.05%	640	450	30	100	<5
1239585	5	170	5.90%	1050	600	30	110	<5
1239586	5	210	5.65%	1350	650	30	110	<5
1239587	5	170	4.62%	660	450	30	95	<5
1239588	10	180	5.80%	720	600	35	110	<5
1239589	5	220	4.96%	820	550	30	100	5
1239590	5	160	5.45%	1050	500	30	110	<5
1239591	5	180	5.80%	780	550	30	110	<5
1239592	5	220	5.80%	1150	550	35	110	<5
1239593	5	120	5.40%	1150	500	30	120	<5
1239594	5	210	5.25%	700	380	30	110	<5
1239595	10	410	6.55%	1500	1850	55	130	<5
1239596	5	230	4.66%	760	450	30	100	<5
1239597	5	190	5.65%	920	500	35	120	<5
1239598	5	170	4.84%	760	400	30	100	<5
1239599	5	160	3.60%	450	380	25	80	5
1239600	5	200	5.05%	800	380	30	110	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

Analysis code ICP2 Report AC 134/88 Page I6

NATA Certificate Results in ppm

Sample	Sn	W
1239417	30	25
1239418	30	25
1239419	30	25
1239420	35	30
1239421	35	30
1239422	35	30
1239423	35	25
1239424	40	35
1239425	35	30
1239426	40	30
1239427	30	30
1239428	35	30
1239429	30	25
1239430	40	35
1239431	35	30
1239432	25	25
1239433	35	35
1239434	40	35
1239435	30	25
1239436	30	30
1239437	35	30
1239438	30	30
1239439	35	30
1239440	30	30
1239441	30	30
1239442	35	30
1239443	25	25
1239444	35	30
1239445	30	25
1239446	35	30
1239447	25	25
1239448	40	30
1239449	20	25
1239450	25	30
1239451	20	25
1239452	30	30
1239453	25	25
1239454	25	30
1239455	30	30
1239456	25	30
Detn limit	(5)	(5)

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Analysis code ICP2 Report AC 134/88 Page I7

NATA Certificate Results in ppm

Sample	Sn	W
1239457	25	25
1239458	30	30
1239459	25	25
1239460	25	30
1239461	25	30
1239462	25	30
1239463	30	30
1239464	30	30
1239465	20	25
1239466	15	20
1239467	20	30
1239468	15	20
1239469	20	20
1239470	25	<5
1239471	25	<5
1239472	25	<5
1239473	25	<5
1239474	25	<5
1239475	15	<5
1239476	25	<5
1239477	25	<5
1239478	20	<5
1239479	25	<5
1239480	20	<5
1239481	20	<5
1239482	20	<5
1239483	20	<5
1239484	20	<5
1239485	20	<5
1239486	25	<5
1239487	20	<5
1239488	15	<5
1239489	20	<5
1239490	25	<5
1239491	20	<5
1239492	15	<5
1239493	30	<5
1239494	25	<5
1239495	25	<5
1239496	25	<5
Detn limit	(5)	(5)

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Analysis code ICP2 Report AC 134/88 Page I8

NATA Certificate Results in ppm

Sample	Sn	W
1239497	20	<5
1239498	20	<5
1239499	20	<5
1239500	25	<5
1239501	20	<5
1239502	25	<5
1239503	20	<5
1239504	25	<5
1239505	15	<5
1239506	15	<5
1239507	20	<5
1239508	25	<5
1239509	25	<5
1239510	20	<5
1239511	15	<5
1239512	15	<5
1239513	15	<5
1239514	10	<5
1239515	15	<5
1239516	15	<5
1239517	15	<5
1239518	15	<5
1239519	15	<5
1239520	10	<5
1239521	20	<5
1239522	20	<5
1239523	15	<5
1239524	15	<5
1239525	10	<5
1239526	15	<5
1239527	10	<5
1239528	15	<5
1239529	15	<5
1239530	15	<5
1239531	15	<5
1239532	15	<5
1239533	20	<5
1239534	15	<5
1239535	15	<5
1239536	15	<5
Detn limit	(5)	(5)

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Analysis code ICP2 Report AC 134/88 Page I9

NATA Certificate Results in ppm

Sample	Sn	W
1239541	15	<5
1239542	15	<5
1239543	15	<5
1239544	15	<5
1239545	15	<5
1239546	15	<5
1239547	15	<5
1239548	15	<5
1239549	15	<5
1239550	15	<5
1239551	10	<5
1239552	15	<5
1239553	15	<5
1239554	15	<5
1239555	20	<5
1239556	15	<5
1239557	20	<5
1239558	15	<5
1239559	20	<5
1239560	20	<5
1239561	20	<5
1239562	15	<5
1239563	15	<5
1239564	15	<5
1239565	15	<5
1239566	15	<5
1239567	20	<5
1239568	30	<5
1239569	30	<5
1239570	30	<5
1239571	30	5
1239572	25	<5
1239573	25	5
1239574	25	5
1239575	25	5
1239576	25	5
1239577	25	5
1239578	25	5
1239579	30	5
1239580	25	5
Detn limit	(5)	(5)

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Analysis code ICP2 Report AC 134/88 Page I10

NATA Certificate Results in ppm

Sample	Sn	W
1239581	20	10
1239582	20	10
1239583	25	5
1239584	25	10
1239585	25	5
1239586	30	5
1239587	25	10
1239588	30	5
1239589	25	5
1239590	30	10
1239591	30	5
1239592	30	5
1239593	25	10
1239594	30	5
1239595	45	20
1239596	30	5
1239597	30	10
1239598	25	5
1239599	20	10
1239600	30	5
Detn limit	(5)	(5)

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technology and enterprise

Amdel
31 Flemington Street,
Frewville, S.A. 5063

Telephone: (08) 372 2700

Address all correspondence to:
P.O. Box 114,
Eastwood, S.A. 5063

Telex: AA82520
Facsimile: (08) 79 6623

NATA CERTIFICATE

Amdel Limited - Inc. in S.A.

26 August 1987

Dr. Burton Murrell
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609

REPORT AC 517/88

YOUR REFERENCE: DPO 46557

REPORT COMPRISING: Cover sheet
Page I1-I12
Page G1-G12

DATE RECEIVED: 18 August 1987

Approved Signatory: Don Patterson

D. Patterson

Manager, Geo-Analytical Services

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc CRA Exploration Pty Ltd
PO Box
YUNTA SA 5440

cc Chief Geologist Information Services
PO Box 656
FYSHWICK ACT 2609

The report relates specifically to the sample tested and also the entire batch in so far as the sample is truly representative of the sample source.

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Analysis code ICP2 Report AC 517/88 Page I1

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239537	<5	240	5.65%	1500	500	10	10	<5
1239538	<5	210	4.98%	820	380	5	5	<5
1239539	<5	170	6.00%	1100	400	15	5	<5
1239540	<5	180	5.95%	1350	500	20	10	5
1239601	<5	240	5.80%	1550	750	20	10	<5
1239602	<5	200	6.05%	1100	550	25	15	5
1239603	<5	290	4.68%	450	600	15	<5	<5
1239604	<5	250	6.90%	1050	550	25	<5	<5
1239605	<5	210	5.60%	1100	500	15	10	<5
1239606	<5	190	4.94%	720	400	10	<5	<5
1239607	<5	220	5.35%	1050	550	10	<5	<5
1239608	<5	190	5.55%	920	400	10	<5	<5
1239609	<5	210	5.90%	800	380	20	<5	<5
1239610	<5	170	5.65%	800	360	20	<5	<5
1239611	<5	210	5.60%	1000	500	10	5	<5
1239612	<5	210	5.75%	1000	450	10	<5	<5
1239613	<5	230	5.10%	920	550	10	<5	<5
1239614	<5	230	5.85%	960	450	25	5	5
1239615	<5	180	5.55%	840	400	25	<5	5
1239616	5	200	6.40%	1050	500	35	<5	10
1239617	<5	190	6.05%	840	500	30	5	5
1239618	<5	230	6.80%	1250	600	30	5	5
1239619	<5	170	5.90%	620	320	20	<5	<5
1239620	<5	240	5.60%	940	400	15	<5	<5
1239621	<5	160	4.88%	640	360	15	<5	<5
1239622	<5	200	5.85%	900	550	25	5	10
1239623	<5	190	5.75%	1200	500	20	5	5
1239624	<5	140	4.62%	880	400	15	5	<5
1239625	<5	180	5.30%	940	400	15	5	<5
1239626	<5	160	5.00%	680	360	15	<5	<5
1239627	<5	170	5.45%	1050	500	15	10	<5
1239628	<5	140	5.80%	960	500	10	10	<5
1239629	<5	120	4.68%	760	380	5	<5	<5
1239630	<5	130	5.10%	1100	240	5	<5	<5
1239631	<5	140	4.60%	880	380	<5	5	<5
1239632	<5	180	4.96%	840	380	10	5	<5
1239633	<5	150	5.55%	800	380	10	10	<5
1239634	<5	140	5.60%	840	360	10	5	<5
1239635	<5	160	5.50%	700	320	15	<5	<5
1239636	<5	100	4.64%	900	300	10	5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 517/88 Page I2

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239637	<5	170	5.20%	900	450	10	5	<5
1239638	<5	200	5.45%	700	340	10	<5	<5
1239639	<5	180	4.96%	820	400	10	<5	<5
1239640	<5	130	5.00%	500	260	10	<5	<5
1239641	<5	140	5.05%	1000	300	10	5	<5
1239642	<5	130	5.20%	640	400	10	5	<5
1239643	<5	150	5.20%	1050	300	15	5	<5
1239644	<5	150	4.66%	760	340	5	5	<5
1239645	<5	210	5.10%	660	320	10	<5	<5
1239646	<5	180	4.60%	580	380	10	<5	<5
1239647	<5	140	4.52%	720	300	5	10	<5
1239648	<5	160	4.96%	760	450	10	5	<5
1239649	<5	190	5.00%	800	400	10	<5	<5
1239650	<5	180	5.35%	960	400	10	5	<5
1239651	<5	160	4.86%	980	380	10	5	<5
1239652	<5	170	5.35%	820	400	10	<5	<5
1239653	<5	160	4.90%	760	450	10	<5	<5
1239654	<5	130	5.30%	600	360	10	5	<5
1239655	<5	180	5.10%	820	380	10	5	<5
1239656	<5	150	5.20%	800	450	15	5	<5
1239657	<5	150	4.76%	660	360	10	<5	<5
1239658	<5	160	4.54%	620	240	10	<5	<5
1239659	<5	160	5.40%	840	340	10	<5	<5
1239660	<5	120	5.05%	760	320	10	5	<5
1239661	<5	120	5.55%	940	500	5	<5	<5
1239662	<5	140	5.40%	560	340	15	<5	<5
1239663	<5	130	5.60%	640	360	20	<5	5
1239664	<5	170	5.25%	560	300	15	<5	<5
1239665	<5	170	5.90%	740	400	15	<5	<5
1239666	<5	150	6.10%	720	340	15	5	<5
1239667	<5	160	4.96%	520	300	10	<5	<5
1239668	<5	150	5.95%	840	450	15	<5	<5
1239669	<5	160	5.45%	520	500	15	<5	5
1239670	<5	180	4.74%	540	300	10	<5	<5
1239671	<5	150	5.80%	800	340	15	<5	<5
1239672	<5	130	5.15%	700	300	15	<5	<5
1239673	<5	160	6.45%	880	650	15	<5	<5
1239674	<5	140	5.95%	940	500	20	5	5
1239675	<5	170	4.70%	600	500	15	<5	<5
1239676	<5	160	5.85%	880	360	20	<5	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 517/88 Page I3

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239677	<5	140	5.80%	800	360	15	<5	<5
1239678	<5	160	5.90%	700	360	20	<5	5
1239679	<5	150	5.85%	720	450	15	<5	<5
1239680	<5	170	6.00%	920	450	15	<5	<5
1239681	<5	100	5.10%	660	320	10	10	<5
1239682	<5	150	5.50%	820	360	10	<5	<5
1239683	<5	160	5.55%	920	450	15	<5	<5
1239684	<5	130	6.25%	660	360	15	<5	<5
1239685	<5	130	6.20%	680	450	15	<5	<5
1239686	<5	150	5.80%	800	400	10	<5	<5
1239687	<5	150	5.70%	680	400	10	<5	<5
1239688	<5	150	5.85%	900	400	10	<5	<5
1239689	<5	140	5.35%	980	380	15	<5	<5
1239690	<5	140	4.06%	500	400	10	<5	<5
1239691	<5	160	5.10%	800	360	10	<5	<5
1239692	<5	160	4.28%	820	400	15	<5	<5
1239693	<5	170	3.78%	400	450	15	<5	<5
1239694	<5	120	4.22%	760	280	10	<5	<5
1239695	<5	110	4.40%	920	360	10	<5	<5
1239696	<5	110	3.88%	720	220	15	<5	<5
1239697	<5	130	4.96%	880	360	15	<5	<5
1239698	<5	170	4.98%	1200	400	10	<5	<5
1239699	<5	180	4.74%	900	450	15	<5	<5
1239700	<5	160	4.84%	980	500	15	<5	<5
1239701	<5	190	5.25%	1450	450	15	<5	<5
1239702	<5	130	5.15%	840	450	10	<5	<5
1239703	<5	150	4.60%	1050	550	10	<5	<5
1239704	<5	170	4.56%	700	650	15	<5	5
1239705	<5	170	5.90%	1000	450	15	<5	<5
1239706	<5	180	5.05%	1050	550	15	<5	<5
1239707	<5	180	5.25%	660	650	15	<5	5
1239708	<5	130	3.78%	700	800	10	5	5
1239709	<5	170	5.20%	840	450	15	5	5
1239710	<5	180	4.82%	760	500	20	5	5
1239711	<5	180	5.40%	800	550	15	10	5
1239712	<5	170	5.40%	720	500	15	5	5
1239713	<5	130	3.84%	520	450	15	5	5
1239714	<5	170	5.45%	800	450	15	5	5
1239715	<5	200	5.95%	980	500	15	<5	5
1239716	<5	180	5.90%	980	500	15	<5	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 517/88 Page I4

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239717	<5	170	5.50%	920	500	20	<5	5
1239718	<5	180	5.60%	820	450	20	<5	5
1239719	5	180	5.30%	780	550	15	<5	5
1239720	<5	170	5.35%	720	400	20	<5	5
1239721	5	180	5.55%	760	550	20	<5	5
1239722	5	200	5.70%	940	550	20	<5	5
1239723	<5	180	5.35%	760	550	15	<5	5
1239724	<5	170	5.55%	700	550	15	<5	5
1239725	<5	150	4.58%	580	550	10	<5	<5
1239726	<5	140	4.90%	700	360	5	<5	<5
1239727	<5	160	4.52%	640	550	10	<5	<5
1239728	<5	140	4.68%	740	450	10	<5	<5
1239729	<5	130	4.54%	600	600	10	<5	<5
1239730	<5	160	5.40%	800	400	10	5	<5
1239731	<5	150	5.35%	740	400	15	<5	<5
1239732	<5	160	4.98%	820	600	10	10	5
1239733	<5	170	4.42%	600	650	10	<5	<5
1239734	<5	180	5.10%	920	700	10	5	<5
1239735	<5	180	4.80%	860	600	15	<5	<5
1239736	<5	120	3.50%	450	500	10	<5	5
1239737	<5	150	4.54%	620	550	5	<5	<5
1239738	<5	170	5.25%	960	500	10	5	<5
1239739	<5	140	3.74%	480	650	15	<5	5
1239740	<5	140	4.28%	620	550	10	<5	5
1239741	<5	180	4.68%	700	600	10	<5	<5
1239742	<5	170	4.30%	580	600	5	<5	<5
1239743	<5	150	4.40%	620	600	10	<5	<5
1239744	<5	180	5.65%	1000	650	10	5	<5
1239745	<5	140	4.48%	640	500	10	<5	<5
1239746	<5	160	3.88%	520	600	10	<5	5
1239747	<5	140	4.10%	620	650	10	<5	<5
1239748	<5	140	4.02%	620	600	5	<5	<5
1239749	<5	140	4.06%	600	700	10	<5	<5
1239750	<5	190	5.10%	860	550	10	<5	<5
1239751	<5	150	4.12%	540	360	10	<5	<5
1239752	<5	150	5.75%	660	320	15	<5	<5
1239753	<5	150	5.10%	560	400	10	<5	<5
1239754	<5	180	5.45%	920	500	15	<5	<5
1239755	<5	120	4.56%	640	450	10	<5	<5
1239756	45	140	4.66%	500	400	10	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 517/88 Page I5

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239757	170	170	5.40%	560	550	10	<5	5
1239758	<5	180	5.50%	1100	450	15	<5	<5
1239759	<5	130	5.20%	660	240	15	<5	<5
1239760	<5	190	4.54%	640	550	10	<5	<5
1239761	<5	180	5.65%	1100	500	15	<5	<5
1239762	35	200	6.00%	840	550	15	<5	<5
1239763	<5	160	5.50%	700	450	15	<5	<5
1239764	<5	150	5.35%	860	550	15	<5	<5
1239765	<5	150	5.05%	940	400	10	<5	<5
1239766	<5	150	5.20%	440	280	15	<5	<5
1239767	<5	100	3.16%	440	300	10	<5	<5
1239768	<5	95	2.28%	270	100	10	<5	<5
1239769	<5	150	4.26%	540	500	10	<5	<5
1239770	<5	130	5.20%	860	400	15	<5	<5
1239771	<5	150	5.60%	1050	500	20	<5	<5
1239772	<5	130	5.90%	920	550	20	<5	<5
1239773	<5	160	5.70%	600	450	20	<5	5
1239774	<5	150	5.20%	720	400	15	<5	<5
1239775	<5	150	5.80%	720	450	15	<5	<5
1239776	<5	180	5.80%	960	550	15	<5	5
1239777	<5	160	5.40%	880	450	15	<5	5
1239778	<5	150	5.50%	820	550	15	<5	<5
1239779	<5	140	5.70%	760	650	20	<5	5
1239780	<5	150	5.90%	500	300	20	<5	5
1239781	<5	100	6.15%	640	320	15	<5	5
1239782	<5	150	5.55%	780	500	15	<5	5
1239783	<5	130	4.70%	540	450	15	<5	5
1239784	<5	160	5.40%	600	340	15	<5	5
1239785	<5	170	5.80%	720	340	20	<5	5
1239786	<5	170	4.52%	580	500	15	<5	5
1239787	<5	120	3.42%	380	450	15	<5	5
1239788	<5	170	5.95%	720	450	20	<5	5
1239789	<5	200	6.35%	700	600	20	<5	5
1239790	<5	170	7.10%	860	500	20	<5	<5
1239791	<5	200	5.70%	680	750	25	<5	<5
1239792	<5	160	6.15%	600	450	20	<5	<5
1239793	<5	200	5.85%	820	500	20	<5	<5
1239794	<5	200	5.45%	820	650	15	<5	<5
1239795	<5	140	5.60%	760	320	15	<5	<5
1239796	<5	150	5.80%	760	400	15	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I6

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239797	<5	200	5.90%	860	500	20	<5	<5
1239798	<5	210	5.15%	660	900	15	<5	5
1239799	<5	230	6.65%	1000	700	20	<5	<5
1239800	<5	200	6.20%	1100	700	15	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I7

NATA Certificate Results in ppm

Sample	Sn	W
1239537	20	<5
1239538	20	<5
1239539	25	<5
1239540	25	<5
1239601	20	<5
1239602	25	<5
1239603	15	<5
1239604	30	<5
1239605	20	<5
1239606	20	<5
1239607	20	<5
1239608	20	<5
1239609	25	<5
1239610	20	<5
1239611	20	<5
1239612	20	<5
1239613	20	<5
1239614	25	5
1239615	25	5
1239616	30	10
1239617	25	5
1239618	25	5
1239619	25	<5
1239620	20	<5
1239621	20	<5
1239622	25	5
1239623	20	<5
1239624	15	<5
1239625	20	<5
1239626	20	<5
1239627	15	<5
1239628	20	<5
1239629	10	<5
1239630	10	<5
1239631	10	<5
1239632	15	<5
1239633	15	<5
1239634	15	<5
1239635	20	<5
1239636	10	<5
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I8

NATA Certificate Results in ppm

Sample	Sn	W
1239637	15	<5
1239638	20	<5
1239639	20	<5
1239640	20	<5
1239641	15	<5
1239642	15	<5
1239643	15	<5
1239644	15	<5
1239645	20	<5
1239646	15	<5
1239647	15	<5
1239648	20	<5
1239649	15	<5
1239650	15	<5
1239651	15	<5
1239652	20	<5
1239653	15	<5
1239654	15	<5
1239655	15	<5
1239656	15	<5
1239657	15	<5
1239658	15	<5
1239659	15	<5
1239660	15	<5
1239661	15	<5
1239662	15	<5
1239663	20	<5
1239664	20	<5
1239665	20	<5
1239666	20	<5
1239667	15	<5
1239668	20	<5
1239669	15	<5
1239670	15	<5
1239671	20	<5
1239672	15	<5
1239673	20	<5
1239674	15	<5
1239675	15	<5
1239676	20	<5
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I9

NATA Certificate Results in ppm

Sample	Sn	W
1239677	20	<5
1239678	20	<5
1239679	20	<5
1239680	20	<5
1239681	15	<5
1239682	15	<5
1239683	15	<5
1239684	20	<5
1239685	20	<5
1239686	15	<5
1239687	15	<5
1239688	20	<5
1239689	15	<5
1239690	15	<5
1239691	20	<5
1239692	15	<5
1239693	15	<5
1239694	15	<5
1239695	15	<5
1239696	15	<5
1239697	15	<5
1239698	15	<5
1239699	15	<5
1239700	20	<5
1239701	20	<5
1239702	15	<5
1239703	15	<5
1239704	20	<5
1239705	20	<5
1239706	20	<5
1239707	15	<5
1239708	10	<5
1239709	15	<5
1239710	15	<5
1239711	15	<5
1239712	20	<5
1239713	15	<5
1239714	20	<5
1239715	20	<5
1239716	20	<5
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I10

NATA Certificate Results in ppm

Sample	Sn	W
1239717	20	<5
1239718	20	<5
1239719	20	<5
1239720	20	<5
1239721	20	<5
1239722	20	<5
1239723	20	<5
1239724	20	<5
1239725	15	<5
1239726	15	<5
1239727	10	<5
1239728	15	<5
1239729	10	<5
1239730	15	<5
1239731	15	<5
1239732	15	<5
1239733	15	<5
1239734	15	<5
1239735	15	<5
1239736	10	<5
1239737	15	<5
1239738	15	<5
1239739	15	<5
1239740	15	<5
1239741	15	<5
1239742	10	<5
1239743	15	<5
1239744	15	<5
1239745	15	<5
1239746	15	<5
1239747	15	<5
1239748	15	<5
1239749	15	<5
1239750	15	<5
1239751	15	<5
1239752	20	<5
1239753	20	<5
1239754	20	<5
1239755	15	<5
1239756	10	<5
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I11

NATA Certificate Results in ppm

Sample	Sn	W
1239757	15	<5
1239758	15	<5
1239759	20	<5
1239760	15	<5
1239761	20	<5
1239762	20	<5
1239763	20	<5
1239764	15	<5
1239765	15	<5
1239766	20	<5
1239767	10	<5
1239768	10	<5
1239769	15	<5
1239770	15	<5
1239771	20	<5
1239772	20	<5
1239773	20	<5
1239774	20	<5
1239775	20	<5
1239776	20	<5
1239777	20	<5
1239778	20	<5
1239779	20	<5
1239780	20	<5
1239781	20	<5
1239782	20	<5
1239783	15	<5
1239784	20	<5
1239785	20	<5
1239786	20	<5
1239787	15	<5
1239788	25	<5
1239789	25	<5
1239790	25	<5
1239791	25	<5
1239792	25	<5
1239793	20	<5
1239794	20	<5
1239795	20	<5
1239796	20	<5
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I12

NATA Certificate Results in ppm

Sample	Sn	W
1239797	20	<5
1239798	20	<5
1239799	25	<5
1239800	20	<5
Detn limit	(5)	(5)

amdel

00052

Analysis code PM1/3SPE Report AC 517/88 Page G1

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239537	<2	18	37	37	<1	35	23
1239538	<2	14	40	30	<1	33	20
1239539	<2	19	42	33	<1	29	19
1239540	<2	17	42	31	<1	26	22
1239601	<2	18	41	34	<1	28	22
1239602	<2	15	41	33	<1	30	20
1239603	<2	9	35	23	<1	27	12
1239604	<2	10	41	26	<1	26	19
1239605	<2	13	41	28	<1	26	19
1239606	<2	11	38	23	<1	23	19
1239607	<2	12	41	27	<1	27	23
1239608	<2	12	42	23	<1	25	18
1239609	<2	11	41	26	<1	24	21
1239610	<2	12	42	25	<1	24	19
1239611	<2	14	42	28	1	29	20
1239612	<2	13	42	28	<1	30	22
1239613	<2	11	36	24	1	20	20
1239614	<2	11	42	26	<1	24	23
1239615	<2	12	42	26	<1	25	23
1239616	<2	14	41	26	<1	22	20
1239617	<2	11	41	29	<1	24	20
1239618	<2	13	43	29	<1	22	22
1239619	<2	9	59	29	1	27	18
1239620	<2	12	58	26	<1	27	21
1239621	<2	10	50	23	<1	20	19
1239622	<2	13	58	28	<1	23	19
1239623	<2	14	54	27	<1	23	21
1239624	<2	11	47	26	<1	19	24
1239625	<2	11	51	24	<1	22	23
1239626	<2	10	49	24	<1	21	18
1239627	<2	14	48	27	<1	23	25
1239628	<2	12	51	33	<1	29	26
1239629	<2	10	39	24	<1	22	22
1239630	<2	14	45	27	<1	30	19
1239631	<2	11	38	23	<1	20	18
1239632	<2	14	45	27	<1	23	22
1239633	<2	15	45	28	<1	23	20
1239634	<2	14	47	31	<1	28	19
1239635	<2	13	45	30	<1	23	16
1239636	<2	18	40	26	<1	26	16
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 517/88 Page G2

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239637	<2	15	45	27	<1	26	21
1239638	<2	13	48	27	<1	22	18
1239639	<2	14	43	31	<1	24	14
1239640	<2	11	49	28	<1	24	14
1239641	<2	18	44	30	<1	25	17
1239642	<2	14	45	29	<1	24	15
1239643	<2	19	45	27	<1	29	18
1239644	<2	14	41	28	<1	25	19
1239645	<2	12	48	25	<1	22	18
1239646	<2	11	42	28	<1	21	17
1239647	<2	17	46	29	<1	25	19
1239648	<2	16	49	28	<1	24	20
1239649	<2	16	46	23	<1	26	19
1239650	<2	18	50	27	<1	24	19
1239651	<2	19	48	26	<1	25	20
1239652	<2	15	50	27	<1	26	21
1239653	<2	14	44	25	<1	22	18
1239654	<2	15	49	28	<1	27	19
1239655	<2	15	45	24	<1	29	19
1239656	<2	16	47	24	<1	23	20
1239657	<2	15	47	23	<1	22	18
1239658	<2	14	48	24	<1	24	16
1239659	<2	19	50	29	<1	28	20
1239660	<2	21	44	29	<1	26	20
1239661	<2	20	51	29	<1	30	26
1239662	<2	14	48	24	<1	24	21
1239663	<2	15	47	23	<1	25	19
1239664	<2	13	45	20	<1	19	16
1239665	<2	14	50	27	<1	25	20
1239666	<2	17	50	35	<1	26	21
1239667	<2	13	43	28	<1	23	18
1239668	<2	15	49	30	<1	27	20
1239669	<2	14	46	31	<1	31	15
1239670	<2	13	45	26	<1	25	20
1239671	<2	16	52	31	<1	30	20
1239672	<2	16	53	31	<1	33	24
1239673	<2	13	53	28	<1	25	19
1239674	<2	18	46	29	<1	31	23
1239675	<2	14	42	24	<1	26	19
1239676	<2	16	50	29	<1	25	18
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 517/88 Page G3

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239677	<2	16	51	28	1	27	22
1239678	<2	16	50	30	<1	26	22
1239679	<2	17	47	31	<1	25	17
1239680	<2	18	51	32	<1	24	22
1239681	<2	13	42	30	<1	21	16
1239682	<2	16	49	29	<1	23	16
1239683	<2	18	46	29	<1	28	22
1239684	<2	13	51	28	<1	25	16
1239685	<2	12	47	32	<1	24	14
1239686	<2	17	48	53	<1	30	25
1239687	<2	12	43	26	<1	23	19
1239688	<2	14	47	27	<1	28	20
1239689	<2	21	50	34	<1	26	24
1239690	<2	14	47	32	<1	25	18
1239691	<2	15	51	29	<1	25	21
1239692	<2	13	47	23	<1	20	25
1239693	<2	11	43	21	<1	19	17
1239694	<2	14	43	25	<1	22	18
1239695	<2	14	39	25	<1	20	16
1239696	<2	14	46	26	1	21	19
1239697	<2	16	45	24	<1	20	18
1239698	<2	20	47	28	1	24	23
1239699	<2	14	42	25	<1	20	18
1239700	<2	18	47	25	<1	22	23
1239701	<2	22	45	29	<1	29	23
1239702	<2	13	39	27	<1	21	15
1239703	<2	15	40	22	<1	23	19
1239704	<2	12	36	25	<1	20	17
1239705	<2	15	42	28	<1	26	21
1239706	<2	14	37	22	<1	21	19
1239707	<2	13	47	29	<1	27	13
1239708	<2	9	37	22	<1	19	9
1239709	<2	14	48	28	<1	23	15
1239710	<2	11	40	27	<1	17	13
1239711	<2	12	43	26	<1	21	16
1239712	<2	12	48	31	<1	23	9
1239713	<2	12	40	29	<1	23	12
1239714	<2	11	48	31	<1	27	12
1239715	<2	12	46	27	<1	28	13
1239716	<2	11	42	23	<1	20	12
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 517/88 Page G4

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239717	<2	13	46	32	<1	31	14
1239718	<2	11	47	25	<1	24	12
1239719	<2	11	45	30	<1	25	12
1239720	<2	13	43	30	<1	25	13
1239721	<2	12	46	30	1	29	15
1239722	<2	12	45	33	1	27	13
1239723	<2	11	43	26	<1	29	12
1239724	<2	12	45	33	<1	27	10
1239725	<2	11	52	36	<1	23	12
1239726	<2	10	57	36	<1	25	10
1239727	<2	9	44	33	<1	24	11
1239728	<2	10	57	23	<1	25	11
1239729	<2	10	48	25	<1	25	9
1239730	<2	10	54	26	<1	32	16
1239731	<2	10	49	30	<1	26	14
1239732	<2	12	49	33	<1	28	14
1239733	<2	8	43	28	<1	26	11
1239734	<2	12	52	29	<1	35	14
1239735	<2	11	49	23	<1	24	17
1239736	<2	8	36	23	<1	24	9
1239737	<2	11	51	25	<1	29	12
1239738	<2	9	49	27	<1	31	17
1239739	<2	6	37	23	<1	22	11
1239740	<2	9	45	28	<1	24	11
1239741	<2	8	45	26	<1	28	13
1239742	<2	7	42	23	<1	25	13
1239743	<2	9	40	22	<1	25	12
1239744	<2	10	45	24	<1	30	16
1239745	<2	9	39	25	<1	27	13
1239746	<2	9	36	26	<1	21	12
1239747	<2	8	40	27	<1	25	11
1239748	<2	8	36	24	<1	21	12
1239749	<2	8	36	23	<1	20	12
1239750	<2	11	43	25	<1	33	20
1239751	<2	11	37	29	<1	23	17
1239752	<2	10	43	27	<1	27	19
1239753	<2	9	37	23	<1	25	16
1239754	<2	13	39	24	<1	25	18
1239755	<2	11	36	20	<1	29	17
1239756	<2	9	29	36	<1	24	8
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 517/88 Page G5

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239757	<2	9	32	74	<1	20	14
1239758	<2	12	38	29	<1	30	18
1239759	2	11	40	39	<1	26	13
1239760	<2	11	34	35	<1	18	12
1239761	<2	13	40	32	<1	28	17
1239762	<2	13	37	42	<1	25	13
1239763	<2	12	46	29	<1	24	18
1239764	<2	11	42	29	<1	21	17
1239765	<2	11	41	30	<1	21	9
1239766	<2	10	40	31	<1	25	11
1239767	<2	9	37	30	<1	23	10
1239768	<2	10	36	29	<1	23	10
1239769	<2	12	37	27	<1	22	13
1239770	<2	9	39	26	<1	25	14
1239771	<2	13	46	31	<1	28	13
1239772	<2	11	45	32	<1	30	15
1239773	<2	10	43	30	<1	27	12
1239774	<2	10	49	28	<1	24	15
1239775	<2	10	55	34	<1	27	14
1239776	<2	13	50	37	<1	27	15
1239777	<2	10	44	32	<1	24	17
1239778	<2	11	46	32	<1	27	16
1239779	<2	13	55	35	<1	35	18
1239780	<2	12	58	30	<1	36	14
1239781	<2	10	60	30	<1	31	14
1239782	<2	10	55	29	<1	36	12
1239783	<2	10	49	30	<1	52	10
1239784	<2	7	44	27	<1	28	11
1239785	<2	9	45	31	<1	28	11
1239786	<2	10	41	34	<1	33	9
1239787	<2	8	32	30	<1	26	12
1239788	<2	10	44	22	<1	28	14
1239789	<2	9	49	30	<1	28	15
1239790	<2	11	42	28	<1	30	12
1239791	<2	11	43	32	1	28	16
1239792	<2	9	46	27	<1	29	18
1239793	<2	10	44	26	<1	32	17
1239794	<2	11	46	27	<1	25	17
1239795	<2	6	41	21	<1	26	9
1239796	<2	9	48	31	<1	29	17
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

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00057

Analysis code PM1/3SPE Report AC 517/88 Page G6

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239797	<2	10	41	36	1	29	17
1239798	<2	8	40	34	<1	24	15
1239799	<2	9	47	30	<1	32	22
1239800	<2	13	50	29	<1	31	19
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

00058

Analysis code PM1/3SPE Report AC 517/88 Page G7

NATA Certificate Results in ppm

Sample	Zn	Au
1239537	98	0.0075
1239538	86	0.0050
1239539	92	0.0050
1239540	87	0.0045
1239601	94	0.0065
1239602	90	0.0050
1239603	75	0.0050
1239604	77	0.0045
1239605	81	0.0040
1239606	72	0.0065
1239607	93	0.0045
1239608	78	0.0060
1239609	74	0.0055
1239610	76	0.0055
1239611	87	0.0055
1239612	79	0.0055
1239613	74	0.0060
1239614	78	0.0065
1239615	76	0.0050
1239616	75	0.0060
1239617	72	0.0060
1239618	81	0.0060
1239619	73	0.0055
1239620	83	0.0055
1239621	66	0.0055
1239622	78	0.0050
1239623	85	0.0050
1239624	75	0.0055
1239625	93	0.0060
1239626	71	0.0040
1239627	84	0.0040
1239628	94	0.0060
1239629	71	0.0045
1239630	71	0.0060
1239631	67	0.0045
1239632	75	0.0070
1239633	75	0.0050
1239634	76	0.0035
1239635	73	0.0050
1239636	71	0.0120
Detn limit	(2)	(.0005)

amdel

00059

Analysis code PM1/3SPE Report AC 517/88 Page G8

NATA Certificate Results in ppm

Sample	Zn	Au
1239637	80	0.0115
1239638	75	0.0120
1239639	75	0.0090
1239640	65	0.0085
1239641	65	0.0085
1239642	74	0.0085
1239643	73	0.0075
1239644	75	0.0085
1239645	73	0.0080
1239646	63	0.0095
1239647	76	0.0070
1239648	110	0.0065
1239649	83	0.0070
1239650	74	0.0065
1239651	76	0.0080
1239652	79	0.0080
1239653	82	0.0065
1239654	73	0.0080
1239655	68	0.0080
1239656	82	0.0075
1239657	86	0.0100
1239658	72	0.0105
1239659	80	0.0110
1239660	70	0.0100
1239661	90	0.0115
1239662	73	0.0110
1239663	77	0.0095
1239664	77	0.0090
1239665	81	0.0105
1239666	79	0.0110
1239667	66	0.0110
1239668	96	0.0140
1239669	95	0.0120
1239670	100	0.0130
1239671	85	0.0095
1239672	100	0.0085
1239673	79	0.0105
1239674	92	0.0105
1239675	97	0.0100
1239676	85	0.0085
Detn limit	(2)	(.0005)

amdel

00060

Analysis code PM1/3SPE Report AC 517/88 Page G9

NATA Certificate Results in ppm

Sample	Zn	Au
1239677	94	0.0080
1239678	80	0.0090
1239679	80	0.0065
1239680	87	0.0070
1239681	65	0.0050
1239682	79	0.0060
1239683	89	0.0065
1239684	75	0.0060
1239685	86	0.0045
1239686	93	0.0065
1239687	84	0.0050
1239688	83	0.0055
1239689	89	0.0060
1239690	90	0.0055
1239691	84	0.0070
1239692	80	0.0055
1239693	71	0.0055
1239694	72	0.0045
1239695	64	0.0045
1239696	64	0.0055
1239697	73	0.0055
1239698	86	0.0060
1239699	80	0.0040
1239700	86	0.0045
1239701	85	0.0050
1239702	79	0.0045
1239703	89	0.0050
1239704	71	0.0050
1239705	72	0.0050
1239706	75	0.0055
1239707	88	0.0045
1239708	64	0.0050
1239709	81	0.0045
1239710	75	0.0045
1239711	78	0.0040
1239712	85	0.0035
1239713	73	0.0040
1239714	84	0.0045
1239715	82	0.0040
1239716	74	0.0030
Detn limit	(2)	(.0005)

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Analysis code PM1/3SPE Report AC 517/88 Page G10

NATA Certificate Results in ppm

Sample	Zn	Au
1239717	73	0.0090
1239718	73	0.0055
1239719	73	0.0070
1239720	75	0.0055
1239721	78	0.0090
1239722	78	0.0070
1239723	69	0.0060
1239724	77	0.0050
1239725	69	0.0060
1239726	72	0.0045
1239727	66	0.0060
1239728	74	0.0045
1239729	67	0.0055
1239730	80	0.0045
1239731	71	0.0050
1239732	82	0.0070
1239733	65	0.0070
1239734	82	0.0055
1239735	73	0.0065
1239736	49	0.0025
1239737	70	0.0055
1239738	81	0.0040
1239739	58	0.0040
1239740	64	0.0040
1239741	67	0.0030
1239742	65	0.0040
1239743	69	0.0020
1239744	80	0.0010
1239745	72	0.0025
1239746	61	0.0015
1239747	69	0.0025
1239748	62	0.0020
1239749	65	0.0020
1239750	84	0.0020
1239751	68	0.0020
1239752	74	0.0035
1239753	71	0.0065
1239754	80	0.0035
1239755	65	0.0020
1239756	47	0.1800
Detn limit	(2)	(.0005)

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Analysis code PM1/3SPE Report AC 517/88 Page G11

NATA Certificate Results in ppm

Sample	Zn	Au
1239757	52	0.6400
1239758	66	0.0075
1239759	56	0.0185
1239760	65	0.0110
1239761	70	0.0075
1239762	73	0.0350
1239763	73	0.0070
1239764	73	0.0060
1239765	63	0.0035
1239766	55	0.0055
1239767	60	0.0030
1239768	50	0.0030
1239769	54	0.0035
1239770	61	0.0025
1239771	64	0.0030
1239772	64	0.0035
1239773	69	0.0040
1239774	58	0.0035
1239775	62	0.0040
1239776	74	0.0035
1239777	65	0.0030
1239778	70	0.0035
1239779	94	0.0040
1239780	86	0.0055
1239781	83	0.0040
1239782	86	0.0035
1239783	65	0.0040
1239784	62	0.0035
1239785	63	0.0040
1239786	63	0.0030
1239787	64	0.0025
1239788	70	0.0035
1239789	67	0.0040
1239790	70	0.0035
1239791	67	0.0045
1239792	68	0.0035
1239793	72	0.0035
1239794	120	0.0050
1239795	56	0.0035
1239796	71	0.0030
Detn limit	(2)	(.0005)

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00063

Analysis code PM1/3SPE Report AC 517/88 Page G12

NATA Certificate Results in ppm

Sample	Zn	Au
1239797	67	0.0085
1239798	64	0.0060
1239799	84	0.0055
1239800	82	0.0050
Detn limit	(2)	(.0005)

amdel
technology and enterprise

Amdel
31 Flemington Street,
Frewville, S.A. 5063

Telephone: (08) 372 2700

Address all correspondence to:
P.O. Box 114,
Eastwood, S.A. 5063

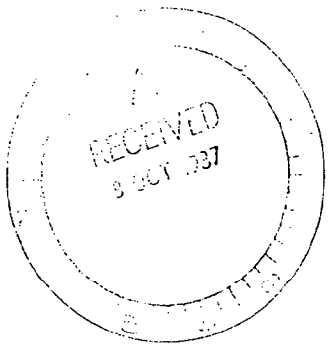
Telex: AA82520
Facsimile: (08) 79 6623

Amdel Limited-Inc in S.A.

NATA CERTIFICATE

5 October 1987

Mr B Murrell
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609



REPORT AC 765/88

YOUR REFERENCE:	DPO 46560
REPORT COMPRISING:	Cover sheet Page G1-G14 Page I1-I14
DATE RECEIVED:	9 September 1987
Approved Signatory:	Trevor Francis
Manager, Geo-Analytical Services	Don Patterson

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc Mr W H Johnston
CRA Exploration Pty Ltd
31 Osmond Tce.
NORWOOD SA 5067

cc Chief Geologist Information Services
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609

The report relates specifically to the sample tested and also the entire batch in so far as the sample is truly representative of the sample source.

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00065

Analysis code PM1/3SPEC Report AC 765/88 Page G1

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449001	<1	31	13	85	0.0080
1449002	<1	27	11	70	0.0030
1449003	2	27	13	64	0.0035
1449004	<1	25	11	77	0.0065
1449005	<1	28	12	83	0.0035
1449006	<1	28	12	84	0.0025
1449007	<1	26	9	69	0.0025
1449008	1	34	11	84	0.0015
1449009	<1	32	11	78	0.0015
1449010	1	39	11	86	0.0040
1449011	2	34	11	84	0.0010
1449012	1	36	16	100	0.0015
1449013	3	39	13	93	0.0005
1449014	2	30	10	92	0.0015
1449015	3	28	13	79	0.0015
1449016	<1	29	11	78	0.0010
1449017	<1	28	13	89	0.0010
1449018	<1	29	13	87	<0.0005
1449019	<1	26	10	76	0.0015
1449020	<1	31	14	91	0.0010
1449021	<1	30	15	90	<0.0005
1449022	<1	30	8	73	0.0010
1449023	1	31	11	87	<0.0005
1449024	<1	25	11	71	0.0005
1449025	3	26	9	74	0.0020
1449026	3	26	9	72	0.0025
1449027	4	24	8	76	<0.0005
1449028	<1	31	10	81	0.0020
1449029	<1	23	12	65	<0.0005
1449030	<1	27	12	78	<0.0005
1449031	<1	28	14	87	<0.0005
1449032	<1	28	8	75	0.0010
1449033	<1	21	14	59	<0.0005
1449034	<1	29	8	75	<0.0005
1449035	<1	26	11	68	<0.0005
1449036	<1	23	12	69	0.0040
1449037	<1	26	11	72	0.0025
1449038	<1	30	12	87	0.0005
1449039	<1	26	15	84	<0.0005
1449040	<1	27	10	74	<0.0005
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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Analysis code PM1/3SPEC Report AC 765/88 Page G2

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449041	4	33	17	86	0.0010
1449042	3	34	17	91	0.0010
1449043	4	23	12	68	0.0010
1449044	3	28	13	79	<0.0005
1449045	2	31	15	90	<0.0005
1449046	<1	28	14	87	0.0010
1449047	1	26	17	81	<0.0005
1449048	<1	28	13	82	0.0010
1449049	<1	28	13	87	<0.0005
1449050	<1	28	9	75	0.0010
1449051	<1	28	11	83	<0.0005
1449052	<1	28	11	79	0.0010
1449053	<1	27	11	77	0.0020
1449054	2	26	11	76	0.0010
1449055	4	27	11	83	0.0010
1449056	1	29	10	83	<0.0005
1449057	4	27	11	80	<0.0005
1449059	<1	25	7	76	0.0030
1449060	<1	26	9	87	<0.0005
1449061	<1	25	8	80	0.0010
1449062	<1	29	12	68	<0.0005
1449063	1	32	15	91	<0.0005
1449064	<1	31	10	87	0.0015
1449065	1	28	11	87	0.0020
1449066	<1	24	10	70	0.0010
1449067	<1	21	9	64	0.0020
1449068	2	23	7	58	0.0010
1449069	<1	22	10	65	0.0025
1449070	1	19	6	58	0.0040
1449071	2	19	8	60	<0.0005
1449072	2	30	16	110	0.0020
1449073	1	27	10	83	0.0010
1449074	2	25	9	75	0.0025
1449075	3	30	11	88	0.0025
1449076	<1	36	14	100	<0.0005
1449077	<1	20	6	61	0.0025
1449078	<1	30	12	97	<0.0005
1449079	<1	35	22	115	0.0005
1449080	2	27	9	81	<0.0005
1449081	<1	30	10	84	0.0020
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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Analysis code PM1/3SPEC Report AC 765/88 Page G3

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449082	<1	33	15	92	<0.0005
1449083	<1	37	11	105	0.0010
1449084	2	31	33	120	0.0005
1449085	<1	27	19	110	0.0010
1449086	<1	32	12	94	<0.0005
1449087	<1	33	15	105	<0.0005
1449088	1	29	15	91	0.0010
1449089	2	29	17	99	<0.0005
1449090	1	30	13	96	0.0015
1449091	<1	32	13	93	<0.0005
1449092	<1	33	16	105	0.0025
1449093	<1	25	9	82	0.0020
1449094	<1	34	29	100	0.0005
1449095	<1	29	11	94	0.0020
1449096	<1	32	12	97	0.0045
1449097	<1	19	15	50	0.0020
1449098	<1	30	25	70	0.0015
1449099	<1	32	15	87	<0.0005
1449100	<1	36	17	88	0.0025
1449101	1	35	17	100	0.0045
1449102	<1	35	21	100	0.0015
1449103	1	32	16	90	0.0010
1449104	<1	26	15	78	0.0025
1449105	<1	27	13	79	0.0015
1449106	<1	32	14	88	0.0085
1449107	<1	33	12	98	0.0025
1449108	3	28	14	74	0.0020
1449109	1	32	16	96	0.0015
1449110	<1	34	13	93	0.0025
1449111	<1	29	11	83	<0.0005
1449112	<1	31	16	91	<0.0005
1449113	1	30	11	90	<0.0005
1449114	1	44	6	100	0.0010
1449115	2	26	8	67	<0.0005
1449116	<1	32	13	91	0.0020
1449117	<1	32	9	90	0.0015
1449118	2	31	13	95	<0.0005
1449119	<1	32	9	88	<0.0005
1449120	1	37	15	95	0.0005
1449121	<1	34	12	96	0.0010
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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Analysis code PM1/3SPEC Report AC 765/88 Page G4

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449122	<1	28	14	92	<0.0005
1449123	3	32	14	99	<0.0005
1449124	1	36	12	92	<0.0005
1449125	<1	28	10	80	0.0010
1449221	1	33	13	79	0.0020
1449222	2	34	14	78	0.0010
1449223	1	34	12	76	0.0015
1449224	<1	14	<2	30	<0.0005
1449225	<1	22	13	57	0.0045
1449226	2	33	16	76	0.0060
1449227	2	29	13	66	0.0055
1449228	1	29	11	63	0.0040
1449229	2	29	17	59	0.0070
1449230	1	29	16	60	0.0030
1449231	2	31	21	64	0.0015
1449232	<1	33	17	79	0.0035
1449233	<1	33	17	76	0.0025
1449234	1	31	17	63	0.0015
1449235	1	30	15	73	0.0015
1449236	2	35	18	81	0.0010
1449237	3	30	15	66	<0.0005
1449238	2	32	18	78	0.0010
1449239	2	35	15	77	0.0010
1449240	2	34	8	79	0.0025
1449241	<1	41	9	92	0.0020
1449242	1	37	9	95	0.0005
1449243	<1	35	7	87	0.0010
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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Analysis code PM1/3SPEC Report AC 765/88 Page G7

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449244	3	34	10	81	0.0060
1449245	3	38	13	88	0.0025
1449246	3	29	6	71	0.0030
1449247	3	41	10	96	0.0030
1449248	3	31	10	89	0.0035
1449249	4	31	11	84	0.0045
1449250	3	29	13	86	0.0080
1449251	2	30	17	82	0.0070
1449252	2	29	10	74	0.0050
1449253	2	32	10	88	0.0040
1449254	2	37	14	86	0.0055
1449255	3	38	14	87	0.0045
1449256	4	36	15	83	0.0025
1449257	3	39	14	91	0.0055
1449258	3	30	12	78	0.0015
1449259	3	30	11	74	<0.0005
1449260	4	44	13	99	0.0020
1449261	3	36	19	94	0.0010
1449262	2	28	12	73	0.0025
1449263	1	29	13	79	0.0025
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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00070

Analysis code PM1/3SPEC Report AC 765/88 Page G8

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449001	<1	<2	18	33	34
1449002	<1	<2	16	29	32
1449003	<1	<2	17	32	30
1449004	<1	<2	15	35	29
1449005	<1	<2	16	32	31
1449006	<1	<2	16	30	31
1449007	<1	<2	13	30	29
1449008	<1	<2	14	39	32
1449009	<1	<2	17	34	29
1449010	<1	<2	17	36	31
1449011	<1	<2	17	39	32
1449012	<1	<2	19	39	33
1449013	<1	<2	20	38	33
1449014	<1	<2	17	36	33
1449015	<1	2	17	36	29
1449016	<1	<2	16	34	27
1449017	<1	<2	18	37	28
1449018	<1	<2	17	36	28
1449019	<1	<2	15	31	28
1449020	<1	<2	18	35	31
1449021	<1	<2	20	37	29
1449022	<1	<2	20	39	33
1449023	<1	<2	19	38	31
1449024	<1	<2	18	30	24
1449025	<1	<2	16	30	29
1449026	<1	<2	16	29	29
1449027	<1	<2	14	25	26
1449028	<1	<2	18	32	30
1449029	<1	<2	15	25	25
1449030	<1	<2	19	30	28
1449031	<1	<2	20	30	28
1449032	<1	<2	15	29	31
1449033	<1	<2	15	24	23
1449034	<1	<2	24	23	28
1449035	<1	<2	21	25	28
1449036	<1	<2	16	23	30
1449037	<1	<2	17	28	30
1449038	<1	2	21	27	31
1449039	<1	<2	17	26	27
1449040	<1	<2	16	27	32
Detn limit	(1)	(2)	(2)	(5)	(1)

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00071

Analysis code PM1/3SPEC Report AC 765/88 Page G9

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449041	<1	<2	26	33	35
1449042	<1	<2	24	35	36
1449043	<1	<2	14	23	25
1449044	<1	<2	15	30	33
1449045	<1	<2	20	31	31
1449046	<1	<2	17	29	30
1449047	<1	<2	18	27	28
1449048	<1	<2	17	29	28
1449049	<1	<2	16	29	28
1449050	<1	<2	16	26	26
1449051	<1	<2	16	28	27
1449052	<1	<2	17	26	28
1449053	<1	<2	16	27	28
1449054	<1	<2	16	26	26
1449055	<1	<2	15	28	26
1449056	<1	2	15	31	28
1449057	<1	<2	16	28	26
1449059	<1	<2	14	25	28
1449060	<1	<2	17	25	27
1449061	<1	<2	14	25	22
1449062	<1	<2	22	26	25
1449063	<1	<2	22	31	31
1449064	<1	<2	15	33	30
1449065	<1	<2	17	26	30
1449066	<1	<2	15	20	27
1449067	<1	<2	15	17	27
1449068	<1	<2	14	20	25
1449069	<1	<2	15	18	27
1449070	<1	<2	12	16	24
1449071	<1	<2	13	17	24
1449072	<1	<2	21	29	30
1449073	<1	<2	17	23	27
1449074	<1	<2	16	24	27
1449075	<1	<2	18	28	31
1449076	<1	<2	22	35	32
1449077	<1	<2	12	18	23
1449078	<1	<2	19	25	31
1449079	<1	<2	22	25	33
1449080	<1	<2	16	24	27
1449081	<1	<2	16	23	27
Detn limit	(1)	(2)	(2)	(5)	(1)

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Analysis code PM1/3SPEC Report AC 765/88 Page G10

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449082	<1	<2	18	27	31
1449083	<1	<2	20	30	30
1449084	<1	<2	24	25	37
1449085	<1	<2	19	30	36
1449086	<1	<2	22	39	37
1449087	<1	<2	22	41	32
1449088	<1	<2	19	29	32
1449089	<1	<2	20	29	33
1449090	<1	<2	22	31	33
1449091	<1	<2	18	32	32
1449092	<1	<2	20	35	30
1449093	<1	<2	16	30	26
1449094	<1	<2	23	33	32
1449095	<1	<2	20	26	28
1449096	<1	<2	19	31	30
1449097	<1	<2	14	16	24
1449098	<1	<2	23	22	30
1449099	<1	3	20	20	32
1449100	<1	<2	11	25	30
1449101	<1	<2	23	21	35
1449102	<1	<2	25	23	32
1449103	<1	<2	24	25	28
1449104	<1	<2	21	22	25
1449105	<1	<2	18	22	28
1449106	<1	<2	21	25	30
1449107	<1	<2	19	23	30
1449108	<1	<2	18	22	29
1449109	<1	<2	20	27	29
1449110	<1	<2	20	25	32
1449111	<1	<2	19	21	30
1449112	<1	<2	21	24	30
1449113	<1	<2	18	24	30
1449114	<1	<2	18	17	22
1449115	<1	<2	14	20	26
1449116	<1	<2	17	25	29
1449117	<1	<2	17	27	32
1449118	<1	<2	16	25	28
1449119	<1	<2	17	27	25
1449120	<1	<2	20	28	27
1449121	<1	<2	18	24	27
Detn limit	(1)	(2)	(2)	(5)	(1)

amdel

Analysis code PM1/3SPEC Report AC 765/88 Page G11

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449122	<1	<2	17	24	28
1449123	<1	<2	20	24	26
1449124	<1	<2	22	24	28
1449125	<1	<2	17	24	28
1449221	<1	<2	14	19	29
1449222	<1	<2	15	20	26
1449223	<1	<2	14	19	24
1449224	<1	<2	5	7	8
1449225	<1	<2	9	14	15
1449226	<1	<2	17	25	27
1449227	<1	<2	15	23	24
1449228	<1	<2	16	20	23
1449229	<1	<2	18	25	29
1449230	<1	<2	20	27	25
1449231	<1	<2	22	26	31
1449232	<1	<2	20	28	30
1449233	<1	<2	21	27	32
1449234	<1	<2	19	27	29
1449235	<1	<2	18	24	28
1449236	<1	<2	25	28	31
1449237	<1	<2	19	23	25
1449238	<1	<2	18	29	31
1449239	<1	<2	20	27	29
1449240	<1	<2	15	24	26
1449241	<1	<2	16	28	31
1449242	<1	<2	15	26	28
1449243	<1	3	14	24	24
Detn limit	(1)	(2)	(2)	(5)	(1)

amdel

Analysis code PM1/3SPEC Report AC 765/88 Page G14

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449244	<1	<2	15	24	23
1449245	<1	<2	17	28	26
1449246	<1	<2	13	23	19
1449247	<1	<2	18	23	29
1449248	<1	<2	17	22	24
1449249	<1	<2	16	22	26
1449250	<1	<2	16	23	22
1449251	<1	<2	16	21	25
1449252	<1	<2	15	19	28
1449253	<1	<2	16	21	33
1449254	<1	<2	20	26	35
1449255	<1	<2	21	22	33
1449256	<1	<2	22	22	30
1449257	<1	<2	24	22	35
1449258	<1	<2	17	23	29
1449259	<1	<2	15	22	24
1449260	<1	3	31	25	38
1449261	<1	<2	21	26	28
1449262	<1	<2	16	24	20
1449263	<1	<2	18	27	23
Detn limit	(1)	(2)	(2)	(5)	(1)

Analysis code ICP2 Report AC 765/88 Page 11

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449001	5	250	7.40%	1050	1050	25	<5	5
1449002	5	180	4.76%	800	550	15	<5	5
1449003	5	150	6.70%	960	450	20	<5	<5
1449004	5	110	6.40%	780	320	25	<5	<5
1449005	5	260	6.20%	920	850	25	<5	5
1449006	5	220	5.55%	920	850	20	<5	<5
1449007	5	180	5.30%	600	450	25	<5	5
1449008	5	190	7.45%	800	500	30	<5	<5
1449009	5	240	6.10%	1000	650	20	<5	<5
1449010	<5	180	6.95%	740	500	25	<5	<5
1449011	<5	210	7.20%	920	500	25	<5	<5
1449012	<5	240	7.60%	1250	1050	25	<5	<5
1449013	5	270	7.70%	1150	750	25	<5	<5
1449014	5	160	6.40%	860	550	25	<5	5
1449015	5	250	7.00%	960	550	20	<5	<5
1449016	5	220	6.60%	800	450	25	<5	<5
1449017	5	210	6.95%	1250	600	20	<5	<5
1449018	5	210	7.00%	1100	500	20	<5	<5
1449019	10	210	6.10%	660	500	25	<5	<5
1449020	5	220	6.70%	1100	850	20	<5	<5
1449021	5	210	6.95%	1250	650	30	<5	<5
1449022	10	200	7.30%	800	450	25	<5	<5
1449023	5	180	7.50%	1050	550	25	<5	<5
1449024	<5	110	4.44%	900	320	15	<5	<5
1449025	5	230	5.10%	820	550	20	<5	5
1449026	5	140	3.72%	620	360	20	<5	10
1449027	5	200	5.50%	880	500	20	<5	<5
1449028	5	140	7.05%	1000	500	20	<5	<5
1449029	10	210	5.70%	1050	600	25	<5	<5
1449030	5	180	7.25%	1250	700	25	<5	<5
1449031	5	220	6.95%	1300	650	25	<5	<5
1449032	10	340	6.35%	620	550	25	<5	5
1449033	10	180	5.00%	800	550	15	<5	<5
1449034	15	230	4.84%	620	500	15	<5	5
1449035	10	240	7.60%	1600	700	25	<5	<5
1449036	10	270	5.45%	900	950	25	<5	5
1449037	10	160	6.75%	720	320	30	<5	5
1449038	10	210	7.05%	1300	600	25	<5	<5
1449039	10	240	6.15%	1000	850	30	<5	5
1449040	10	180	7.75%	900	550	30	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

Analysis code ICP2 Report AC 765/88 Page 12

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449041	15	230	8.85%	1500	700	35	<5	5
1449042	15	240	9.95%	1450	1000	40	<5	5
1449043	10	210	5.60%	660	700	25	<5	5
1449044	10	150	8.15%	820	550	30	<5	<5
1449045	10	220	7.10%	1200	700	30	<5	<5
1449046	10	270	6.85%	920	750	30	<5	5
1449047	10	210	7.20%	1000	650	30	<5	<5
1449048	10	220	7.85%	920	600	35	<5	5
1449049	15	240	8.65%	940	800	40	<5	5
1449050	15	250	6.45%	700	600	40	<5	10
1449051	10	260	7.40%	820	500	35	<5	5
1449052	15	240	6.40%	880	650	30	<5	10
1449053	15	210	6.40%	780	500	30	<5	5
1449054	15	190	5.95%	720	450	30	<5	5
1449055	10	180	5.50%	640	450	30	<5	5
1449056	10	180	7.25%	660	400	35	<5	5
1449057	10	210	5.65%	700	500	30	<5	5
1449059	10	170	4.72%	620	600	20	<5	5
1449060	10	190	4.92%	700	650	20	<5	<5
1449061	10	160	4.82%	440	450	20	<5	<5
1449062	10	170	5.20%	760	340	20	<5	<5
1449063	10	200	6.55%	1050	500	20	<5	<5
1449064	15	140	7.15%	520	340	25	<5	<5
1449065	15	160	5.25%	660	600	25	<5	5
1449066	10	150	4.28%	660	500	15	<5	<5
1449067	10	190	3.64%	460	400	15	<5	<5
1449068	<5	180	4.18%	600	450	20	55	<5
1449069	<5	160	3.78%	680	550	15	50	<5
1449070	<5	170	3.20%	440	450	20	45	<5
1449071	<5	140	3.46%	500	500	20	45	<5
1449072	<5	220	5.90%	1050	750	30	75	<5
1449073	<5	160	4.62%	760	600	25	60	<5
1449074	<5	160	4.50%	560	500	25	55	<5
1449075	<5	160	5.65%	760	400	30	65	<5
1449076	<5	170	6.55%	1000	550	30	80	<5
1449077	<5	220	3.14%	410	500	20	40	<5
1449078	<5	200	5.40%	900	650	30	65	<5
1449079	<5	130	3.98%	700	550	20	55	<5
1449080	<5	150	4.48%	660	650	25	55	<5
1449081	<5	140	4.44%	540	550	20	55	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

00077

Analysis code ICP2 Report AC 765/88 Page I3

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449082	<5	90	5.75%	720	300	25	65	<5
1449083	<5	120	5.15%	800	500	25	65	<5
1449084	<5	190	6.10%	1350	600	25	80	<5
1449085	<5	210	5.65%	1100	700	25	75	<5
1449086	<5	180	5.95%	1000	550	30	75	<5
1449087	<5	230	6.20%	1200	700	30	75	<5
1449088	<5	200	5.05%	1200	650	20	65	<5
1449089	<5	180	5.85%	1300	500	25	80	<5
1449090	<5	180	5.75%	1000	500	30	75	<5
1449091	<5	160	5.95%	760	320	30	75	<5
1449092	<5	200	5.70%	900	600	30	70	<5
1449093	<5	220	4.58%	660	700	30	60	<5
1449094	<5	200	6.40%	1200	500	30	80	<5
1449095	<5	170	4.64%	660	650	25	60	<5
1449096	<5	210	5.70%	800	500	25	70	<5
1449097	<5	170	2.86%	540	320	10	40	<5
1449098	<5	120	5.10%	840	450	20	75	<5
1449099	<5	120	4.56%	920	600	20	55	<5
1449100	<5	180	4.78%	760	400	15	65	<5
1449101	<5	150	5.00%	1250	1600	20	60	<5
1449102	<5	190	5.50%	1250	650	20	65	<5
1449103	<5	170	5.50%	940	280	20	70	<5
1449104	<5	160	4.44%	640	400	20	55	<5
1449105	<5	130	4.02%	620	360	20	50	<5
1449106	<5	150	4.50%	540	500	20	55	<5
1449107	<5	120	4.44%	520	550	20	50	<5
1449108	<5	130	4.04%	620	400	20	55	<5
1449109	<5	200	5.15%	580	450	30	65	<5
1449110	<5	140	4.80%	560	360	30	60	<5
1449111	<5	150	4.10%	740	600	20	60	<5
1449112	<5	150	4.78%	860	650	30	65	<5
1449113	<5	150	4.40%	740	900	25	60	<5
1449114	<5	130	3.18%	620	700	20	40	<5
1449115	5	140	3.62%	500	650	20	45	<5
1449116	10	150	4.52%	620	550	20	60	<5
1449117	<5	170	4.94%	660	700	25	70	<5
1449118	<5	160	4.76%	700	750	20	65	<5
1449119	<5	140	4.54%	720	600	20	65	<5
1449120	<5	210	5.55%	1000	650	20	75	<5
1449121	<5	170	5.25%	880	700	20	70	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 765/88 Page 14

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449122	<5	160	4.62%	800	650	20	70	<5
1449123	<5	160	4.96%	880	700	20	70	<5
1449124	<5	150	4.80%	900	600	25	70	<5
1449125	<5	140	4.16%	680	550	25	65	<5
1449221	5	140	3.54%	840	450	15	<5	5
1449222	5	150	3.58%	760	380	20	<5	5
1449223	10	150	3.88%	1000	500	20	<5	5
1449224	5	50	1.20%	270	240	10	<5	<5
1449225	5	120	2.40%	600	340	15	<5	<5
1449226	5	170	4.34%	800	340	20	<5	5
1449227	5	170	3.74%	620	450	20	<5	5
1449228	10	200	5.00%	880	500	10	65	10
1449229	10	210	6.25%	1000	360	20	95	10
1449230	10	200	7.35%	1100	380	15	95	<5
1449231	10	210	6.70%	1250	400	15	100	5
1449232	10	230	7.40%	1050	340	20	100	<5
1449233	15	210	7.15%	1100	450	20	100	5
1449234	10	150	6.75%	780	300	15	85	<5
1449235	10	190	5.80%	840	400	15	85	10
1449236	10	160	6.35%	1250	400	15	90	<5
1449237	5	150	5.45%	880	320	10	75	5
1449238	15	190	7.20%	880	340	25	100	5
1449239	10	180	6.05%	960	340	15	90	<5
1449240	10	200	5.40%	680	500	20	80	10
1449241	15	160	5.95%	900	450	15	80	5
1449242	10	160	4.98%	680	600	20	80	10
1449243	10	150	5.25%	600	700	10	75	10
1449244	10	160	5.20%	700	500	15	80	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 765/88 Page 17

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449245	10	180	6.15%	800	280	25	85	5
1449246	5	170	4.40%	560	500	15	60	15
1449247	10	210	4.48%	980	800	15	70	15
1449248	5	210	4.46%	940	750	15	70	15
1449249	5	210	4.48%	1000	750	20	70	25
1449250	10	210	4.60%	940	600	25	80	20
1449251	5	230	4.40%	1600	550	20	70	20
1449252	5	180	3.60%	920	450	15	55	20
1449253	5	190	4.06%	860	550	15	70	10
1449254	10	210	6.25%	1050	380	25	90	5
1449255	10	200	5.65%	1200	380	20	80	5
1449256	10	170	5.80%	1450	500	15	90	<5
1449257	10	250	6.15%	1800	550	15	85	<5
1449258	10	170	4.76%	660	650	20	75	15
1449259	10	150	5.00%	660	600	25	80	15
1449260	10	180	5.95%	1150	600	20	95	<5
1449261	5	180	6.40%	920	360	20	95	<5
1449262	10	220	6.55%	680	320	20	90	5
1449263	5	150	1.98%	360	220	5	50	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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00080

Analysis code ICP2 Report AC 765/88 Page 18

NATA Certificate Results in ppm

Sample	Sn	W
1449001	15	10
1449002	10	15
1449003	15	10
1449004	20	5
1449005	15	10
1449006	15	15
1449007	15	10
1449008	20	10
1449009	15	10
1449010	15	10
1449011	20	15
1449012	20	10
1449013	20	10
1449014	15	20
1449015	15	10
1449016	20	10
1449017	15	10
1449018	15	15
1449019	15	10
1449020	20	10
1449021	20	10
1449022	15	10
1449023	20	10
1449024	10	5
1449025	15	15
1449026	10	20
1449027	15	10
1449028	15	10
1449029	15	20
1449030	15	15
1449031	15	15
1449032	20	15
1449033	10	20
1449034	10	20
1449035	15	15
1449036	15	20
1449037	20	20
1449038	20	15
1449039	20	20
1449040	20	15
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 765/88 Page 19

NATA Certificate Results in ppm

Sample	Sn	W
1449041	25	15
1449042	30	15
1449043	15	20
1449044	20	15
1449045	20	15
1449046	20	15
1449047	20	15
1449048	25	15
1449049	25	15
1449050	20	20
1449051	25	15
1449052	20	15
1449053	20	20
1449054	20	15
1449055	15	20
1449056	20	20
1449057	20	20
1449059	15	15
1449060	20	15
1449061	15	15
1449062	15	20
1449063	20	15
1449064	20	15
1449065	15	20
1449066	10	15
1449067	10	20
1449068	<5	70
1449069	<5	65
1449070	<5	60
1449071	<5	60
1449072	5	95
1449073	<5	80
1449074	<5	75
1449075	5	95
1449076	5	110
1449077	<5	55
1449078	5	90
1449079	<5	75
1449080	<5	75
1449081	<5	75
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 765/88 Page 110

NATA Certificate Results in ppm

Sample	Sn	W
1449082	5	95
1449083	<5	90
1449084	5	100
1449085	5	95
1449086	5	100
1449087	5	100
1449088	<5	85
1449089	<5	95
1449090	5	95
1449091	5	95
1449092	5	95
1449093	5	80
1449094	5	100
1449095	<5	80
1449096	5	95
1449097	<5	50
1449098	<5	90
1449099	<5	80
1449100	<5	85
1449101	<5	90
1449102	<5	95
1449103	<5	95
1449104	<5	80
1449105	<5	70
1449106	<5	80
1449107	<5	80
1449108	<5	75
1449109	5	90
1449110	<5	85
1449111	<5	75
1449112	<5	85
1449113	<5	80
1449114	<5	60
1449115	<5	65
1449116	<5	80
1449117	<5	90
1449118	<5	80
1449119	<5	80
1449120	<5	95
1449121	<5	90
Detn limit	(5)	(5)

00083

amdel

Analysis code ICP2 Report AC 765/88 Page 111

NATA Certificate Results in ppm

Sample	Sn	W
1449122	<5	80
1449123	<5	85
1449124	<5	85
1449125	<5	80
1449221	10	15
1449222	10	15
1449223	10	20
1449224	<5	10
1449225	5	15
1449226	10	15
1449227	10	15
1449228	15	15
1449229	20	20
1449230	20	20
1449231	20	25
1449232	25	20
1449233	25	25
1449234	20	15
1449235	15	20
1449236	20	20
1449237	15	20
1449238	25	25
1449239	20	20
1449240	20	25
1449241	20	20
1449242	20	25
1449243	15	20
1449244	15	20
Detn limit	(5)	(5)

amdel

00084

Analysis code ICP2 Report AC 764/88 Page 111

NATA Certificate Results in ppm

Sample	Sn	W
1449245	20	20
1449246	15	20
1449247	15	20
1449248	15	20
1449249	20	25
1449250	20	25
1449251	20	20
1449252	15	15
1449253	15	20
1449254	20	25
1449255	20	20
1449256	15	25
1449257	15	15
1449258	20	20
1449259	20	25
1449260	20	25
1449261	20	20
1449262	25	20
1449263	10	5
Detn limit	(5)	(5)

CRA EXPLORATION PTY. LIMITED

FOURTH QUARTERLY REPORT FOR

HOPE BANK EL 1376, SOUTH AUSTRALIA,

FOR THE PERIOD ENDING 5TH JANUARY, 1988

AUTHORS: D.C. PALMER

DATE: 22ND DECEMBER, 1987

COPIES TO: CIS CANBERRA
SADME

SUBMITTED BY:

ACCEPTED BY:

CONTENTS

LIST OF PLANS

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES (cont.)

LIST OF APPENDICES

1. SUMMARY

Final assay data values were received for stream sediment samples from four hundred and fifty two catchments throughout Hope Bank EL 1376.

Catchments anomalous in Au (97th Percentile) and Pb, Zn, Cu (95th Percentile) were delineated.

Anomalous Au values were returned from catchments draining the Elatina Sub-group, however, the majority were of low magnitude and aren't supported by multi-element signatures.

Weak Zn/Au anomalism is recorded from three catchments (1239668-1239670) draining the Farina Sub-Group, south of Waddington Bluff.

Weak Cu/Pb/Zn anomalism is also recorded from catchments (1449079, 1449084-1449086) draining an anticlinal closure of Apilla Tillite east of Hantken Hill.

Follow up soil sampling of these two multi-element anomalous catchments is recommended.

2. RECOMMENDATIONS

The following actions should be undertaken during the next phase of field work on EL 1376.

i. Soil sampling at 100 m spacing of the subdividing and marginal spurs of catchments east of Hantken Hill (Cu Pb Zn anomalism) and similarly catchments south of Waddington Bluff which recorded Au/Zn anomalism.

ii. Rock chip samples in these two regions should also be taken.

iii. Based on results from recommendations (i) and (ii), further detailed soil sampling on a grid pattern 25 m x 125 m, including catchment 1239595 (as previously recommended, Murrell/Sugden, 1987) should be undertaken to further delineate targets for costeaning.

3. INTRODUCTION

Hope Bank EL 1376 was granted to CRA Exploration Pty. Limited on the 6th January, 1987 for a period of one year.

The stream sediment geochemistry survey conducted within the licence area was designed to test all subcrop, regardless of stratigraphy and to use multi-element signatures to rate areas of anomalous gold in an attempt to locate a (stratabound Au) Telfer-style gold resource.

This report details the work carried out during the fourth quarter for EL 1376.

4. LOCATION

Hope Bank EL 1376 is located approximately 20 km north west of Yunta, on the Adelaide-Broken Hill Highway (plan no. SAa 4244). The licence covers an area of approximately 1303 sq km encompassing parts of East Wydown, McCoys Well, Melton, Minburra, Teetulpa and Wabricoola stations.

5. GEOLOGY

The major rock units found within the licence are the Adelaidean sediments of the Yudnamutana, Farina & Elatina Subgroups and Wilpena Group. Thin Quaternary sands, gravels and alluvium cover much of the above stratigraphy.

Table 1 describes the Adelaidean stratigraphy.

Hope Bank EL 1376 covers the eastern and western closures of the Waukaringa Syncline and a parallel antiform incorporating the same sequence to the south.

Mineralisation at Waukaringa and Ajax mines (which lie in the northern portion of the Waukaringa Syncline not held by CRAE) is associated with quartz and arsenical pyrite filling dilation zones in layer-parallel fault planes within the Farina Sub Group.

Material on dumps at the Waukaringa Mine contains superfine sulphide mineralisation in sandstones and siltstones, suggesting that the mineralisation in the quartz lodes occurs nearby to primary mineralisation in the sediments (Murrell, B. and Sugden, S., 1987).

Table 1

ADELAIDEAN STRATIGRAPHY - HOPE BANK EL 1376

Group	Unit	Lithology
Wilpena Gp	Pound Sst.	Quartzite feldspathic sandstone & siltstone
	Wonoka Fmn.	Calcareous siltstone & shale minor limestone & quartzites
	Ulupa siltstone	Siltstone (Brachina Equliv)
Elatina Sub Gp - Upper Glacial Gp		Diamictite & fluvials
Farina Sub Gp (intraglacials)	Undifferentiated	Shales, siltstone, carbonatic siltstones, minor carbonate units
	Tarcowie siltstone	Siltstone & sandstone
	Willochra Fmn.	Siltstone, shale, minor gritty sandstone & limestone
	Tapley Hill Fmn.	Siltstone, limestone, minor breccia bands, slump conglomerates & sandstone
Yunnamunta Sub Gp	Wilyerpa Qtzite	Sandstone, siltstone and minor tillites
	Apilla Tillite	Boulder tillite siltstone & sandstone
Callana Gp	Undifferentiated	

6. PREVIOUS WORK

Stream sediment samples from four hundred and fifty two sites were collected from sites representing a primary catchment in the size range 0.5 to 5.0 km^2 (plan SAa 4741).

The suspended clay fraction (-10 mm) from each of the stream sediment samples was analysed for the presence of gold to a detection limit of 0.0005 ppm whilst eight other elements were determined by AAS and a further ten by ICP. In addition, the first 181 samples were analysed for platinum and palladium by lead fire assay (DPO 46556).

A further 58 soil samples were collected at 100 m spacing in the axial zone of the Waukaringa Syncline crossing the mine-host stratigraphic sequence.

A multi-element signature with anomalous gold values from catchment 1239595, was followed up by collecting 37 soil samples at 100 m spacings up the spurs bounding the catchment (plan SAa 4742).

A detailed discussion of sampling procedures and concepts is given in the third quarterly report for EL 1376 (Murrell, B. and Sugden, S., 1987)

7. WORK CARRIED OUT

Work carried out during the fourth quarter comprised compilation of Pb, Zn, Cu and Au results above the threshhold positioned at the 95th Percentile of background population for each element.

Au revealed a distinct change in slope above the 95th Percentile which was interpreted to represent the boundary between background and anomalous samples. Table 2 lists anomalous Au, Cu, Pb, Zn and As values for each data set.

Due to clear differences in base line shifts (esp. Au) in the laboratory runs, each data set was examined individually, on a DPO basis.

Only assay values pertaining to the -10 um suspended clay fraction from drainage samples were evaluated. Furthermore, to reduce skewness in the data set high element values from the Ajax Mine (samples 1239756, 1239757, 1239759, 1239762) were not included in the 46557 DPO data set.

Cumulative frequency graphs for Au, Pb, Zn and Cu are displayed on figures 1-12.

TABLE 2

SUMMARY OF ANOMALOUS ELEMENT and VALUES BASED ON DPO

ELEMENT	DPO NO.	CURVE TYPE	ANOMALOUS VALUE >95TH PERCENTILE	NO. OF SAMPLES
Zn	46557	Normal Distribution	95 ppm	8
	46556	Normal Distribution	110 ppm	9
	46560	Normal Distribution	106 ppm	4
Cu	46556	+ve skewed	37 ppm (4)	3
	46557	+ve skewed	35.5 ppm	4
	46560	Normal Distribution	35 ppm	6
Pb	46556	+ve skewed	22 ppm	6
	46557	-ve skewed	24 ppm	8
	46560	+ve skewed	21 ppm	5
As	46556	4 populations	N.A.	-
	46557	Poor Distribution	5 ppm	1
	46560	4 populations	N.A.	-
Au	46556	Log normal Distribution	5.1 ppb (1)	7
	46557	Log normal Distribution	12.0 ppb (2)	5
	46560	Log normal Distribution	4.8 ppb (3)	3

N.B. (1) 96th Percentile Level
(2) 97th Percentile Level
(3) 97th Percentile Level
(4) 99th Percentile Level

8. RESULTS

A compilation of Au, Pb, Zn, Cu and As anomalism from each data set showing areas of elevated metal values appears on plan SAa 4853.

A summary of interpreted results is as follows:-

i. Catchments draining the Upper glacial unit (mapped as between Wabricoola Homestead and north of Waddington Bluff (Elatina Subgroup) reported anomalous gold values, the majority which are not supported by other base metals.

This gold is probably derived from fluvial concentrations, in reworked zones within the diamictite unit.

ii. Zn/Au anomalism is recorded from three catchments (1239668-1239670) draining the Farina Sub-Group Interglacials to the south of Waddington Bluff.

iii. Cu/Pb/Zn anomalism is recorded from catchments (1449079, 1449084-1449086) draining an area incorporating an anticlinal closure of Apilla Tillite , east of Hantken Hill.

Isolated Pb and Cu anomalism is also recorded from catchments adjacent to or draining from this stratigraphic unit throughout Hope Bank EL 1376.

iv. Isolated Zn anomalies exist from catchments draining Farina Subgroup glacials (Tapley Hill Formation Equivalents) in the north-eastern portion of EL 1376. This is the same sequence that appears to be the source of a multi-element signature at catchment 1239595, north of Folly Dam.

D.C. PALMER

DCP/pq

EXPENDITURE

Expenditure for the period ended 31st December, 1987 the nearest accounting period amounted to $4 516.00, as listed below.

	$
Payroll	-5 941
Supplies	572
Vehicle	799
Travel	2 596
Rent	242
Contractors	164
Laboratory	5 493
Sundry	69
Overheads	522
Total	$4 516

REFERENCES-

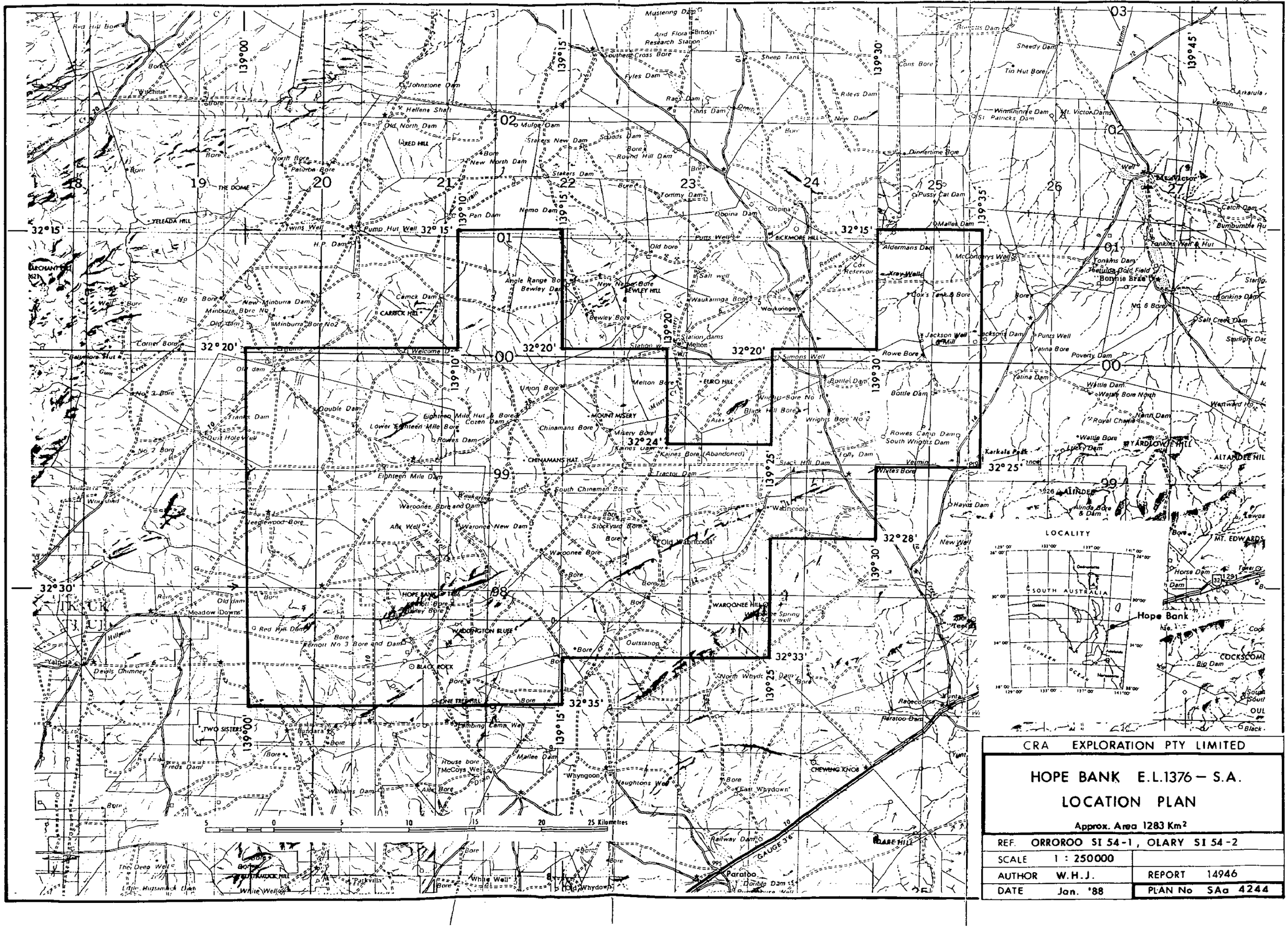
Murrell, B. & Sugden, S.P. Third Quarterly Report For Hope Bank EL 1376, South Australia, For The Period Ending 5th October, 1987. (CRAE Report No. 14762)

LOCATION

Orroroo SI 54-01
Olary SI 54-02

KEYWORDS

Gold, Geochemistry - Stream Sediment, Clays, Soils, Waukaringa



00097

CRA EXPLORATION PTY LIMITED

HOPE BANK E.L.1376 – S.A.
LOCATION PLAN

Approx. Area 1283 Km²

REF. ORROROO SI 54-1, OLARY SI 54-2

SCALE	1 : 250000		
AUTHOR	W.H.J.	REPORT	14946
DATE	Jan. '88	PLAN No	SAa 4244

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES
CUMULATIVE FREQUENCY GRAPH
Au

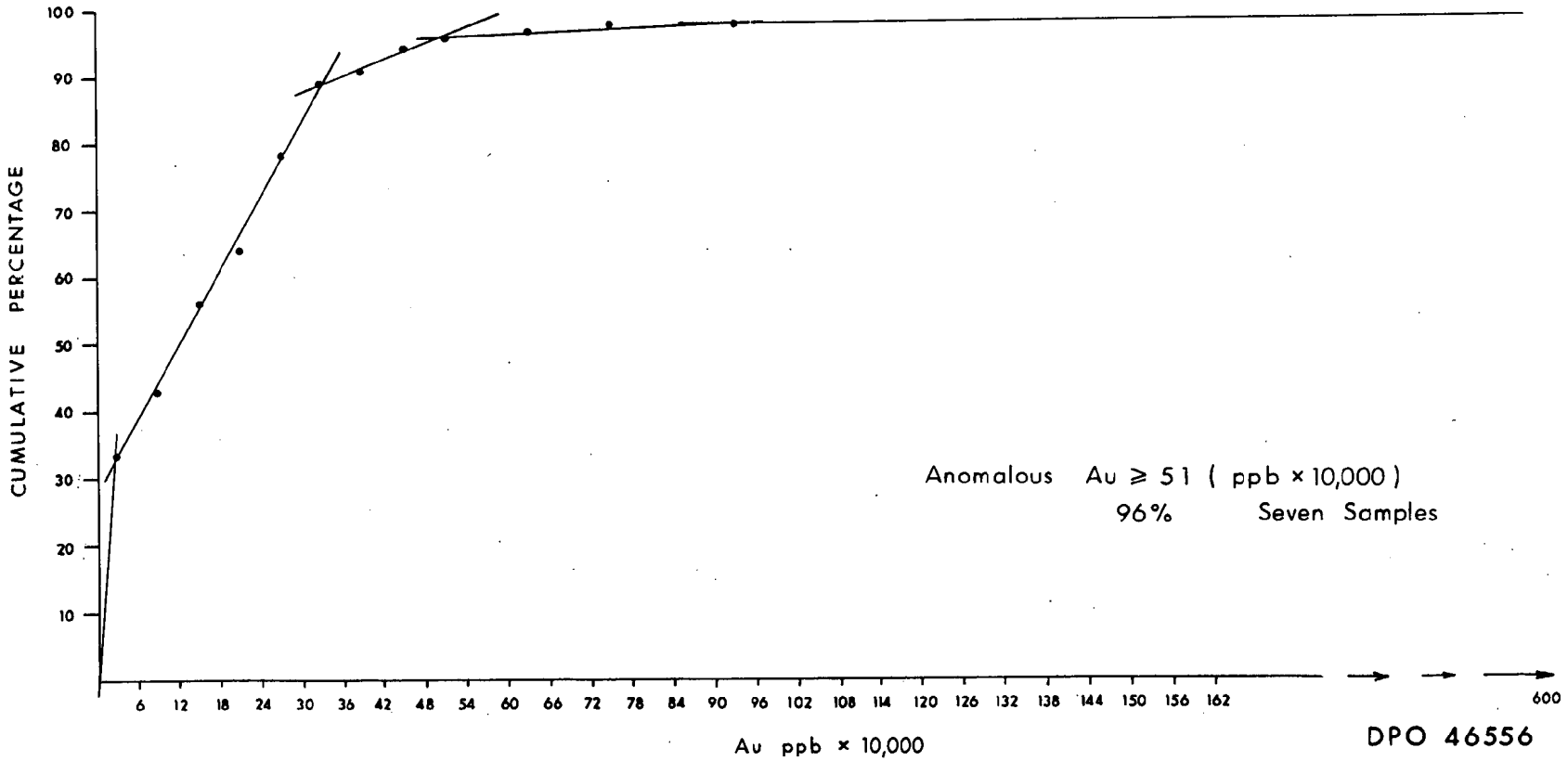
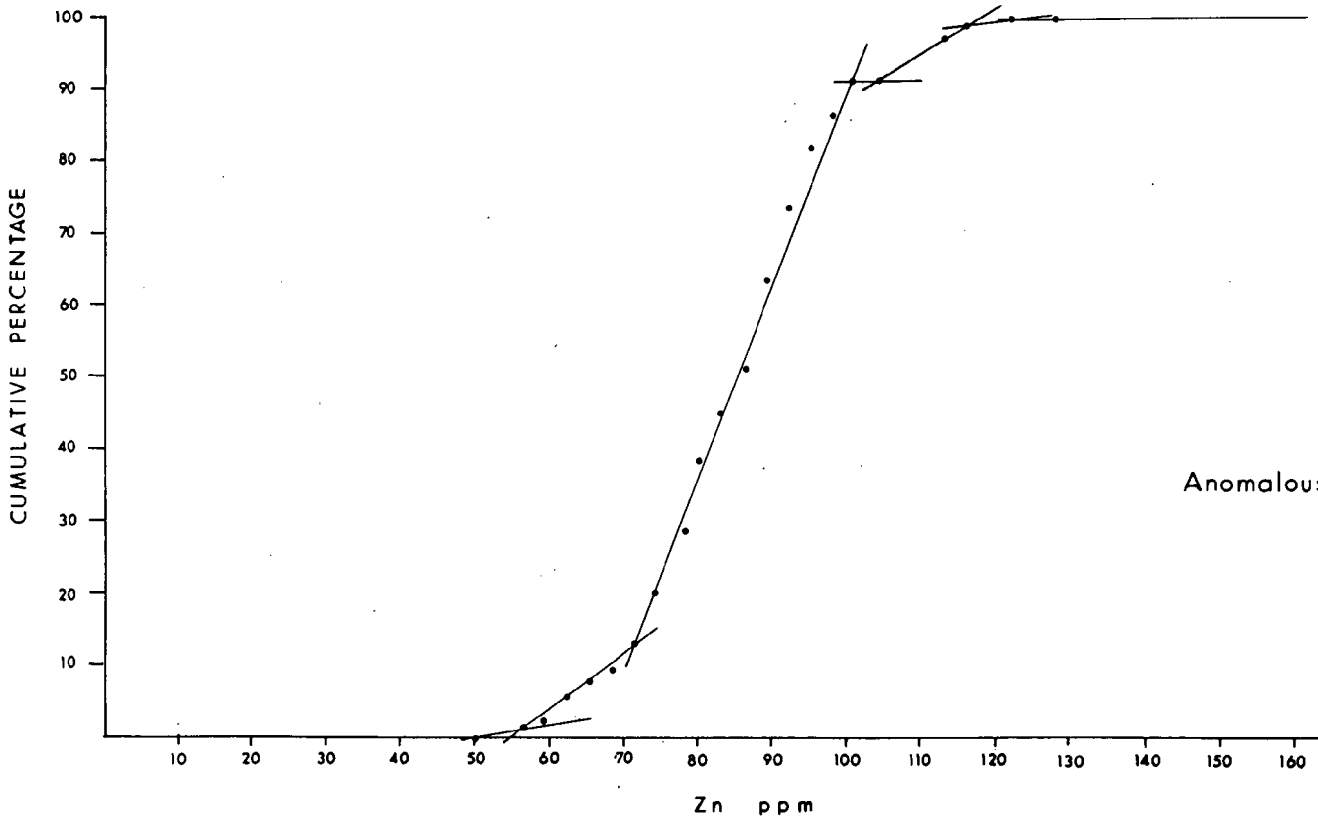


Fig. 1

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

Zn



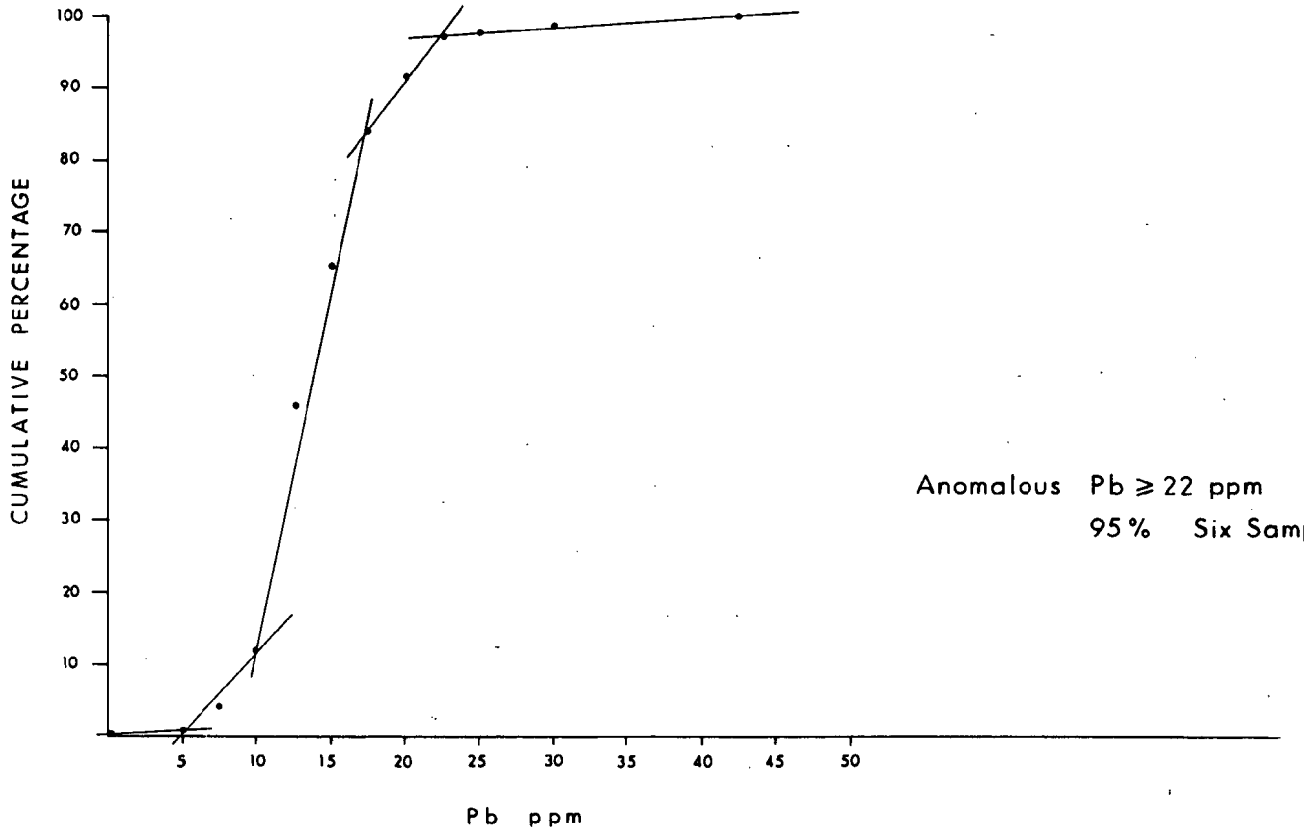
Anomalous Zn 110 ppm
95 % Nine Samples

DPO 46556

Fig. 2

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

Pb



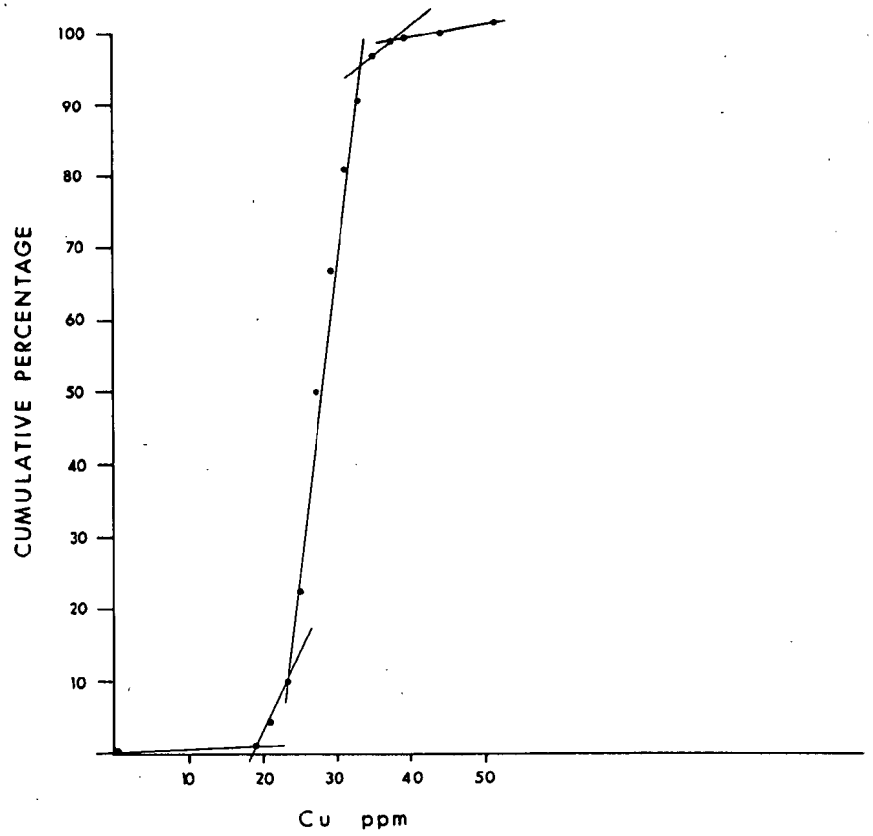
Anomalous Pb ≥ 22 ppm
95% Six Samples

DPO 46556

Fig. 3

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

Cu



Anomalous Cu ≥ 37 ppm
99% Three Samples

DPO 46556

Fig. 4

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

$\underline{\underline{Au\,B}}$ = (Au ppb × 10,000

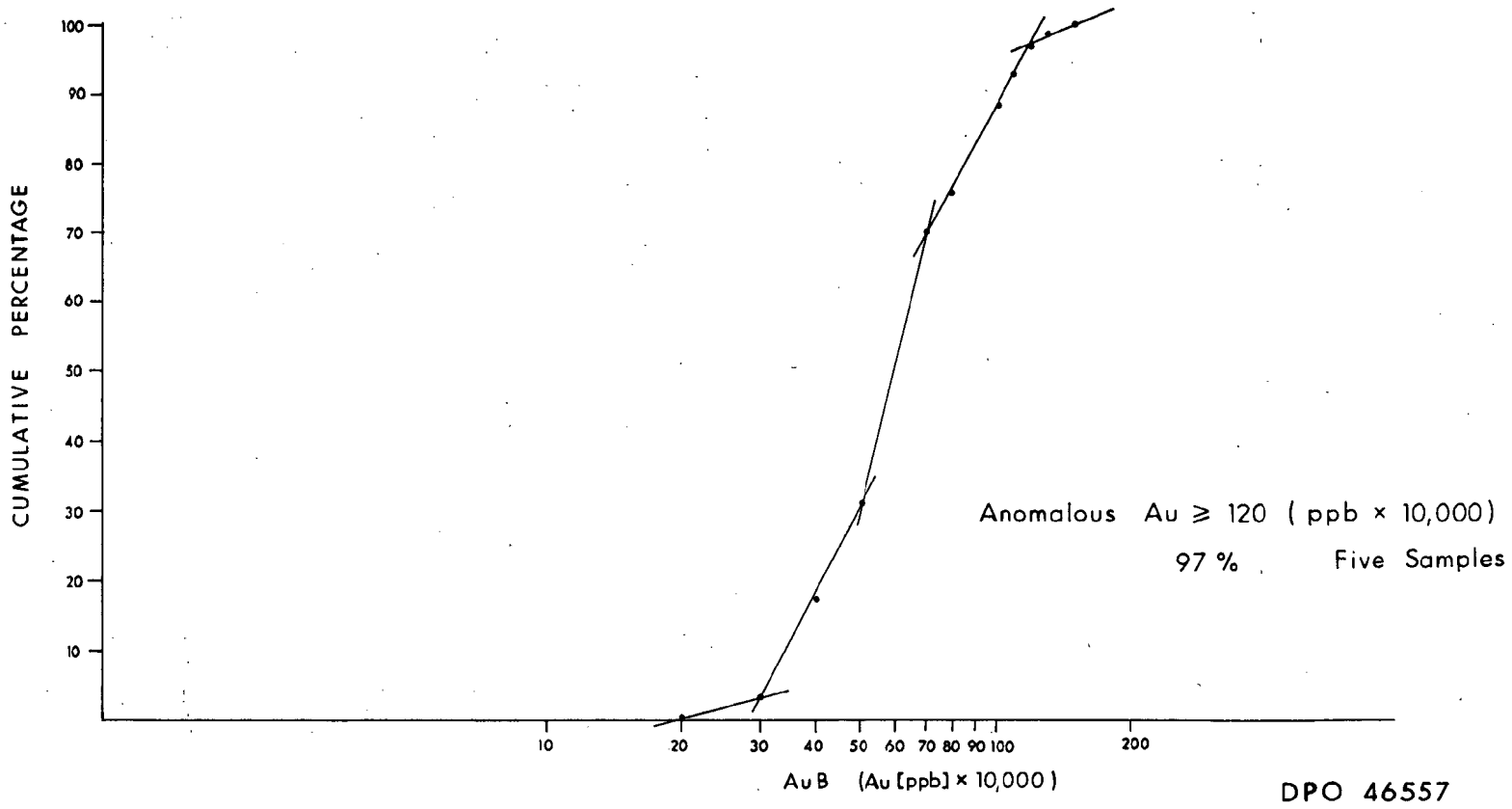
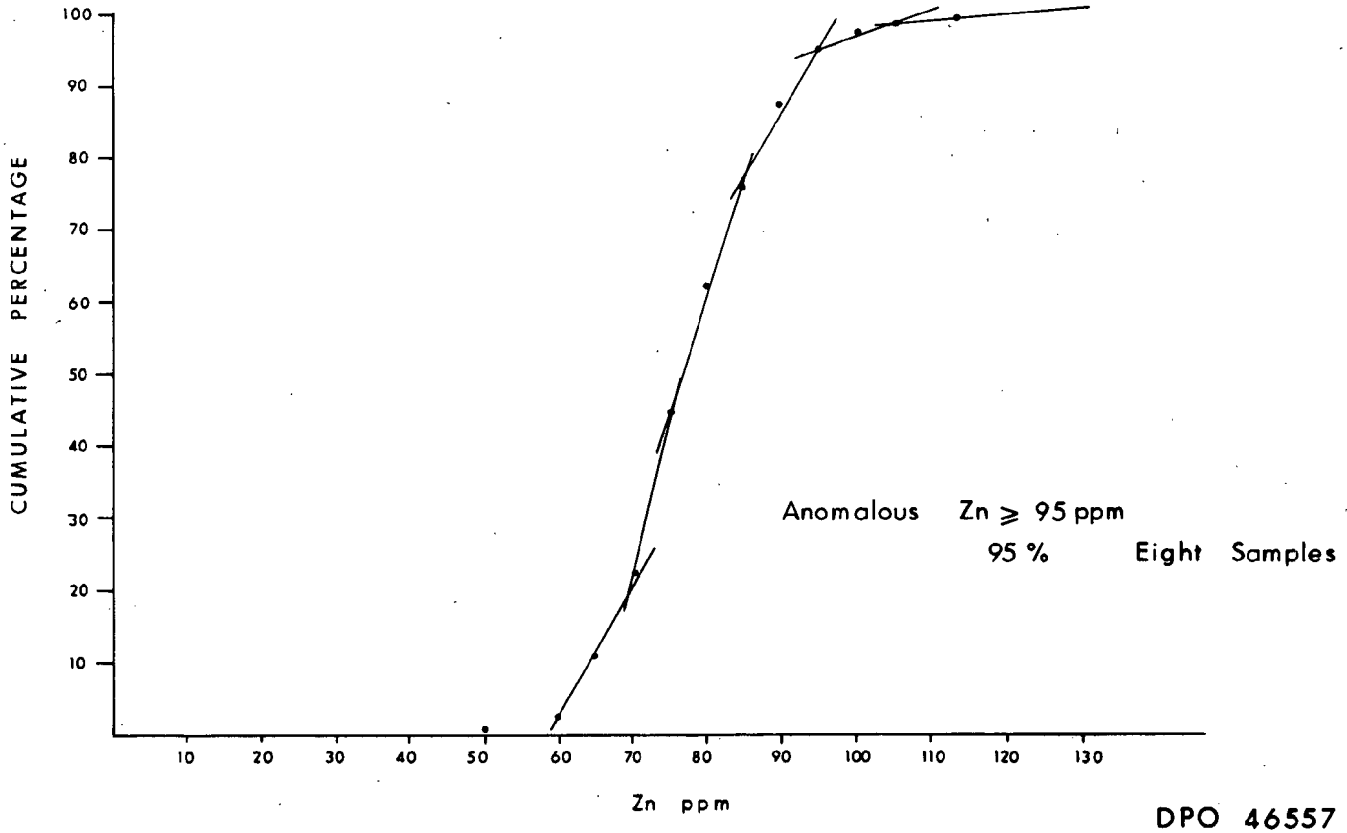


Fig. 5

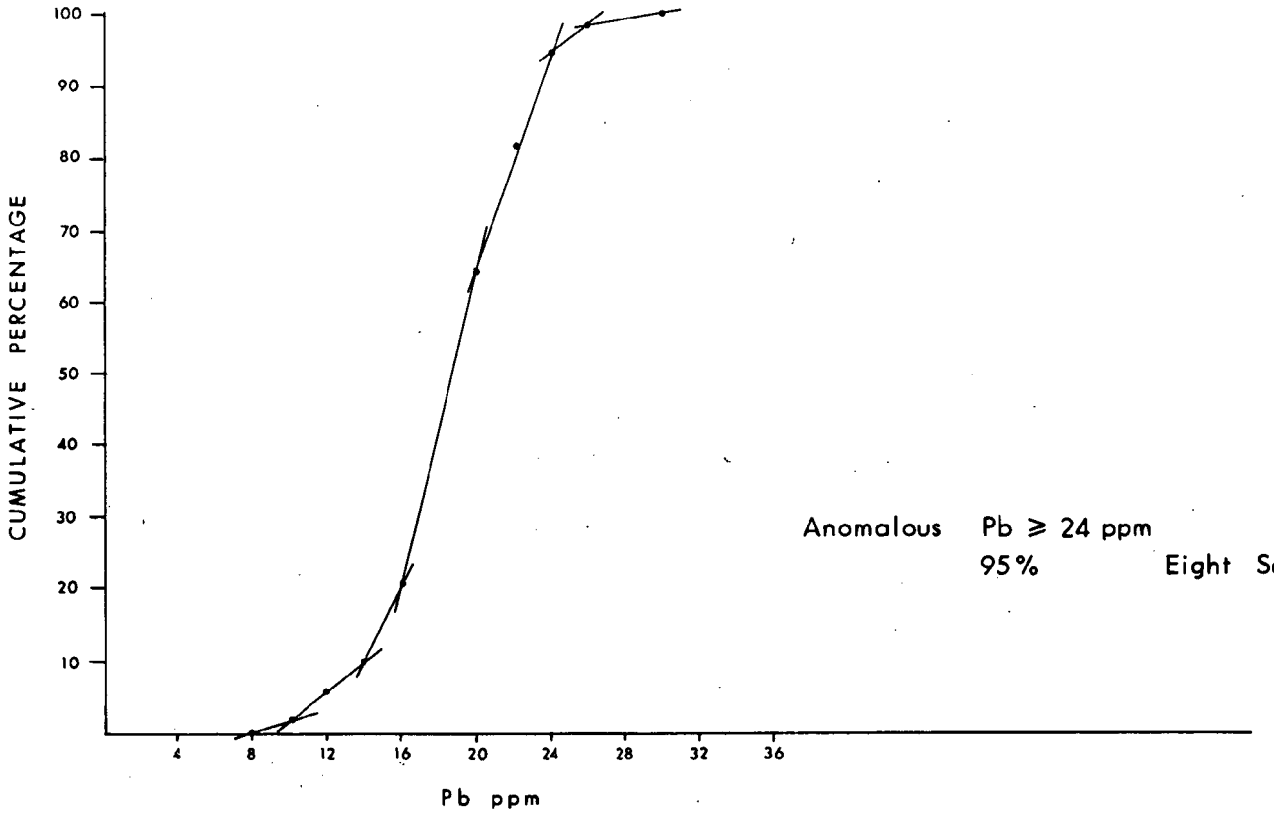
HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH
Zn



DPO 46557

Fig. 6

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH
Pb

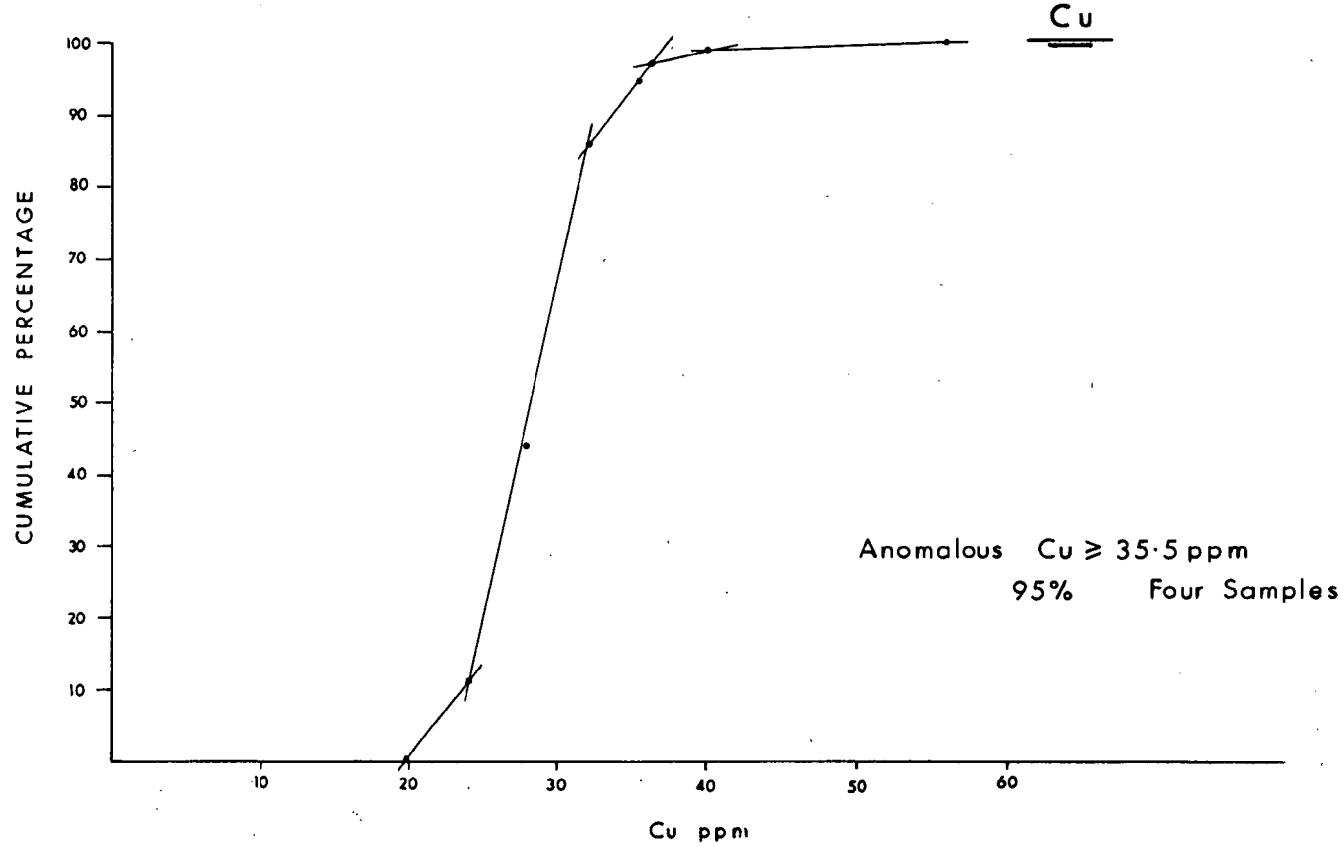


Anomalous Pb ≥ 24 ppm
95% Eight Samples

DPO 46557

Fig. 7

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

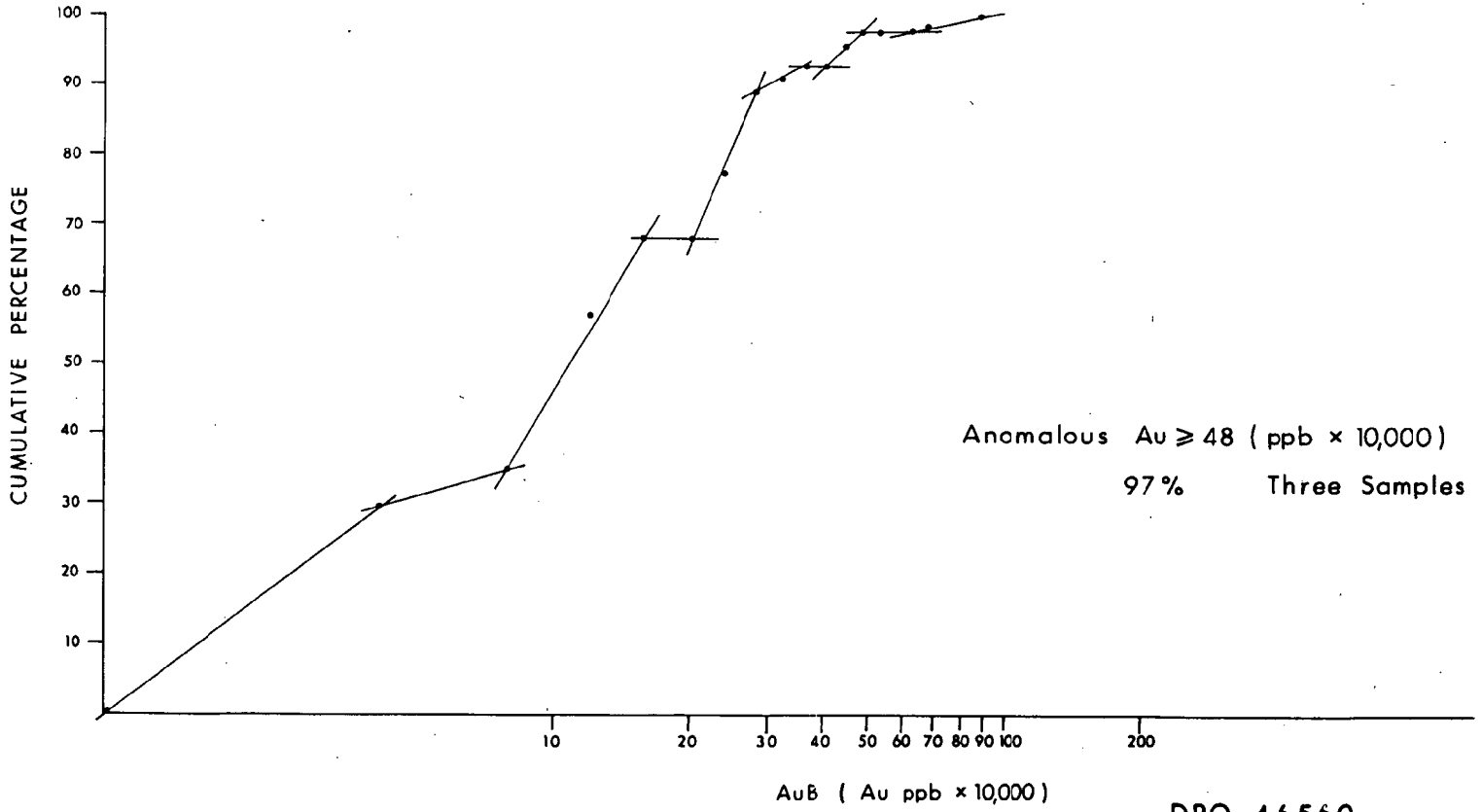


DPO 46557

Fig. 8

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

AuB = (Au ppb × 10,000)



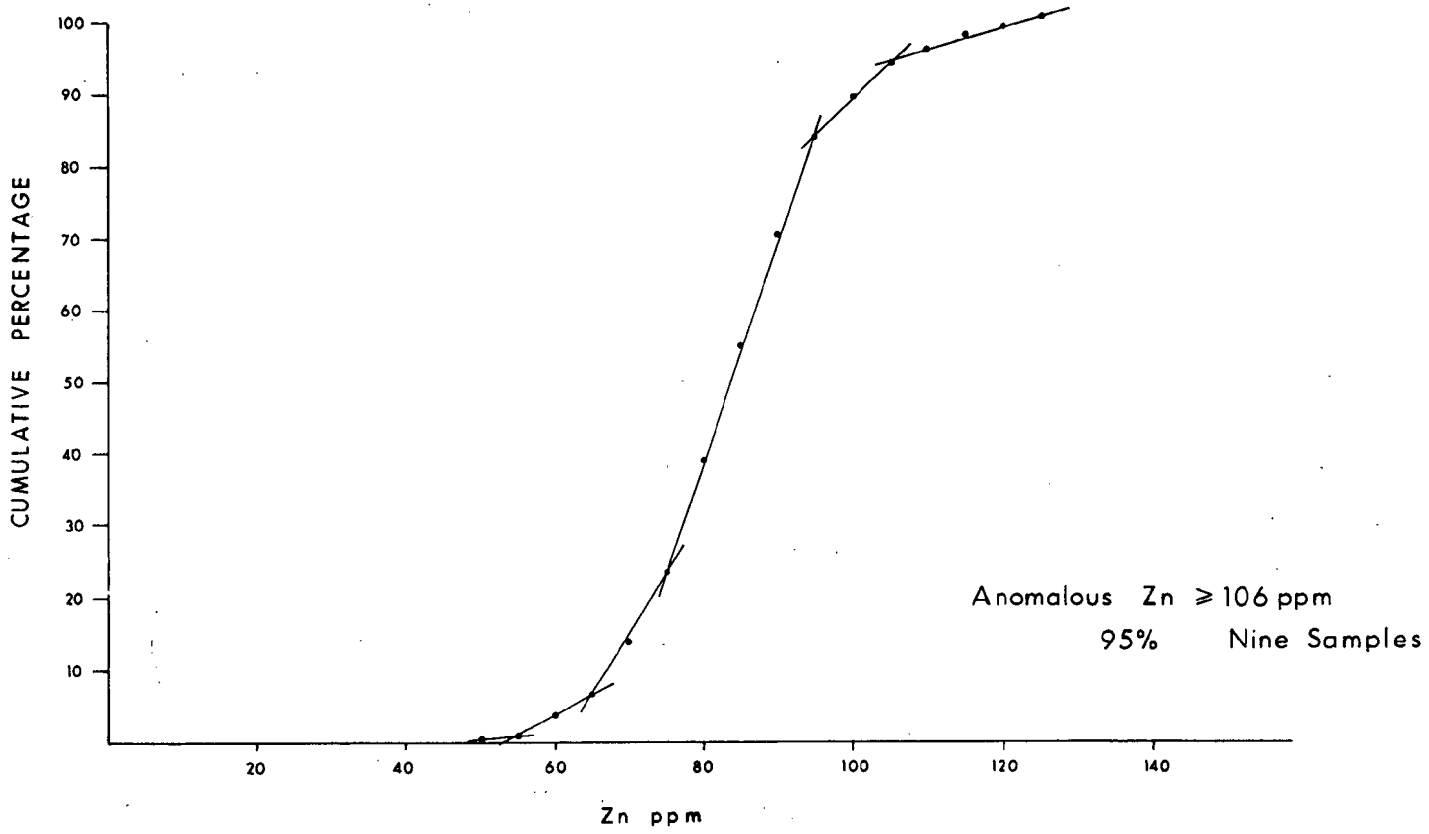
Anomalous Au ≥ 48 (ppb × 10,000)
97 % Three Samples

DPO 46560

Fig. 9

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

Zn



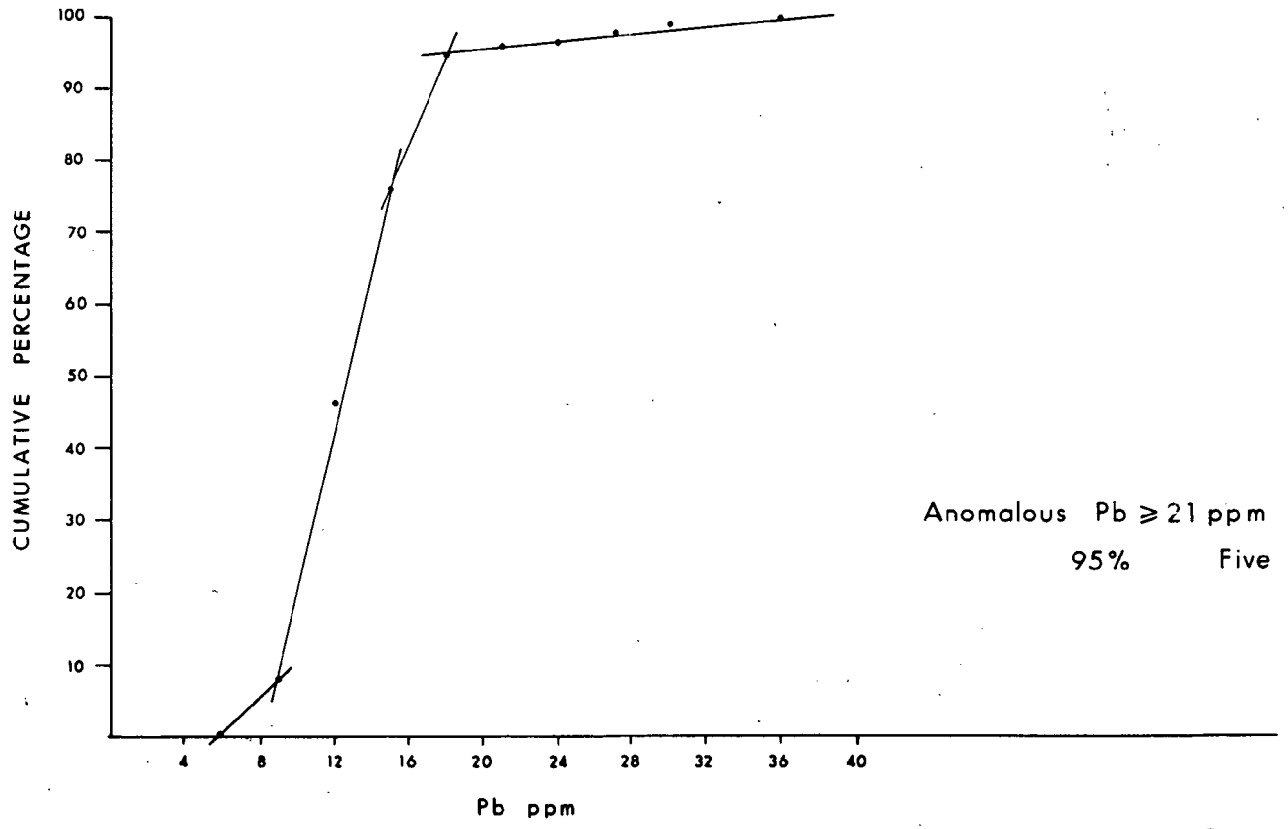
Anomalous Zn ≥ 106 ppm
95% Nine Samples

DPO 46560

Fig. 10

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

Pb



Anomalous Pb ≥ 21 ppm

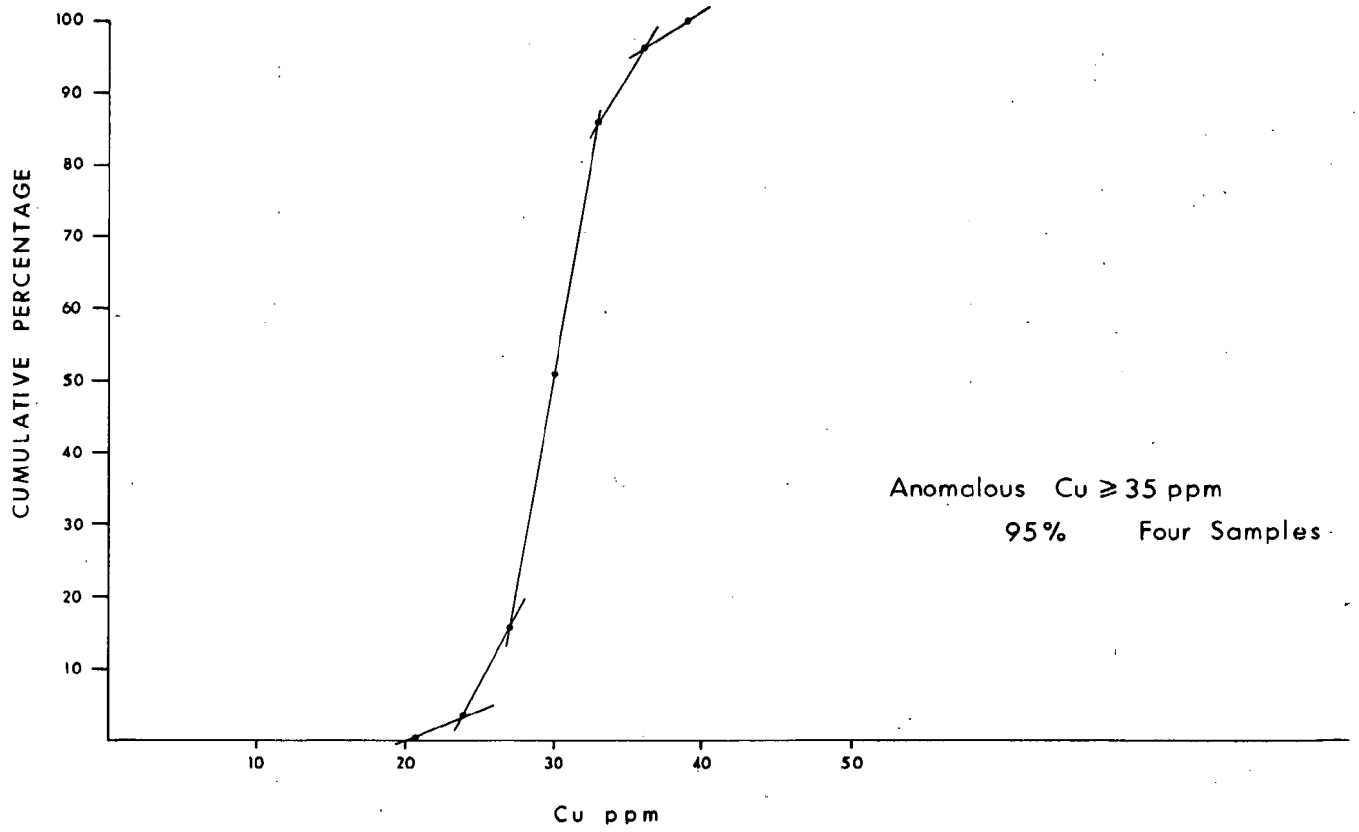
95% Five Samples

DPO 46560

Fig. 11

HOPE BANK EL 1376
SUSPENDED SILT SAMPLES (DRAINAGE)
CUMULATIVE FREQUENCY GRAPH

Cu



Anomalous Cu ≥ 35 ppm
95% Four Samples

DPO 46560

Fig. 12

APPENDIX I

ANALYTICAL RESULTS AND GRID CO-ORDINATES

amdel
technology and enterprise

NATA CERTIFICATE
Amdel Limited - Inc. in S.A.

Amdel
31 Flemington Street,
Frewville, S.A. 5063

Telephone: (08) 372 2700

Address all correspondence to:
P.O. Box 114,
Eastwood, S.A. 5063

Telex: AA82520
Facsimile: (08) 79 6623

25 August 1987

Dr. B. Murrell
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609

REPORT AC 134/88

YOUR REFERENCE: DPO 46556

REPORT COMPRISING: Cover sheet
Page G1-G10
Page I1-I10

DATE RECEIVED: 13 July 1987

Approved Signatory: Don Patterson

D. Patterson

Manager, Geo-Analytical Services

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc Administration Officer
PO Box 656
FYSHWICK ACT 2609

cc Chief Geologist Information Services
PO Box 656
FYSHWICK ACT 2609

The report relates specifically to the sample tested and also the entire batch in so far as the sample is truly representative of the sample source.

tk

amdel

00112

Analysis code PM1/3SPE Report AC 134/88 Page G1

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239417	<2	11	35	27	<1	26	11	73
1239418	<2	13	30	30	<1	28	11	72
1239419	<2	13	30	27	<1	26	11	69
1239420	<2	12	37	25	<1	27	13	83
1239421	<2	12	34	27	<1	23	14	84
1239422	<2	11	32	25	<1	23	12	68
1239423	<2	14	33	25	<1	26	14	89
1239424	<2	21	39	27	<1	31	23	105
1239425	<2	17	35	28	<1	29	14	96
1239426	<2	16	37	27	<1	28	19	89
1239427	<2	10	29	21	<1	22	12	64
1239428	<2	19	35	31	<1	30	18	90
1239429	<2	10	26	22	<1	20	11	59
1239430	4	13	38	29	<1	28	16	82
1239431	<2	17	37	28	1	28	16	78
1239432	<2	9	28	24	<1	25	12	73
1239433	3	19	33	30	<1	28	20	79
1239434	2	16	39	34	<1	32	18	76
1239435	<2	13	33	25	<1	28	14	92
1239436	<2	17	30	33	2	32	21	97
1239437	<2	17	32	29	<1	28	15	82
1239438	3	13	30	28	<1	24	15	83
1239439	4	14	34	27	<1	25	14	92
1239440	3	15	33	27	<1	27	16	90
1239441	<2	11	29	25	<1	22	11	70
1239442	<2	12	32	24	<1	23	12	79
1239443	<2	10	24	21	<1	19	8	61
1239444	3	12	32	26	<1	21	11	76
1239445	<2	11	25	24	<1	19	10	68
1239446	<2	14	36	27	<1	24	16	89
1239447	<2	10	24	22	<1	18	9	68
1239448	<2	13	37	28	<1	24	14	87
1239449	<2	10	23	21	<1	17	9	63
1239450	<2	11	28	25	<1	21	15	77
1239451	<2	14	27	27	<1	23	13	72
1239452	4	12	27	24	<1	20	14	88
1239453	<2	11	25	28	<1	21	11	74
1239454	3	13	27	25	<1	26	12	79
1239455	<2	15	31	33	<1	24	16	83
1239456	<2	13	31	28	<1	25	14	79
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G2

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239457	<2	9	26	24	2	19	10	60
1239458	2	12	35	31	1	25	18	73
1239459	<2	12	31	27	2	23	14	72
1239460	<2	14	34	23	2	22	18	88
1239461	<2	14	32	27	3	24	17	85
1239462	<2	13	35	25	2	22	15	74
1239463	<2	13	35	26	3	22	14	80
1239464	<2	14	32	23	2	20	15	90
1239465	<2	12	26	20	2	19	13	82
1239466	<2	9	22	20	4	15	9	55
1239467	<2	14	34	29	3	24	11	90
1239468	<2	9	25	22	1	16	9	65
1239469	3	8	27	23	<1	16	10	64
1239470	<2	13	38	34	<1	25	9	83
1239471	<2	12	34	25	1	22	12	77
1239472	<2	14	32	29	1	25	15	99
1239473	<2	14	39	26	1	24	15	86
1239474	<2	13	37	29	<1	27	13	90
1239475	<2	8	22	17	<1	18	6	59
1239476	2	13	35	26	<1	27	12	87
1239477	<2	17	35	26	<1	27	18	97
1239478	<2	12	30	28	<1	26	15	84
1239479	<2	13	29	27	<1	24	13	79
1239480	<2	10	27	25	<1	22	10	74
1239481	<2	10	28	24	2	24	12	82
1239482	<2	10	25	25	<1	23	10	74
1239483	3	15	32	30	1	29	17	86
1239484	<2	16	32	30	2	31	17	88
1239485	<2	11	33	28	3	29	12	89
1239486	<2	12	30	27	<1	27	9	86
1239487	<2	11	26	27	<1	23	12	82
1239488	<2	11	33	24	<1	27	11	82
1239489	<2	13	33	26	<1	27	13	94
1239490	<2	16	43	25	<1	28	16	93
1239491	<2	12	35	24	<1	23	14	77
1239492	<2	7	26	18	1	18	4	56
1239493	<2	12	39	30	1	22	9	78
1239494	<2	16	40	31	1	32	12	86
1239495	<2	14	36	28	1	27	13	87
1239496	<2	11	37	27	2	25	12	86
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

00114

Analysis code PM1/3SPE Report AC 134/88 Page G3

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239497	<2	12	34	27	<1	24	10	79
1239498	<2	11	32	23	1	23	10	76
1239499	2	12	37	27	2	29	11	98
1239500	<2	15	39	25	2	28	14	93
1239501	<2	14	40	26	<1	29	12	95
1239502	3	13	38	26	<1	24	14	87
1239503	<2	15	37	26	<1	26	14	88
1239504	<2	13	36	28	2	24	11	79
1239505	<2	12	27	27	1	23	10	75
1239506	<2	11	29	26	<1	22	13	82
1239507	<2	13	33	30	<1	28	15	110
1239508	<2	12	33	35	<1	22	10	73
1239509	<2	12	34	32	<1	23	10	75
1239510	<2	9	26	31	<1	18	11	72
1239511	<2	11	22	30	2	22	10	71
1239512	<2	11	26	29	2	22	10	73
1239513	<2	10	23	28	2	20	11	64
1239514	<2	11	23	32	3	26	12	79
1239515	<2	20	37	36	<1	33	22	110
1239516	<2	15	31	34	<1	31	16	105
1239517	<2	12	31	32	1	28	11	87
1239518	<2	14	34	31	<1	30	10	110
1239519	<2	17	32	31	2	33	17	100
1239520	<2	11	28	26	1	29	9	91
1239521	<2	19	38	36	1	38	17	115
1239522	<2	15	34	42	<1	34	17	105
1239523	<2	15	32	39	<1	35	16	105
1239524	<2	13	43	33	<1	33	14	105
1239525	<2	15	22	31	<1	38	9	76
1239526	<2	13	33	34	<1	28	7	89
1239527	<2	14	37	28	<1	35	10	100
1239528	<2	17	39	28	1	36	15	115
1239529	<2	13	38	30	<1	35	7	100
1239530	<2	14	38	32	<1	30	12	98
1239531	<2	13	36	33	<1	25	9	86
1239532	<2	13	29	33	<1	25	8	81
1239533	<2	15	39	32	2	32	12	115
1239534	<2	13	30	28	1	28	11	110
1239535	<2	12	36	36	2	35	14	105
1239536	<2	14	41	32	2	33	14	125
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G4

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239541	<2	14	27	34	1	28	7	87
1239542	<2	15	25	29	2	29	7	94
1239543	<2	13	29	27	2	28	10	81
1239544	<2	9	21	26	1	17	11	61
1239545	<2	13	25	32	2	20	28	90
1239546	<2	13	21	37	3	21	29	95
1239547	<2	10	24	30	3	19	19	76
1239548	<2	11	24	20	<1	19	32	55
1239549	<2	14	33	26	<1	29	15	79
1239550	5	14	29	25	<1	25	14	71
1239551	<2	10	22	24	<1	20	9	58
1239552	3	11	25	25	<1	22	7	67
1239553	<2	11	24	24	<1	21	9	61
1239554	<2	11	26	25	1	19	9	69
1239555	<2	14	32	26	2	24	13	88
1239556	<2	12	29	25	1	21	12	82
1239557	<2	14	32	24	1	22	15	93
1239558	<2	10	27	28	<1	20	10	71
1239559	<2	15	31	26	<1	23	12	88
1239560	<2	13	32	29	<1	26	12	88
1239561	<2	12	35	28	<1	28	13	93
1239562	<2	14	32	29	<1	29	12	88
1239563	<2	11	30	29	1	22	14	85
1239564	4	11	28	30	<1	22	12	75
1239565	<2	12	30	32	2	22	12	79
1239566	<2	13	27	32	1	23	12	77
1239567	<2	14	29	32	2	23	17	89
1239568	<2	16	35	34	1	27	14	105
1239569	<2	15	34	26	2	25	18	100
1239570	<2	13	32	27	1	23	21	100
1239571	<2	14	32	26	2	22	17	90
1239572	<2	19	42	31	1	27	20	98
1239573	4	12	30	30	<1	18	14	68
1239574	<2	16	31	34	2	25	15	86
1239575	<2	11	35	25	2	21	13	86
1239576	3	10	31	23	<1	18	12	73
1239577	3	11	33	24	1	20	10	79
1239578	5	18	38	26	1	28	17	94
1239579	3	16	39	27	2	<2	15	92
1239580	<2	22	36	31	1	24	21	94
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

00116

Analysis code PM1/3SPE Report AC 134/88 Page G5

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb	Zn
1239581	<2	11	31	23	<1	18	10	81
1239582	<2	20	32	23	<1	21	16	96
1239583	<2	11	39	30	<1	18	15	83
1239584	<2	13	37	26	<1	22	12	78
1239585	<2	20	39	29	<1	26	20	93
1239586	<2	23	40	33	<1	28	20	94
1239587	<2	13	34	27	<1	21	11	75
1239588	<2	12	41	33	<1	24	14	92
1239589	<2	14	35	28	<1	22	19	90
1239590	<2	19	39	31	<1	24	19	86
1239591	<2	15	40	32	<1	23	19	90
1239592	<2	20	42	32	1	28	17	100
1239593	<2	25	42	31	2	28	18	85
1239594	<2	13	38	31	<1	22	14	92
1239595	<2	21	60	35	<1	34	41	180
1239596	<2	13	37	24	1	21	20	91
1239597	<2	16	43	34	2	27	21	90
1239598	<2	14	41	30	<1	27	19	85
1239599	<2	11	31	28	1	22	14	76
1239600	<2	15	40	28	1	25	18	95
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)	(2)

amdel

Analysis code PM1/3SPE Report AC 134/88 Page G6

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239417	0.0010	0.001	0.001
1239418	0.0025	<0.001	0.002
1239419	0.0005	<0.001	0.002
1239420	0.0005	<0.001	0.001
1239421	0.0005	<0.001	0.002
1239422	0.0025	<0.001	0.001
1239423	0.0015	<0.001	0.002
1239424	0.0015	0.001	0.002
1239425	0.0015	<0.001	0.002
1239426	0.0015	<0.001	0.002
1239427	0.0010	0.001	0.002
1239428	0.0005	<0.001	0.001
1239429	0.0035	<0.001	0.002
1239430	0.0020	0.001	0.001
1239431	0.0020	0.001	0.002
1239432	0.0010	<0.001	<0.001
1239433	0.0025	0.001	0.001
1239434	0.0035	<0.001	<0.001
1239435	0.0040	<0.001	<0.001
1239436	0.0600	<0.001	<0.001
1239437	0.0030	<0.001	<0.001
1239438	0.0320	0.001	<0.001
1239439	0.0080	<0.001	<0.001
1239440	0.0015	0.001	0.001
1239441	0.0045	0.002	<0.001
1239442	0.0010	0.002	0.002
1239443	0.0025	0.002	0.001
1239444	0.0015	<0.001	0.001
1239445	0.0030	<0.001	0.002
1239446	0.0015	0.001	0.001
1239447	0.0015	<0.001	0.002
1239448	0.0010	<0.001	0.001
1239449	0.0005	<0.001	0.002
1239450	0.0015	<0.001	0.001
1239451	0.0005	<0.001	0.002
1239452	0.0005	<0.001	0.002
1239453	0.0045	<0.001	0.002
1239454	0.0030	<0.001	0.001
1239455	0.0025	<0.001	0.001
1239456	0.0110	<0.001	0.002
Detn limit	(.0005)	(0.001)	(0.001)

amdel

00118

Analysis code PM1/3SPE Report AC 134/88 Page G7

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239457	0.0015	<0.001	0.002
1239458	0.0015	<0.001	0.001
1239459	0.0010	0.002	0.003
1239460	0.0030	<0.001	0.001
1239461	0.0015	0.001	0.002
1239462	0.0025	<0.001	<0.001
1239463	0.0015	<0.001	0.002
1239464	0.0005	<0.001	<0.001
1239465	0.0020	<0.001	0.001
1239466	0.0005	<0.001	0.002
1239467	0.0005	<0.001	0.002
1239468	0.0005	<0.001	0.002
1239469	0.0005	<0.001	0.002
1239470	0.0020	0.001	0.001
1239471	0.0005	<0.001	0.004
1239472	0.0005	<0.001	<0.001
1239473	0.0005	<0.001	0.002
1239474	0.0005	<0.001	0.001
1239475	0.0005	<0.001	<0.001
1239476	0.0005	<0.001	0.001
1239477	0.0005	<0.001	0.003
1239478	0.0005	<0.001	0.002
1239479	0.0030	<0.001	0.001
1239480	0.0025	<0.001	0.002
1239481	0.0015	<0.001	0.001
1239482	0.0010	<0.001	0.001
1239483	0.0015	<0.001	0.002
1239484	0.0015	<0.001	0.001
1239485	0.0025	<0.001	<0.001
1239486	0.0030	<0.001	<0.001
1239487	0.0010	<0.001	0.002
1239488	0.0010	<0.001	0.001
1239489	0.0010	<0.001	0.003
1239490	0.0010	<0.001	0.003
1239491	0.0025	<0.001	0.004
1239492	0.0050	<0.001	0.004
1239493	0.0020	<0.001	0.002
1239494	0.0015	<0.001	0.005
1239495	0.0015	0.001	0.010
1239496	0.0010	<0.001	0.009
Detn limit	(.0005)	(0.001)	(0.001)

amdel

00119

Analysis code PM1/3SPE Report AC 134/88 Page G8

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239497	0.0010	<0.001	0.001
1239498	0.0005	<0.001	<0.001
1239499	0.0005	<0.001	<0.001
1239500	0.0025	<0.001	<0.001
1239501	0.0005	<0.001	<0.001
1239502	0.0005	<0.001	0.001
1239503	0.0005	<0.001	0.001
1239504	0.0005	<0.001	0.002
1239505	0.0005	<0.001	0.001
1239506	0.0005	<0.001	0.002
1239507	0.0005	<0.001	0.001
1239508	0.0005	<0.001	0.002
1239509	0.0005	<0.001	0.002
1239510	0.0005	0.001	0.002
1239511	0.0005	<0.001	<0.001
1239512	0.0015	<0.001	<0.001
1239513	0.0025	<0.001	0.001
1239514	0.0005	<0.001	<0.001
1239515	0.0005	<0.001	0.001
1239516	0.0005	<0.001	<0.001
1239517	0.0005	<0.001	<0.001
1239518	0.0025	<0.001	<0.001
1239519	0.0010	<0.001	<0.001
1239520	0.0005	<0.001	0.001
1239521	0.0005	<0.001	<0.001
1239522	0.0005	<0.001	<0.001
1239523	0.0005	<0.001	<0.001
1239524	0.0005	<0.001	<0.001
1239525	0.0005	<0.001	<0.001
1239526	0.0005	<0.001	<0.001
1239527	0.0005	<0.001	<0.001
1239528	0.0015	<0.001	<0.001
1239529	0.0005	<0.001	<0.001
1239530	0.0005	<0.001	<0.001
1239531	0.0005	<0.001	<0.001
1239532	0.0005	<0.001	<0.001
1239533	0.0005	<0.001	0.001
1239534	0.0005	<0.001	<0.001
1239535	0.0005	<0.001	<0.001
1239536	0.0005	<0.001	<0.001

Detn limit(.0005)(0.001)(0.001)

amdel

00120

Analysis code PM1/3SPE Report AC 134/88 Page G9

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239541	0.0050	<0.001	<0.001
1239542	0.0025	<0.001	0.003
1239543	0.0005	<0.001	0.003
1239544	0.0005	<0.001	0.003
1239545	0.0060	<0.001	0.002
1239546	0.0035	<0.001	0.002
1239547	0.0025	<0.001	0.003
1239548	0.0025	<0.001	0.003
1239549	0.0020	<0.001	0.002
1239550	0.0020	<0.001	0.003
1239551	0.0030	<0.001	0.004
1239552	0.0035	0.001	0.003
1239553	0.0030	<0.001	0.002
1239554	0.0035	<0.001	0.002
1239555	0.0020	<0.001	<0.001
1239556	0.0030	<0.001	0.003
1239557	0.0020	<0.001	0.001
1239558	0.0035	<0.001	<0.001
1239559	0.0045	<0.001	0.001
1239560	0.0040	<0.001	0.002
1239561	0.0025	<0.001	0.001
1239562	0.0045	<0.001	<0.001
1239563	0.0010	<0.001	<0.001
1239564	0.0025	<0.001	<0.001
1239565	0.0015	<0.001	0.001
1239566	0.0010	<0.001	0.003
1239567	0.0005	<0.001	0.001
1239568	0.0005	0.001	0.001
1239569	0.0005	<0.001	0.001
1239570	0.0005	<0.001	<0.001
1239571	0.0005	0.001	0.002
1239572	0.0040	0.001	0.003
1239573	0.0025	<0.001	0.002
1239574	0.0005	<0.001	0.003
1239575	0.0025	<0.001	0.005
1239576	0.0015	<0.001	0.003
1239577	0.0025	<0.001	0.003
1239578	0.0045	<0.001	0.002
1239579	0.0055	0.001	<0.001
1239580	0.0045	<0.001	0.002
Detn limit	(.0005)	(0.001)	(0.001)

amdel

00121

Analysis code PM1/3SPE Report AC 134/88 Page G10

NATA Certificate Results in ppm

Sample	Au	Pt	Pd
1239581	0.0050	<0.001	0.002
1239582	0.0025	0.001	0.001
1239583	0.0025	<0.001	0.002
1239584	0.0020	<0.001	0.003
1239585	0.0020	<0.001	0.003
1239586	0.0020	0.001	0.002
1239587	0.0020	0.002	0.001
1239588	0.0025	<0.001	0.004
1239589	0.0035	<0.001	0.002
1239590	0.0015	<0.001	0.003
1239591	0.0030	0.001	0.002
1239592	0.0030	<0.001	0.002
1239593	0.0035	0.001	0.001
1239594	0.0030	0.003	0.001
1239595	0.0160	<0.001	<0.001
1239596	0.0025	<0.001	<0.001
1239597	0.0025	<0.001	<0.001
1239598	0.0020	<0.001	<0.001
1239599	0.0025	<0.001	0.003
1239600	0.0015	<0.001	<0.001
Detn limit	(.0005)	(0.001)	(0.001)

amdel

00122

Analysis code ICP2 Report AC 134/88 Page I1

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239417	10	160	4.78%	560	320	35	140	<5
1239418	10	200	4.14%	940	500	35	120	5
1239419	10	180	4.38%	800	380	35	130	5
1239420	5	170	4.98%	560	340	35	140	<5
1239421	10	240	4.36%	700	500	35	140	5
1239422	5	170	4.58%	580	360	35	130	5
1239423	5	180	5.35%	1100	550	35	140	<5
1239424	10	220	5.65%	1450	650	40	160	<5
1239425	5	180	4.88%	1000	450	40	140	<5
1239426	10	180	5.75%	960	550	40	150	<5
1239427	5	130	4.22%	560	340	35	120	<5
1239428	10	180	5.40%	1200	600	35	150	<5
1239429	10	150	3.96%	450	300	30	120	5
1239430	10	180	5.65%	800	600	45	180	<5
1239431	10	150	5.30%	860	500	35	150	<5
1239432	10	140	4.04%	460	320	30	110	5
1239433	10	180	5.20%	1250	600	40	150	<5
1239434	10	160	5.75%	880	550	40	160	<5
1239435	5	160	4.62%	440	800	35	130	<5
1239436	15	220	3.98%	1300	800	35	120	5
1239437	10	180	4.74%	880	400	35	140	<5
1239438	10	190	4.14%	680	550	35	130	5
1239439	10	190	4.38%	780	600	40	130	5
1239440	10	170	4.70%	840	450	35	140	<5
1239441	10	140	4.22%	470	280	35	130	<5
1239442	10	160	4.38%	660	400	40	130	5
1239443	10	170	3.30%	400	400	30	100	10
1239444	5	150	4.68%	500	360	35	130	<5
1239445	10	160	3.90%	480	400	30	120	5
1239446	10	180	4.94%	780	550	40	150	<5
1239447	10	130	3.24%	460	450	30	110	10
1239448	10	180	5.30%	660	500	40	150	5
1239449	10	110	2.80%	410	400	30	95	10
1239450	10	170	3.98%	560	450	30	120	5
1239451	10	130	3.86%	600	360	25	120	<5
1239452	10	180	3.94%	600	550	35	120	10
1239453	10	140	3.24%	490	500	30	100	5
1239454	15	150	3.58%	600	650	30	120	10
1239455	10	150	4.46%	720	500	35	130	<5
1239456	15	150	3.46%	580	700	35	110	10
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 134/88 Page I2

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239457	10	130	2.88%	410	360	30	95	5
1239458	10	140	4.78%	500	300	35	140	<5
1239459	10	110	3.38%	490	320	30	100	5
1239460	10	130	3.48%	620	450	30	110	5
1239461	10	150	3.74%	720	600	35	110	5
1239462	5	85	3.76%	490	300	30	110	<5
1239463	10	150	3.70%	600	500	35	130	5
1239464	10	200	4.00%	700	700	35	140	10
1239465	5	140	2.80%	580	500	30	95	5
1239466	10	110	2.06%	280	340	20	75	5
1239467	10	140	2.88%	560	500	30	100	10
1239468	5	95	2.24%	320	400	25	90	5
1239469	5	140	2.14%	300	360	25	95	10
1239470	<5	170	4.42%	410	450	<5	70	<5
1239471	<5	160	4.28%	580	380	<5	65	<5
1239472	<5	160	4.34%	680	600	<5	70	<5
1239473	<5	75	4.64%	640	400	<5	70	<5
1239474	<5	170	4.50%	680	400	<5	75	<5
1239475	<5	110	2.62%	380	400	5	40	5
1239476	<5	160	4.38%	660	380	<5	70	<5
1239477	<5	220	4.60%	940	650	<5	75	<5
1239478	<5	160	4.06%	660	400	<5	65	<5
1239479	<5	160	4.14%	680	550	<5	65	<5
1239480	<5	160	3.46%	520	600	<5	60	5
1239481	<5	170	3.48%	560	600	<5	60	5
1239482	<5	140	3.34%	460	500	<5	55	5
1239483	<5	170	4.26%	720	500	<5	70	<5
1239484	<5	160	4.56%	860	450	<5	70	<5
1239485	<5	150	3.80%	380	380	<5	75	5
1239486	<5	150	3.94%	520	500	<5	70	5
1239487	<5	150	3.56%	560	650	<5	60	5
1239488	<5	110	3.44%	520	650	<5	50	5
1239489	<5	130	4.26%	700	700	<5	60	<5
1239490	<5	170	4.66%	800	550	<5	70	<5
1239491	<5	150	4.08%	620	450	<5	70	<5
1239492	10	180	2.40%	240	400	10	45	15
1239493	<5	140	5.15%	660	400	<5	70	<5
1239494	<5	190	4.32%	940	700	<5	75	5
1239495	<5	160	4.44%	800	600	<5	80	<5
1239496	<5	140	4.18%	660	650	<5	75	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

00124

Analysis code ICP2 Report AC 134/88 Page I3

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239497	<5	130	3.62%	600	650	<5	70	5
1239498	<5	140	3.82%	620	600	<5	65	5
1239499	<5	160	4.34%	800	900	<5	80	<5
1239500	<5	210	4.62%	1000	600	<5	80	<5
1239501	<5	160	4.76%	960	500	<5	75	<5
1239502	<5	200	4.50%	820	700	<5	80	5
1239503	<5	150	4.44%	1050	550	<5	70	<5
1239504	<5	190	4.22%	680	650	<5	80	5
1239505	<5	130	3.20%	490	600	<5	65	5
1239506	<5	160	3.34%	560	750	<5	65	5
1239507	<5	140	4.46%	860	800	<5	75	<5
1239508	<5	160	4.00%	580	500	<5	80	<5
1239509	<5	170	4.26%	640	400	<5	80	<5
1239510	<5	140	3.38%	520	450	<5	60	<5
1239511	<5	140	3.22%	540	450	<5	55	5
1239512	<5	110	2.50%	350	380	<5	55	<5
1239513	5	95	2.26%	280	340	<5	55	5
1239514	<5	75	2.12%	330	240	<5	40	<5
1239515	<5	190	4.86%	1100	500	10	50	<5
1239516	<5	150	4.20%	780	450	10	45	<5
1239517	5	150	3.60%	500	450	10	40	5
1239518	<5	100	4.14%	660	550	10	45	5
1239519	<5	170	4.24%	860	600	10	50	5
1239520	<5	95	3.60%	460	360	10	35	<5
1239521	<5	190	5.25%	880	380	10	50	<5
1239522	<5	190	4.70%	660	400	10	50	<5
1239523	<5	180	4.40%	680	400	10	55	<5
1239524	<5	130	4.68%	600	380	10	50	<5
1239525	15	160	5.65%	1150	750	10	60	<5
1239526	5	140	3.94%	540	500	10	50	5
1239527	<5	85	4.36%	500	340	10	45	<5
1239528	<5	160	5.20%	1050	500	10	55	<5
1239529	<5	150	4.58%	840	450	10	50	<5
1239530	<5	210	4.48%	880	750	10	55	5
1239531	<5	170	4.12%	580	450	10	50	<5
1239532	<5	160	3.66%	600	650	10	50	10
1239533	<5	180	4.94%	740	500	10	60	<5
1239534	5	130	4.10%	640	800	10	50	5
1239535	<5	95	4.66%	440	360	10	50	<5
1239536	<5	130	5.70%	720	400	10	55	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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00125

Analysis code ICP2 Report AC 134/88 Page I4

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239541	<5	220	3.90%	720	600	10	50	5
1239542	5	180	4.04%	620	650	10	45	5
1239543	<5	210	4.26%	680	650	10	50	5
1239544	<5	170	3.04%	450	450	10	45	5
1239545	<5	220	4.14%	1150	750	10	50	5
1239546	5	190	4.10%	1300	800	10	45	5
1239547	<5	190	3.54%	470	450	10	50	10
1239548	5	170	3.50%	920	850	10	40	10
1239549	<5	250	4.18%	780	600	10	50	5
1239550	<5	180	4.82%	640	360	10	45	<5
1239551	5	190	2.86%	430	400	10	40	10
1239552	<5	240	3.30%	420	400	10	35	10
1239553	<5	210	3.20%	520	500	10	40	10
1239554	<5	220	3.60%	460	450	10	45	10
1239555	<5	230	5.00%	780	600	10	50	5
1239556	<5	220	4.18%	660	650	10	45	10
1239557	<5	290	4.72%	820	700	10	60	5
1239558	<5	160	3.28%	410	400	10	35	10
1239559	<5	260	4.70%	820	650	10	50	5
1239560	<5	190	4.90%	660	500	10	55	5
1239561	<5	150	5.10%	620	450	10	45	<5
1239562	<5	220	4.36%	660	500	10	50	5
1239563	<5	210	4.24%	520	450	5	45	<5
1239564	<5	190	3.80%	430	400	10	45	10
1239565	<5	190	4.10%	470	400	10	45	5
1239566	<5	200	4.34%	620	550	10	45	5
1239567	<5	200	4.86%	860	650	25	85	<5
1239568	<5	200	6.55%	1000	700	25	95	<5
1239569	<5	210	6.25%	840	550	30	95	<5
1239570	<5	200	6.15%	780	700	30	95	<5
1239571	<5	200	5.35%	820	650	25	95	5
1239572	<5	210	6.75%	1200	650	25	100	<5
1239573	5	190	4.30%	560	600	25	85	10
1239574	5	190	5.35%	780	700	25	95	5
1239575	5	180	4.62%	620	600	25	85	5
1239576	<5	170	4.04%	500	450	25	80	10
1239577	5	180	4.20%	540	600	25	80	10
1239578	<5	190	5.30%	1100	500	25	95	<5
1239579	<5	200	5.30%	1000	550	30	100	<5
1239580	5	240	5.15%	1450	600	25	100	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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00126

Analysis code ICP2 Report AC 134/88 Page I5

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239581	5	160	3.78%	450	400	20	80	10
1239582	5	190	4.32%	860	500	20	90	5
1239583	<5	85	5.55%	460	380	30	100	<5
1239584	5	210	5.05%	640	450	30	100	<5
1239585	5	170	5.90%	1050	600	30	110	<5
1239586	5	210	5.65%	1350	650	30	110	<5
1239587	5	170	4.62%	660	450	30	95	<5
1239588	10	180	5.80%	720	600	35	110	<5
1239589	5	220	4.96%	820	550	30	100	5
1239590	5	160	5.45%	1050	500	30	110	<5
1239591	5	180	5.80%	780	550	30	110	<5
1239592	5	220	5.80%	1150	550	35	110	<5
1239593	5	120	5.40%	1150	500	30	120	<5
1239594	5	210	5.25%	700	380	30	110	<5
1239595	10	410	6.55%	1500	1850	55	130	<5
1239596	5	230	4.66%	760	450	30	100	<5
1239597	5	190	5.65%	920	500	35	120	<5
1239598	5	170	4.84%	760	400	30	100	<5
1239599	5	160	3.60%	450	380	25	80	5
1239600	5	200	5.05%	800	380	30	110	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

00127

Analysis code ICP2 Report AC 134/88 Page I6

NATA Certificate Results in ppm

Sample	Sn	W
1239417	30	25
1239418	30	25
1239419	30	25
1239420	35	30
1239421	35	30
1239422	35	30
1239423	35	25
1239424	40	35
1239425	35	30
1239426	40	30
1239427	30	30
1239428	35	30
1239429	30	25
1239430	40	35
1239431	35	30
1239432	25	25
1239433	35	35
1239434	40	35
1239435	30	25
1239436	30	30
1239437	35	30
1239438	30	30
1239439	35	30
1239440	30	30
1239441	30	30
1239442	35	30
1239443	25	25
1239444	35	30
1239445	30	25
1239446	35	30
1239447	25	25
1239448	40	30
1239449	20	25
1239450	25	30
1239451	20	25
1239452	30	30
1239453	25	25
1239454	25	30
1239455	30	30
1239456	25	30
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 134/88 Page I7

NATA Certificate Results in ppm

Sample	Sn	W
1239457	25	25
1239458	30	30
1239459	25	25
1239460	25	30
1239461	25	30
1239462	25	30
1239463	30	30
1239464	30	30
1239465	20	25
1239466	15	20
1239467	20	30
1239468	15	20
1239469	20	20
1239470	25	<5
1239471	25	<5
1239472	25	<5
1239473	25	<5
1239474	25	<5
1239475	15	<5
1239476	25	<5
1239477	25	<5
1239478	20	<5
1239479	25	<5
1239480	20	<5
1239481	20	<5
1239482	20	<5
1239483	20	<5
1239484	20	<5
1239485	20	<5
1239486	25	<5
1239487	20	<5
1239488	15	<5
1239489	20	<5
1239490	25	<5
1239491	20	<5
1239492	15	<5
1239493	30	<5
1239494	25	<5
1239495	25	<5
1239496	25	<5
Detn limit	(5)	(5)

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00129

Analysis code ICP2 Report AC 134/88 Page I8

NATA Certificate Results in ppm

Sample	Sn	W
1239497	20	<5
1239498	20	<5
1239499	20	<5
1239500	25	<5
1239501	20	<5
1239502	25	<5
1239503	20	<5
1239504	25	<5
1239505	15	<5
1239506	15	<5
1239507	20	<5
1239508	25	<5
1239509	25	<5
1239510	20	<5
1239511	15	<5
1239512	15	<5
1239513	15	<5
1239514	10	<5
1239515	15	<5
1239516	15	<5
1239517	15	<5
1239518	15	<5
1239519	15	<5
1239520	10	<5
1239521	20	<5
1239522	20	<5
1239523	15	<5
1239524	15	<5
1239525	10	<5
1239526	15	<5
1239527	10	<5
1239528	15	<5
1239529	15	<5
1239530	15	<5
1239531	15	<5
1239532	15	<5
1239533	20	<5
1239534	15	<5
1239535	15	<5
1239536	15	<5
Detn limit	(5)	(5)

Analysis code ICP2 Report AC 134/88 Page I9

NATA Certificate Results in ppm

Sample	Sn	W
1239541	15	<5
1239542	15	<5
1239543	15	<5
1239544	15	<5
1239545	15	<5
1239546	15	<5
1239547	15	<5
1239548	15	<5
1239549	15	<5
1239550	15	<5
1239551	10	<5
1239552	15	<5
1239553	15	<5
1239554	15	<5
1239555	20	<5
1239556	15	<5
1239557	20	<5
1239558	15	<5
1239559	20	<5
1239560	20	<5
1239561	20	<5
1239562	15	<5
1239563	15	<5
1239564	15	<5
1239565	15	<5
1239566	15	<5
1239567	20	<5
1239568	30	<5
1239569	30	<5
1239570	30	<5
1239571	30	5
1239572	25	<5
1239573	25	5
1239574	25	5
1239575	25	5
1239576	25	5
1239577	25	5
1239578	25	5
1239579	30	5
1239580	25	5
Detn limit	(5)	(5)

Analysis code ICP2 Report AC 134/88 Page I10

NATA Certificate Results in ppm

Sample	Sn	W
1239581	20	10
1239582	20	10
1239583	25	5
1239584	25	10
1239585	25	5
1239586	30	5
1239587	25	10
1239588	30	5
1239589	25	5
1239590	30	10
1239591	30	5
1239592	30	5
1239593	25	10
1239594	30	5
1239595	45	20
1239596	30	5
1239597	30	10
1239598	25	5
1239599	20	10
1239600	30	5
Detn limit	(5)	(5)

amdel
technology and enterprise

Amdel
31 Flemington Street,
Frewville, S.A. 5063

Telephone: (08) 372 2700

Address all correspondence to:
P.O. Box 114,
Eastwood, S.A. 5063

Telex: AA82520
Facsimile: (08) 79 6623

NATA CERTIFICATE

Amdel Limited - Inc. in S.A.

26 August 1987

Dr. Burton Murrell
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609

REPORT AC 517/88

YOUR REFERENCE:	DPO 46557
REPORT COMPRISING:	Cover sheet Page I1-I12 Page G1-G12
DATE RECEIVED:	18 August 1987
Approved Signatory:	Don Patterson

Manager, Geo-Analytical Services

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc CRA Exploration Pty Ltd
PO Box
YUNTA SA 5440

cc Chief Geologist Information Services
PO Box 656
FYSHWICK ACT 2609

The report relates specifically to the sample tested and also the entire batch in so far as the sample is truly representative of the sample source.

tk

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Analysis code ICP2 Report AC 517/88 Page I1

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239537	<5	240	5.65%	1500	500	10	10	<5
1239538	<5	210	4.98%	820	380	5	5	<5
1239539	<5	170	6.00%	1100	400	15	5	<5
1239540	<5	180	5.95%	1350	500	20	10	5
1239601	<5	240	5.80%	1550	750	20	10	<5
1239602	<5	200	6.05%	1100	550	25	15	5
1239603	<5	290	4.68%	450	600	15	<5	<5
1239604	<5	250	6.90%	1050	550	25	<5	<5
1239605	<5	210	5.60%	1100	500	15	10	<5
1239606	<5	190	4.94%	720	400	10	<5	<5
1239607	<5	220	5.35%	1050	550	10	<5	<5
1239608	<5	190	5.55%	920	400	10	<5	<5
1239609	<5	210	5.90%	800	380	20	<5	<5
1239610	<5	170	5.65%	800	360	20	<5	<5
1239611	<5	210	5.60%	1000	500	10	5	<5
1239612	<5	210	5.75%	1000	450	10	<5	<5
1239613	<5	230	5.10%	920	550	10	<5	<5
1239614	<5	230	5.85%	960	450	25	5	5
1239615	<5	180	5.55%	840	400	25	<5	5
1239616	5	200	6.40%	1050	500	35	<5	10
1239617	<5	190	6.05%	840	500	30	5	5
1239618	<5	230	6.80%	1250	600	30	5	5
1239619	<5	170	5.90%	620	320	20	<5	<5
1239620	<5	240	5.60%	940	400	15	<5	<5
1239621	<5	160	4.88%	640	360	15	<5	<5
1239622	<5	200	5.85%	900	550	25	5	10
1239623	<5	190	5.75%	1200	500	20	5	5
1239624	<5	140	4.62%	880	400	15	5	<5
1239625	<5	180	5.30%	940	400	15	5	<5
1239626	<5	160	5.00%	680	360	15	<5	<5
1239627	<5	170	5.45%	1050	500	15	10	<5
1239628	<5	140	5.80%	960	500	10	10	<5
1239629	<5	120	4.68%	760	380	5	<5	<5
1239630	<5	130	5.10%	1100	240	5	<5	<5
1239631	<5	140	4.60%	880	380	<5	5	<5
1239632	<5	180	4.96%	840	380	10	5	<5
1239633	<5	150	5.55%	800	380	10	10	<5
1239634	<5	140	5.60%	840	360	10	5	<5
1239635	<5	160	5.50%	700	320	15	<5	<5
1239636	<5	100	4.64%	900	300	10	5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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00134

Analysis code ICP2 Report AC 517/88 Page I2

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239637	<5	170	5.20%	900	450	10	5	<5
1239638	<5	200	5.45%	700	340	10	<5	<5
1239639	<5	180	4.96%	820	400	10	<5	<5
1239640	<5	130	5.00%	500	260	10	<5	<5
1239641	<5	140	5.05%	1000	300	10	5	<5
1239642	<5	130	5.20%	640	400	10	5	<5
1239643	<5	150	5.20%	1050	300	15	5	<5
1239644	<5	150	4.66%	760	340	5	5	<5
1239645	<5	210	5.10%	660	320	10	<5	<5
1239646	<5	180	4.60%	580	380	10	<5	<5
1239647	<5	140	4.52%	720	300	5	10	<5
1239648	<5	160	4.96%	760	450	10	5	<5
1239649	<5	190	5.00%	800	400	10	<5	<5
1239650	<5	180	5.35%	960	400	10	5	<5
1239651	<5	160	4.66%	980	380	10	5	<5
1239652	<5	170	5.35%	820	400	10	<5	<5
1239653	<5	160	4.90%	760	450	10	<5	<5
1239654	<5	130	5.30%	600	360	10	5	<5
1239655	<5	180	5.10%	820	380	10	5	<5
1239656	<5	150	5.20%	800	450	15	5	<5
1239657	<5	150	4.76%	660	360	10	<5	<5
1239658	<5	160	4.54%	620	240	10	<5	<5
1239659	<5	160	5.40%	840	340	10	<5	<5
1239660	<5	120	5.05%	760	320	10	5	<5
1239661	<5	120	5.55%	940	500	5	<5	<5
1239662	<5	140	5.40%	560	340	15	<5	<5
1239663	<5	130	5.60%	640	360	20	<5	5
1239664	<5	170	5.25%	560	300	15	<5	<5
1239665	<5	170	5.90%	740	400	15	<5	<5
1239666	<5	150	6.10%	720	340	15	5	<5
1239667	<5	160	4.96%	520	300	10	<5	<5
1239668	<5	150	5.95%	840	450	15	<5	<5
1239669	<5	160	5.45%	520	500	15	<5	5
1239670	<5	180	4.74%	540	300	10	<5	<5
1239671	<5	150	5.80%	800	340	15	<5	<5
1239672	<5	130	5.15%	700	300	15	<5	<5
1239673	<5	160	6.45%	880	650	15	<5	<5
1239674	<5	140	5.95%	940	500	20	5	5
1239675	<5	170	4.70%	600	500	15	<5	<5
1239676	<5	160	5.85%	880	360	20	<5	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 517/88 Page I3

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239677	<5	140	5.80%	800	360	15	<5	<5
1239678	<5	160	5.90%	700	360	20	<5	5
1239679	<5	150	5.85%	720	450	15	<5	<5
1239680	<5	170	6.00%	920	450	15	<5	<5
1239681	<5	100	5.10%	660	320	10	10	<5
1239682	<5	150	5.50%	820	360	10	<5	<5
1239683	<5	160	5.55%	920	450	15	<5	<5
1239684	<5	130	6.25%	660	360	15	<5	<5
1239685	<5	130	6.20%	680	450	15	<5	<5
1239686	<5	150	5.80%	800	400	10	<5	<5
1239687	<5	150	5.70%	680	400	10	<5	<5
1239688	<5	150	5.85%	900	400	10	<5	<5
1239689	<5	140	5.35%	980	380	15	<5	<5
1239690	<5	140	4.06%	500	400	10	<5	<5
1239691	<5	160	5.10%	800	360	10	<5	<5
1239692	<5	160	4.28%	820	400	15	<5	<5
1239693	<5	170	3.78%	400	450	15	<5	<5
1239694	<5	120	4.22%	760	280	10	<5	<5
1239695	<5	110	4.40%	920	360	10	<5	<5
1239696	<5	110	3.88%	720	220	15	<5	<5
1239697	<5	130	4.96%	880	360	15	<5	<5
1239698	<5	170	4.98%	1200	400	10	<5	<5
1239699	<5	180	4.74%	900	450	15	<5	<5
1239700	<5	160	4.84%	980	500	15	<5	<5
1239701	<5	190	5.25%	1450	450	15	<5	<5
1239702	<5	130	5.15%	840	450	10	<5	<5
1239703	<5	150	4.60%	1050	550	10	<5	<5
1239704	<5	170	4.56%	700	650	15	<5	5
1239705	<5	170	5.90%	1000	450	15	<5	<5
1239706	<5	180	5.05%	1050	550	15	<5	<5
1239707	<5	180	5.25%	660	650	15	<5	5
1239708	<5	130	3.78%	700	800	10	5	5
1239709	<5	170	5.20%	840	450	15	5	5
1239710	<5	180	4.82%	760	500	20	5	5
1239711	<5	180	5.40%	800	550	15	10	5
1239712	<5	170	5.40%	720	500	15	5	5
1239713	<5	130	3.84%	520	450	15	5	5
1239714	<5	170	5.45%	800	450	15	5	5
1239715	<5	200	5.95%	980	500	15	<5	5
1239716	<5	180	5.90%	980	500	15	<5	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 517/88 Page I4

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239717	<5	170	5.50%	920	500	20	<5	5
1239718	<5	180	5.60%	820	450	20	<5	5
1239719	5	180	5.30%	780	550	15	<5	5
1239720	<5	170	5.35%	720	400	20	<5	5
1239721	5	180	5.55%	760	550	20	<5	5
1239722	5	200	5.70%	940	550	20	<5	5
1239723	<5	180	5.35%	760	550	15	<5	5
1239724	<5	170	5.55%	700	550	15	<5	5
1239725	<5	150	4.58%	580	550	10	<5	<5
1239726	<5	140	4.90%	700	360	5	<5	<5
1239727	<5	160	4.52%	640	550	10	<5	<5
1239728	<5	140	4.68%	740	450	10	<5	<5
1239729	<5	130	4.54%	600	600	10	<5	<5
1239730	<5	160	5.40%	800	400	10	5	<5
1239731	<5	150	5.35%	740	400	15	<5	<5
1239732	<5	160	4.98%	820	600	10	10	5
1239733	<5	170	4.42%	600	650	10	<5	<5
1239734	<5	180	5.10%	920	700	10	5	<5
1239735	<5	180	4.80%	860	600	15	<5	<5
1239736	<5	120	3.50%	450	500	10	<5	5
1239737	<5	150	4.54%	620	550	5	<5	<5
1239738	<5	170	5.25%	960	500	10	5	<5
1239739	<5	140	3.74%	480	650	15	<5	5
1239740	<5	140	4.28%	620	550	10	<5	5
1239741	<5	180	4.68%	700	600	10	<5	<5
1239742	<5	170	4.30%	580	600	5	<5	<5
1239743	<5	150	4.40%	620	600	10	<5	<5
1239744	<5	180	5.65%	1000	650	10	5	<5
1239745	<5	140	4.48%	640	500	10	<5	<5
1239746	<5	160	3.88%	520	600	10	<5	5
1239747	<5	140	4.10%	620	650	10	<5	<5
1239748	<5	140	4.02%	620	600	5	<5	<5
1239749	<5	140	4.06%	600	700	10	<5	<5
1239750	<5	190	5.10%	860	550	10	<5	<5
1239751	<5	150	4.12%	540	360	10	<5	<5
1239752	<5	150	5.75%	660	320	15	<5	<5
1239753	<5	150	5.10%	560	400	10	<5	<5
1239754	<5	180	5.45%	920	500	15	<5	<5
1239755	<5	120	4.56%	640	450	10	<5	<5
1239756	45	140	4.66%	500	400	10	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

00137

Analysis code ICP2 Report AC 517/88 Page I5

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239757	170	170	5.40%	560	550	10	<5	5
1239758	<5	180	5.50%	1100	450	15	<5	<5
1239759	<5	130	5.20%	660	240	15	<5	<5
1239760	<5	190	4.54%	640	550	10	<5	<5
1239761	<5	180	5.65%	1100	500	15	<5	<5
1239762	35	200	6.00%	840	550	15	<5	<5
1239763	<5	160	5.50%	700	450	15	<5	<5
1239764	<5	150	5.35%	860	550	15	<5	<5
1239765	<5	150	5.05%	940	400	10	<5	<5
1239766	<5	150	5.20%	440	280	15	<5	<5
1239767	<5	100	3.16%	440	300	10	<5	<5
1239768	<5	95	2.28%	270	100	10	<5	<5
1239769	<5	150	4.26%	540	500	10	<5	<5
1239770	<5	130	5.20%	860	400	15	<5	<5
1239771	<5	150	5.60%	1050	500	20	<5	<5
1239772	<5	130	5.90%	920	550	20	<5	<5
1239773	<5	160	5.70%	600	450	20	<5	5
1239774	<5	150	5.20%	720	400	15	<5	<5
1239775	<5	150	5.80%	720	450	15	<5	<5
1239776	<5	180	5.80%	960	550	15	<5	5
1239777	<5	160	5.40%	880	450	15	<5	5
1239778	<5	150	5.50%	820	550	15	<5	<5
1239779	<5	140	5.70%	760	650	20	<5	5
1239780	<5	150	5.90%	500	300	20	<5	5
1239781	<5	100	6.15%	640	320	15	<5	5
1239782	<5	150	5.55%	780	500	15	<5	5
1239783	<5	130	4.70%	540	450	15	<5	5
1239784	<5	160	5.40%	600	340	15	<5	5
1239785	<5	170	5.80%	720	340	20	<5	5
1239786	<5	170	4.52%	580	500	15	<5	5
1239787	<5	120	3.42%	380	450	15	<5	5
1239788	<5	170	5.95%	720	450	20	<5	5
1239789	<5	200	6.35%	700	600	20	<5	5
1239790	<5	170	7.10%	860	500	20	<5	<5
1239791	<5	200	5.70%	680	750	25	<5	<5
1239792	<5	160	6.15%	600	450	20	<5	<5
1239793	<5	200	5.85%	820	500	20	<5	<5
1239794	<5	200	5.45%	820	650	15	<5	<5
1239795	<5	140	5.60%	760	320	15	<5	<5
1239796	<5	150	5.80%	760	400	15	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I6

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1239797	<5	200	5.90%	860	500	20	<5	<5
1239798	<5	210	5.15%	660	900	15	<5	5
1239799	<5	230	6.65%	1000	700	20	<5	<5
1239800	<5	200	6.20%	1100	700	15	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I7

NATA Certificate Results in ppm

Sample	Sn	W
1239537	20	<5
1239538	20	<5
1239539	25	<5
1239540	25	<5
1239601	20	<5
1239602	25	<5
1239603	15	<5
1239604	30	<5
1239605	20	<5
1239606	20	<5
1239607	20	<5
1239608	20	<5
1239609	25	<5
1239610	20	<5
1239611	20	<5
1239612	20	<5
1239613	20	<5
1239614	25	5
1239615	25	5
1239616	30	10
1239617	25	5
1239618	25	5
1239619	25	<5
1239620	20	<5
1239621	20	<5
1239622	25	5
1239623	20	<5
1239624	15	<5
1239625	20	<5
1239626	20	<5
1239627	15	<5
1239628	20	<5
1239629	10	<5
1239630	10	<5
1239631	10	<5
1239632	15	<5
1239633	15	<5
1239634	15	<5
1239635	20	<5
1239636	10	<5
Detn limit	(5)	(5)

amdel

00140

Analysis code ICP2 Report AC 517/88 Page I8

NATA Certificate Results in ppm

Sample	Sn	W
1239637	15	<5
1239638	20	<5
1239639	20	<5
1239640	20	<5
1239641	15	<5
1239642	15	<5
1239643	15	<5
1239644	15	<5
1239645	20	<5
1239646	15	<5
1239647	15	<5
1239648	20	<5
1239649	15	<5
1239650	15	<5
1239651	15	<5
1239652	20	<5
1239653	15	<5
1239654	15	<5
1239655	15	<5
1239656	15	<5
1239657	15	<5
1239658	15	<5
1239659	15	<5
1239660	15	<5
1239661	15	<5
1239662	15	<5
1239663	20	<5
1239664	20	<5
1239665	20	<5
1239666	20	<5
1239667	15	<5
1239668	20	<5
1239669	15	<5
1239670	15	<5
1239671	20	<5
1239672	15	<5
1239673	20	<5
1239674	15	<5
1239675	15	<5
1239676	20	<5
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I9

NATA Certificate Results in ppm

Sample	Sn	W
1239677	20	<5
1239678	20	<5
1239679	20	<5
1239680	20	<5
1239681	15	<5
1239682	15	<5
1239683	15	<5
1239684	20	<5
1239685	20	<5
1239686	15	<5
1239687	15	<5
1239688	20	<5
1239689	15	<5
1239690	15	<5
1239691	20	<5
1239692	15	<5
1239693	15	<5
1239694	15	<5
1239695	15	<5
1239696	15	<5
1239697	15	<5
1239698	15	<5
1239699	15	<5
1239700	20	<5
1239701	20	<5
1239702	15	<5
1239703	15	<5
1239704	20	<5
1239705	20	<5
1239706	20	<5
1239707	15	<5
1239708	10	<5
1239709	15	<5
1239710	15	<5
1239711	15	<5
1239712	20	<5
1239713	15	<5
1239714	20	<5
1239715	20	<5
1239716	20	<5
Detn limit	(5)	(5)

amdel

00142

Analysis code ICP2 Report AC 517/88 Page I10

NATA Certificate Results in ppm

Sample	Sn	W
1239717	20	<5
1239718	20	<5
1239719	20	<5
1239720	20	<5
1239721	20	<5
1239722	20	<5
1239723	20	<5
1239724	20	<5
1239725	15	<5
1239726	15	<5
1239727	10	<5
1239728	15	<5
1239729	10	<5
1239730	15	<5
1239731	15	<5
1239732	15	<5
1239733	15	<5
1239734	15	<5
1239735	15	<5
1239736	10	<5
1239737	15	<5
1239738	15	<5
1239739	15	<5
1239740	15	<5
1239741	15	<5
1239742	10	<5
1239743	15	<5
1239744	15	<5
1239745	15	<5
1239746	15	<5
1239747	15	<5
1239748	15	<5
1239749	15	<5
1239750	15	<5
1239751	15	<5
1239752	20	<5
1239753	20	<5
1239754	20	<5
1239755	15	<5
1239756	10	<5
Detn limit	(5)	(5)

amdel

00143

Analysis code ICP2 Report AC 517/88 Page I11

NATA Certificate Results in ppm

Sample	Sn	W
1239757	15	<5
1239758	15	<5
1239759	20	<5
1239760	15	<5
1239761	20	<5
1239762	20	<5
1239763	20	<5
1239764	15	<5
1239765	15	<5
1239766	20	<5
1239767	10	<5
1239768	10	<5
1239769	15	<5
1239770	15	<5
1239771	20	<5
1239772	20	<5
1239773	20	<5
1239774	20	<5
1239775	20	<5
1239776	20	<5
1239777	20	<5
1239778	20	<5
1239779	20	<5
1239780	20	<5
1239781	20	<5
1239782	20	<5
1239783	15	<5
1239784	20	<5
1239785	20	<5
1239786	20	<5
1239787	15	<5
1239788	25	<5
1239789	25	<5
1239790	25	<5
1239791	25	<5
1239792	25	<5
1239793	20	<5
1239794	20	<5
1239795	20	<5
1239796	20	<5
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 517/88 Page I12

NATA Certificate Results in ppm

Sample	Sn	W
1239797	20	<5
1239798	20	<5
1239799	25	<5
1239800	20	<5
Detn limit	(5)	(5)

amdel

00145

Analysis code PM1/3SPE Report AC 517/88 Page G1

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239537	<2	18	37	37	<1	35	23
1239538	<2	14	40	30	<1	33	20
1239539	<2	19	42	33	<1	29	19
1239540	<2	17	42	31	<1	26	22
1239601	<2	18	41	34	<1	28	22
1239602	<2	15	41	33	<1	30	20
1239603	<2	9	35	23	<1	27	12
1239604	<2	10	41	26	<1	26	19
1239605	<2	13	41	28	<1	26	19
1239606	<2	11	38	23	<1	23	19
1239607	<2	12	41	27	<1	27	23
1239608	<2	12	42	23	<1	25	18
1239609	<2	11	41	26	<1	24	21
1239610	<2	12	42	25	<1	24	19
1239611	<2	14	42	28	1	29	20
1239612	<2	13	42	28	<1	30	22
1239613	<2	11	36	24	1	20	20
1239614	<2	11	42	26	<1	24	23
1239615	<2	12	42	26	<1	25	23
1239616	<2	14	41	26	<1	22	20
1239617	<2	11	41	29	<1	24	20
1239618	<2	13	43	29	<1	22	22
1239619	<2	9	59	29	1	27	18
1239620	<2	12	58	26	<1	27	21
1239621	<2	10	50	23	<1	20	19
1239622	<2	13	58	28	<1	23	19
1239623	<2	14	54	27	<1	23	21
1239624	<2	11	47	26	<1	19	24
1239625	<2	11	51	24	<1	22	23
1239626	<2	10	49	24	<1	21	18
1239627	<2	14	48	27	<1	23	25
1239628	<2	12	51	33	<1	29	26
1239629	<2	10	39	24	<1	22	22
1239630	<2	14	45	27	<1	30	19
1239631	<2	11	38	23	<1	20	18
1239632	<2	14	45	27	<1	23	22
1239633	<2	15	45	28	<1	23	20
1239634	<2	14	47	31	<1	28	19
1239635	<2	13	45	30	<1	23	16
1239636	<2	18	40	26	<1	26	16
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

00146

Analysis code PM1/3SPE Report AC 517/88 Page G2

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239637	<2	15	45	27	<1	26	21
1239638	<2	13	48	27	<1	22	18
1239639	<2	14	43	31	<1	24	14
1239640	<2	11	49	28	<1	24	14
1239641	<2	18	44	30	<1	25	17
1239642	<2	14	45	29	<1	24	15
1239643	<2	19	45	27	<1	29	18
1239644	<2	14	41	28	<1	25	19
1239645	<2	12	48	25	<1	22	18
1239646	<2	11	42	28	<1	21	17
1239647	<2	17	46	29	<1	25	19
1239648	<2	16	49	28	<1	24	20
1239649	<2	16	46	23	<1	26	19
1239650	<2	18	50	27	<1	24	19
1239651	<2	19	48	26	<1	25	20
1239652	<2	15	50	27	<1	26	21
1239653	<2	14	44	25	<1	22	18
1239654	<2	15	49	28	<1	27	19
1239655	<2	15	45	24	<1	29	19
1239656	<2	16	47	24	<1	23	20
1239657	<2	15	47	23	<1	22	18
1239658	<2	14	48	24	<1	24	16
1239659	<2	19	50	29	<1	28	20
1239660	<2	21	44	29	<1	26	20
1239661	<2	20	51	29	<1	30	26
1239662	<2	14	48	24	<1	24	21
1239663	<2	15	47	23	<1	25	19
1239664	<2	13	45	20	<1	19	16
1239665	<2	14	50	27	<1	25	20
1239666	<2	17	50	35	<1	26	21
1239667	<2	13	43	28	<1	23	18
1239668	<2	15	49	30	<1	27	20
1239669	<2	14	46	31	<1	31	15
1239670	<2	13	45	26	<1	25	20
1239671	<2	16	52	31	<1	30	20
1239672	<2	16	53	31	<1	33	24
1239673	<2	13	53	28	<1	25	19
1239674	<2	18	46	29	<1	31	23
1239675	<2	14	42	24	<1	26	19
1239676	<2	16	50	29	<1	25	18
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

00147

Analysis code PM1/3SPE Report AC 517/88 Page G3

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239677	<2	16	51	28	1	27	22
1239678	<2	16	50	30	<1	26	22
1239679	<2	17	47	31	<1	25	17
1239680	<2	18	51	32	<1	24	22
1239681	<2	13	42	30	<1	21	16
1239682	<2	16	49	29	<1	23	16
1239683	<2	18	46	29	<1	28	22
1239684	<2	13	51	28	<1	25	16
1239685	<2	12	47	32	<1	24	14
1239686	<2	17	48	53	<1	30	25
1239687	<2	12	43	26	<1	23	19
1239688	<2	14	47	27	<1	28	20
1239689	<2	21	50	34	<1	26	24
1239690	<2	14	47	32	<1	25	18
1239691	<2	15	51	29	<1	25	21
1239692	<2	13	47	23	<1	20	25
1239693	<2	11	43	21	<1	19	17
1239694	<2	14	43	25	<1	22	18
1239695	<2	14	39	25	<1	20	16
1239696	<2	14	46	26	1	21	19
1239697	<2	16	45	24	<1	20	18
1239698	<2	20	47	28	1	24	23
1239699	<2	14	42	25	<1	20	18
1239700	<2	18	47	25	<1	22	23
1239701	<2	22	45	29	<1	29	23
1239702	<2	13	39	27	<1	21	15
1239703	<2	15	40	22	<1	23	19
1239704	<2	12	36	25	<1	20	17
1239705	<2	15	42	28	<1	26	21
1239706	<2	14	37	22	<1	21	19
1239707	<2	13	47	29	<1	27	13
1239708	<2	9	37	22	<1	19	9
1239709	<2	14	48	28	<1	23	15
1239710	<2	11	40	27	<1	17	13
1239711	<2	12	43	26	<1	21	16
1239712	<2	12	48	31	<1	23	9
1239713	<2	12	40	29	<1	23	12
1239714	<2	11	48	31	<1	27	12
1239715	<2	12	46	27	<1	28	13
1239716	<2	11	42	23	<1	20	12
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

00148

Analysis code PM1/3SPE Report AC 517/88 Page G4

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239717	<2	13	46	32	<1	31	14
1239718	<2	11	47	25	<1	24	12
1239719	<2	11	45	30	<1	25	12
1239720	<2	13	43	30	<1	25	13
1239721	<2	12	46	30	1	29	15
1239722	<2	12	45	33	1	27	13
1239723	<2	11	43	26	<1	29	12
1239724	<2	12	45	33	<1	27	10
1239725	<2	11	52	36	<1	23	12
1239726	<2	10	57	36	<1	25	10
1239727	<2	9	44	33	<1	24	11
1239728	<2	10	57	23	<1	25	11
1239729	<2	10	48	25	<1	25	9
1239730	<2	10	54	26	<1	32	16
1239731	<2	10	49	30	<1	26	14
1239732	<2	12	49	33	<1	28	14
1239733	<2	8	43	28	<1	26	11
1239734	<2	12	52	29	<1	35	14
1239735	<2	11	49	23	<1	24	17
1239736	<2	8	36	23	<1	24	9
1239737	<2	11	51	25	<1	29	12
1239738	<2	9	49	27	<1	31	17
1239739	<2	6	37	23	<1	22	11
1239740	<2	9	45	28	<1	24	11
1239741	<2	8	45	26	<1	28	13
1239742	<2	7	42	23	<1	25	13
1239743	<2	9	40	22	<1	25	12
1239744	<2	10	45	24	<1	30	16
1239745	<2	9	39	25	<1	27	13
1239746	<2	9	36	26	<1	21	12
1239747	<2	8	40	27	<1	25	11
1239748	<2	8	36	24	<1	21	12
1239749	<2	8	36	23	<1	20	12
1239750	<2	11	43	25	<1	33	20
1239751	<2	11	37	29	<1	23	17
1239752	<2	10	43	27	<1	27	19
1239753	<2	9	37	23	<1	25	16
1239754	<2	13	39	24	<1	25	18
1239755	<2	11	36	20	<1	29	17
1239756	<2	9	29	36	<1	24	8
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

00149

Analysis code PM1/3SPE Report AC 517/88 Page G5

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239757	<2	9	32	74	<1	20	14
1239758	<2	12	38	29	<1	30	18
1239759	2	11	40	39	<1	26	13
1239760	<2	11	34	35	<1	18	12
1239761	<2	13	40	32	<1	28	17
1239762	<2	13	37	42	<1	25	13
1239763	<2	12	46	29	<1	24	18
1239764	<2	11	42	29	<1	21	17
1239765	<2	11	41	30	<1	21	9
1239766	<2	10	40	31	<1	25	11
1239767	<2	9	37	30	<1	23	10
1239768	<2	10	36	29	<1	23	10
1239769	<2	12	37	27	<1	22	13
1239770	<2	9	39	26	<1	25	14
1239771	<2	13	46	31	<1	28	13
1239772	<2	11	45	32	<1	30	15
1239773	<2	10	43	30	<1	27	12
1239774	<2	10	49	28	<1	24	15
1239775	<2	10	55	34	<1	27	14
1239776	<2	13	50	37	<1	27	15
1239777	<2	10	44	32	<1	24	17
1239778	<2	11	46	32	<1	27	16
1239779	<2	13	55	35	<1	35	18
1239780	<2	12	58	30	<1	36	14
1239781	<2	10	60	30	<1	31	14
1239782	<2	10	55	29	<1	36	12
1239783	<2	10	49	30	<1	52	10
1239784	<2	7	44	27	<1	28	11
1239785	<2	9	45	31	<1	28	11
1239786	<2	10	41	34	<1	33	9
1239787	<2	8	32	30	<1	26	12
1239788	<2	10	44	22	<1	28	14
1239789	<2	9	49	30	<1	28	15
1239790	<2	11	42	28	<1	30	12
1239791	<2	11	43	32	1	28	16
1239792	<2	9	46	27	<1	29	18
1239793	<2	10	44	26	<1	32	17
1239794	<2	11	46	27	<1	25	17
1239795	<2	6	41	21	<1	26	9
1239796	<2	9	48	31	<1	29	17
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

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00150

Analysis code PM1/3SPE Report AC 517/88 Page G6

NATA Certificate Results in ppm

Sample	Bi	Co	Cr	Cu	Mo	Ni	Pb
1239797	<2	10	41	36	1	29	17
1239798	<2	8	40	34	<1	24	15
1239799	<2	9	47	30	<1	32	22
1239800	<2	13	50	29	<1	31	19
Detn limit	(2)	(2)	(5)	(1)	(1)	(2)	(2)

amdel

00151

Analysis code PM1/3SPE Report AC 517/88 Page G7

NATA Certificate Results in ppm

Sample	Zn	Au
1239537	98	0.0075
1239538	86	0.0050
1239539	92	0.0050
1239540	87	0.0045
1239601	94	0.0065
1239602	90	0.0050
1239603	75	0.0050
1239604	77	0.0045
1239605	81	0.0040
1239606	72	0.0065
1239607	93	0.0045
1239608	78	0.0060
1239609	74	0.0055
1239610	76	0.0055
1239611	87	0.0055
1239612	79	0.0055
1239613	74	0.0060
1239614	78	0.0065
1239615	76	0.0050
1239616	75	0.0060
1239617	72	0.0060
1239618	81	0.0060
1239619	73	0.0055
1239620	83	0.0055
1239621	66	0.0055
1239622	78	0.0050
1239623	85	0.0050
1239624	75	0.0055
1239625	93	0.0060
1239626	71	0.0040
1239627	84	0.0040
1239628	94	0.0060
1239629	71	0.0045
1239630	71	0.0060
1239631	67	0.0045
1239632	75	0.0070
1239633	75	0.0050
1239634	76	0.0035
1239635	73	0.0050
1239636	71	0.0120
Detn limit	(2)	(.0005)

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Analysis code PM1/3SPE Report AC 517/88 Page G8

NATA Certificate Results in ppm

Sample	Zn	Au
1239637	80	0.0115
1239638	75	0.0120
1239639	75	0.0090
1239640	65	0.0085
1239641	65	0.0085
1239642	74	0.0085
1239643	73	0.0075
1239644	75	0.0085
1239645	73	0.0080
1239646	63	0.0095
1239647	76	0.0070
1239648	110	0.0065
1239649	83	0.0070
1239650	74	0.0065
1239651	76	0.0080
1239652	79	0.0080
1239653	82	0.0065
1239654	73	0.0080
1239655	68	0.0080
1239656	82	0.0075
1239657	86	0.0100
1239658	72	0.0105
1239659	80	0.0110
1239660	70	0.0100
1239661	90	0.0115
1239662	73	0.0110
1239663	77	0.0095
1239664	77	0.0090
1239665	81	0.0105
1239666	79	0.0110
1239667	66	0.0110
1239668	96	0.0140
1239669	95	0.0120
1239670	100	0.0130
1239671	85	0.0095
1239672	100	0.0085
1239673	79	0.0105
1239674	92	0.0105
1239675	97	0.0100
1239676	85	0.0085
Detn limit	(2)	(.0005)

Analysis code PM1/3SPE Report AC 517/88 Page G9

NATA Certificate Results in ppm

Sample	Zn	Au
1239677	94	0.0080
1239678	80	0.0090
1239679	80	0.0065
1239680	87	0.0070
1239681	65	0.0050
1239682	79	0.0060
1239683	89	0.0065
1239684	75	0.0060
1239685	86	0.0045
1239686	93	0.0065
1239687	84	0.0050
1239688	83	0.0055
1239689	89	0.0060
1239690	90	0.0055
1239691	84	0.0070
1239692	80	0.0055
1239693	71	0.0055
1239694	72	0.0045
1239695	64	0.0045
1239696	64	0.0055
1239697	73	0.0055
1239698	86	0.0060
1239699	80	0.0040
1239700	86	0.0045
1239701	85	0.0050
1239702	79	0.0045
1239703	89	0.0050
1239704	71	0.0050
1239705	72	0.0050
1239706	75	0.0055
1239707	88	0.0045
1239708	64	0.0050
1239709	81	0.0045
1239710	75	0.0045
1239711	78	0.0040
1239712	85	0.0035
1239713	73	0.0040
1239714	84	0.0045
1239715	82	0.0040
1239716	74	0.0030
Detn limit	(2)	(.0005)

Analysis code PM1/3SPE Report AC 517/88 Page G10

NATA Certificate Results in ppm

Sample	Zn	Au
1239717	73	0.0090
1239718	73	0.0055
1239719	73	0.0070
1239720	75	0.0055
1239721	78	0.0090
1239722	78	0.0070
1239723	69	0.0060
1239724	77	0.0050
1239725	69	0.0060
1239726	72	0.0045
1239727	66	0.0060
1239728	74	0.0045
1239729	67	0.0055
1239730	80	0.0045
1239731	71	0.0050
1239732	82	0.0070
1239733	65	0.0070
1239734	82	0.0055
1239735	73	0.0065
1239736	49	0.0025
1239737	70	0.0055
1239738	81	0.0040
1239739	58	0.0040
1239740	64	0.0040
1239741	67	0.0030
1239742	65	0.0040
1239743	69	0.0020
1239744	80	0.0010
1239745	72	0.0025
1239746	61	0.0015
1239747	69	0.0025
1239748	62	0.0020
1239749	65	0.0020
1239750	84	0.0020
1239751	68	0.0020
1239752	74	0.0035
1239753	71	0.0065
1239754	80	0.0035
1239755	65	0.0020
1239756	47	0.1800
Detn limit	(2)	(.0005)

Analysis code PM1/3SPE Report AC 517/88 Page G11

NATA Certificate Results in ppm

Sample	Zn	Au
1239757	52	0.6400
1239758	66	0.0075
1239759	56	0.0185
1239760	65	0.0110
1239761	70	0.0075
1239762	73	0.0350
1239763	73	0.0070
1239764	73	0.0060
1239765	63	0.0035
1239766	55	0.0055
1239767	60	0.0030
1239768	50	0.0030
1239769	54	0.0035
1239770	61	0.0025
1239771	64	0.0030
1239772	64	0.0035
1239773	69	0.0040
1239774	58	0.0035
1239775	62	0.0040
1239776	74	0.0035
1239777	65	0.0030
1239778	70	0.0035
1239779	94	0.0040
1239780	86	0.0055
1239781	83	0.0040
1239782	86	0.0035
1239783	65	0.0040
1239784	62	0.0035
1239785	63	0.0040
1239786	63	0.0030
1239787	64	0.0025
1239788	70	0.0035
1239789	67	0.0040
1239790	70	0.0035
1239791	67	0.0045
1239792	68	0.0035
1239793	72	0.0035
1239794	120	0.0050
1239795	56	0.0035
1239796	71	0.0030
Detn limit	(2)	(.0005)

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Analysis code PM1/3SPE Report AC 517/88 Page G12

NATA Certificate Results in ppm

Sample	Zn	Au
1239797	67	0.0085
1239798	64	0.0060
1239799	84	0.0055
1239800	82	0.0050
Detn limit	(2)	(.0005)

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technology and enterprise

NATA CERTIFICATE

Amdel
31 Flemington Street,
Frewville, S.A. 5063

Telephone: (08) 372 2700

Address all correspondence to:
P.O. Box 114,
Eastwood, S.A. 5063

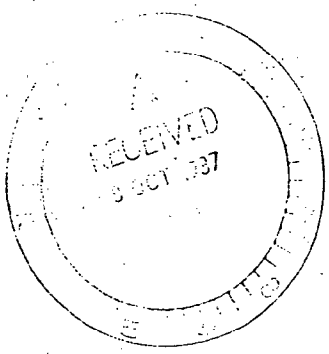
Telex: AA82520
Facsimile: (08) 79 6623

Amdel Limited-Inc in S.A.

00157

5 October 1987

Mr B Murrell
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609



REPORT AC 765/88

YOUR REFERENCE: DPO 46560

REPORT COMPRISING: Cover sheet
Page G1-G14
Page I1-I14

DATE RECEIVED: 9 September 1987

Approved Signatory: Trevor Francis

Manager, Geo-Analytical Services Don Patterson

for Dr William G. Spencer
General Manager
Applied Sciences Group

cc Mr W H Johnston
CRA Exploration Pty Ltd
31 Osmond Tce.
NORWOOD SA 5067

cc Chief Geologist Information Services
CRA Exploration Pty Ltd
PO Box 656
FYSHWICK ACT 2609

The report relates specifically to the sample tested and also the entire batch in so far as the sample is truly representative of the sample source.

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Analysis code PM1/3SPEC Report AC 765/88 Page G1

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449001	<1	31	13	85	0.0080
1449002	<1	27	11	70	0.0030
1449003	2	27	13	64	0.0035
1449004	<1	25	11	77	0.0065
1449005	<1	28	12	83	0.0035
1449006	<1	28	12	84	0.0025
1449007	<1	26	9	69	0.0025
1449008	1	34	11	84	0.0015
1449009	<1	32	11	78	0.0015
1449010	1	39	11	86	0.0040
1449011	2	34	11	84	0.0010
1449012	1	36	16	100	0.0015
1449013	3	39	13	93	0.0005
1449014	2	30	10	92	0.0015
1449015	3	28	13	79	0.0015
1449016	<1	29	11	78	0.0010
1449017	<1	28	13	89	0.0010
1449018	<1	29	13	87	<0.0005
1449019	<1	26	10	76	0.0015
1449020	<1	31	14	91	0.0010
1449021	<1	30	15	90	<0.0005
1449022	<1	30	8	73	0.0010
1449023	1	31	11	87	<0.0005
1449024	<1	25	11	71	0.0005
1449025	3	26	9	74	0.0020
1449026	3	26	9	72	0.0025
1449027	4	24	8	76	<0.0005
1449028	<1	31	10	81	0.0020
1449029	<1	23	12	65	<0.0005
1449030	<1	27	12	78	<0.0005
1449031	<1	28	14	87	<0.0005
1449032	<1	28	8	75	0.0010
1449033	<1	21	14	59	<0.0005
1449034	<1	29	8	75	<0.0005
1449035	<1	26	11	68	<0.0005
1449036	<1	23	12	69	0.0040
1449037	<1	26	11	72	0.0025
1449038	<1	30	12	87	0.0005
1449039	<1	26	15	84	<0.0005
1449040	<1	27	10	74	<0.0005
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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Analysis code PM1/3SPEC Report AC 765/88 Page G2

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449041	4	33	17	86	0.0010
1449042	3	34	17	91	0.0010
1449043	4	23	12	68	0.0010
1449044	3	28	13	79	<0.0005
1449045	2	31	15	90	<0.0005
1449046	<1	28	14	87	0.0010
1449047	1	26	17	81	<0.0005
1449048	<1	28	13	82	0.0010
1449049	<1	28	13	87	<0.0005
1449050	<1	28	9	75	0.0010
1449051	<1	28	11	83	<0.0005
1449052	<1	28	11	79	0.0010
1449053	<1	27	11	77	0.0020
1449054	2	26	11	76	0.0010
1449055	4	27	11	83	0.0010
1449056	1	29	10	83	<0.0005
1449057	4	27	11	80	<0.0005
1449059	<1	25	7	76	0.0030
1449060	<1	26	9	87	<0.0005
1449061	<1	25	8	80	0.0010
1449062	<1	29	12	68	<0.0005
1449063	1	32	15	91	<0.0005
1449064	<1	31	10	87	0.0015
1449065	1	28	11	87	0.0020
1449066	<1	24	10	70	0.0010
1449067	<1	21	9	64	0.0020
1449068	2	23	7	58	0.0010
1449069	<1	22	10	65	0.0025
1449070	1	19	6	58	0.0040
1449071	2	19	8	60	<0.0005
1449072	2	30	16	110	0.0020
1449073	1	27	10	83	0.0010
1449074	2	25	9	75	0.0025
1449075	3	30	11	88	0.0025
1449076	<1	36	14	100	<0.0005
1449077	<1	20	6	61	0.0025
1449078	<1	30	12	97	<0.0005
1449079	<1	35	22	115	0.0005
1449080	2	27	9	81	<0.0005
1449081	<1	30	10	84	0.0020
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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00160

Analysis code PM1/3SPEC Report AC 765/88 Page G3

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449082	<1	33	15	92	<0.0005
1449083	<1	37	11	105	0.0010
1449084	2	31	33	120	0.0005
1449085	<1	27	19	110	0.0010
1449086	<1	32	12	94	<0.0005
1449087	<1	33	15	105	<0.0005
1449088	1	29	15	91	0.0010
1449089	2	29	17	99	<0.0005
1449090	1	30	13	96	0.0015
1449091	<1	32	13	93	<0.0005
1449092	<1	33	16	105	0.0025
1449093	<1	25	9	82	0.0020
1449094	<1	34	29	100	0.0005
1449095	<1	29	11	94	0.0020
1449096	<1	32	12	97	0.0045
1449097	<1	19	15	50	0.0020
1449098	<1	30	25	70	0.0015
1449099	<1	32	15	87	<0.0005
1449100	<1	36	17	88	0.0025
1449101	1	35	17	100	0.0045
1449102	<1	35	21	100	0.0015
1449103	1	32	16	90	0.0010
1449104	<1	26	15	78	0.0025
1449105	<1	27	13	79	0.0015
1449106	<1	32	14	88	0.0085
1449107	<1	33	12	98	0.0025
1449108	3	28	14	74	0.0020
1449109	1	32	16	96	0.0015
1449110	<1	34	13	93	0.0025
1449111	<1	29	11	83	<0.0005
1449112	<1	31	16	91	<0.0005
1449113	1	30	11	90	<0.0005
1449114	1	44	6	100	0.0010
1449115	2	26	8	67	<0.0005
1449116	<1	32	13	91	0.0020
1449117	<1	32	9	90	0.0015
1449118	2	31	13	95	<0.0005
1449119	<1	32	9	88	<0.0005
1449120	1	37	15	95	0.0005
1449121	<1	34	12	96	0.0010
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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Analysis code PM1/3SPEC Report AC 765/88 Page G4

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449122	<1	28	14	92	<0.0005
1449123	3	32	14	99	<0.0005
1449124	1	36	12	92	<0.0005
1449125	<1	28	10	80	0.0010
1449221	1	33	13	79	0.0020
1449222	2	34	14	78	0.0010
1449223	1	34	12	76	0.0015
1449224	<1	14	<2	30	<0.0005
1449225	<1	22	13	57	0.0045
1449226	2	33	16	76	0.0060
1449227	2	29	13	66	0.0055
1449228	1	29	11	63	0.0040
1449229	2	29	17	59	0.0070
1449230	1	29	16	60	0.0030
1449231	2	31	21	64	0.0015
1449232	<1	33	17	79	0.0035
1449233	<1	33	17	76	0.0025
1449234	1	31	17	63	0.0015
1449235	1	30	15	73	0.0015
1449236	2	35	18	81	0.0010
1449237	3	30	15	66	<0.0005
1449238	2	32	18	78	0.0010
1449239	2	35	15	77	0.0010
1449240	2	34	8	79	0.0025
1449241	<1	41	9	92	0.0020
1449242	1	37	9	95	0.0005
1449243	<1	35	7	87	0.0010
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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Analysis code PM1/3SPEC Report AC 765/88 Page G7

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Mo	Ni	Pb	Zn	Au
1449244	3	34	10	81	0.0060
1449245	3	38	13	88	0.0025
1449246	3	29	6	71	0.0030
1449247	3	41	10	96	0.0030
1449248	3	31	10	89	0.0035
1449249	4	31	11	84	0.0045
1449250	3	29	13	86	0.0080
1449251	2	30	17	82	0.0070
1449252	2	29	10	74	0.0050
1449253	2	32	10	88	0.0040
1449254	2	37	14	86	0.0055
1449255	3	38	14	87	0.0045
1449256	4	36	15	83	0.0025
1449257	3	39	14	91	0.0055
1449258	3	30	12	78	0.0015
1449259	3	30	11	74	<0.0005
1449260	4	44	13	99	0.0020
1449261	3	36	19	94	0.0010
1449262	2	28	12	73	0.0025
1449263	1	29	13	79	0.0025
Detn limit	(1)	(2)	(2)	(2)	(.0005)

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00163

Analysis code PM1/3SPEC Report AC 765/88 Page G8

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449001	<1	<2	18	33	34
1449002	<1	<2	16	29	32
1449003	<1	<2	17	32	30
1449004	<1	<2	15	35	29
1449005	<1	<2	16	32	31
1449006	<1	<2	16	30	31
1449007	<1	<2	13	30	29
1449008	<1	<2	14	39	32
1449009	<1	<2	17	34	29
1449010	<1	<2	17	36	31
1449011	<1	<2	17	39	32
1449012	<1	<2	19	39	33
1449013	<1	<2	20	38	33
1449014	<1	<2	17	36	33
1449015	<1	2	17	36	29
1449016	<1	<2	16	34	27
1449017	<1	<2	18	37	28
1449018	<1	<2	17	36	28
1449019	<1	<2	15	31	28
1449020	<1	<2	18	35	31
1449021	<1	<2	20	37	29
1449022	<1	<2	20	39	33
1449023	<1	<2	19	38	31
1449024	<1	<2	18	30	24
1449025	<1	<2	16	30	29
1449026	<1	<2	16	29	29
1449027	<1	<2	14	25	26
1449028	<1	<2	18	32	30
1449029	<1	<2	15	25	25
1449030	<1	<2	19	30	28
1449031	<1	<2	20	30	28
1449032	<1	<2	15	29	31
1449033	<1	<2	15	24	23
1449034	<1	<2	24	23	28
1449035	<1	<2	21	25	28
1449036	<1	<2	16	23	30
1449037	<1	<2	17	28	30
1449038	<1	2	21	27	31
1449039	<1	<2	17	26	27
1449040	<1	<2	16	27	32
Detn limit	(1)	(2)	(2)	(5)	(1)

amdel

Analysis code PM1/3SPEC Report AC 765/88 Page G9

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449041	<1	<2	26	33	35
1449042	<1	<2	24	35	36
1449043	<1	<2	14	23	25
1449044	<1	<2	15	30	33
1449045	<1	<2	20	31	31
1449046	<1	<2	17	29	30
1449047	<1	<2	18	27	28
1449048	<1	<2	17	29	28
1449049	<1	<2	16	29	28
1449050	<1	<2	16	26	26
1449051	<1	<2	16	28	27
1449052	<1	<2	17	26	28
1449053	<1	<2	16	27	28
1449054	<1	<2	16	26	26
1449055	<1	<2	15	28	26
1449056	<1	2	15	31	28
1449057	<1	<2	16	28	26
1449059	<1	<2	14	25	28
1449060	<1	<2	17	25	27
1449061	<1	<2	14	25	22
1449062	<1	<2	22	26	25
1449063	<1	<2	22	31	31
1449064	<1	<2	15	33	30
1449065	<1	<2	17	26	30
1449066	<1	<2	15	20	27
1449067	<1	<2	15	17	27
1449068	<1	<2	14	20	25
1449069	<1	<2	15	18	27
1449070	<1	<2	12	16	24
1449071	<1	<2	13	17	24
1449072	<1	<2	21	29	30
1449073	<1	<2	17	23	27
1449074	<1	<2	16	24	27
1449075	<1	<2	18	28	31
1449076	<1	<2	22	35	32
1449077	<1	<2	12	18	23
1449078	<1	<2	19	25	31
1449079	<1	<2	22	25	33
1449080	<1	<2	16	24	27
1449081	<1	<2	16	23	27
Detn limit	(1)	(2)	(2)	(5)	(1)

amdel

00165

Analysis code PM1/3SPEC Report AC 765/88 Page G10

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449082	<1	<2	18	27	31
1449083	<1	<2	20	30	30
1449084	<1	<2	24	25	37
1449085	<1	<2	19	30	36
1449086	<1	<2	22	39	37
1449087	<1	<2	22	41	32
1449088	<1	<2	19	29	32
1449089	<1	<2	20	29	33
1449090	<1	<2	22	31	33
1449091	<1	<2	18	32	32
1449092	<1	<2	20	35	30
1449093	<1	<2	16	30	26
1449094	<1	<2	23	33	32
1449095	<1	<2	20	26	28
1449096	<1	<2	19	31	30
1449097	<1	<2	14	16	24
1449098	<1	<2	23	22	30
1449099	<1	3	20	20	32
1449100	<1	<2	11	25	30
1449101	<1	<2	23	21	35
1449102	<1	<2	25	23	32
1449103	<1	<2	24	25	28
1449104	<1	<2	21	22	25
1449105	<1	<2	18	22	28
1449106	<1	<2	21	25	30
1449107	<1	<2	19	23	30
1449108	<1	<2	18	22	29
1449109	<1	<2	20	27	29
1449110	<1	<2	20	25	32
1449111	<1	<2	19	21	30
1449112	<1	<2	21	24	30
1449113	<1	<2	18	24	30
1449114	<1	<2	18	17	22
1449115	<1	<2	14	20	26
1449116	<1	<2	17	25	29
1449117	<1	<2	17	27	32
1449118	<1	<2	16	25	28
1449119	<1	<2	17	27	25
1449120	<1	<2	20	28	27
1449121	<1	<2	18	24	27
Detn limit	(1)	(2)	(2)	(5)	(1)

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Analysis code PM1/3SPEC Report AC 765/88 Page G11

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449122	<1	<2	17	24	28
1449123	<1	<2	20	24	26
1449124	<1	<2	22	24	28
1449125	<1	<2	17	24	28
1449221	<1	<2	14	19	29
1449222	<1	<2	15	20	26
1449223	<1	<2	14	19	24
1449224	<1	<2	5	7	8
1449225	<1	<2	9	14	15
1449226	<1	<2	17	25	27
1449227	<1	<2	15	23	24
1449228	<1	<2	16	20	23
1449229	<1	<2	18	25	29
1449230	<1	<2	20	27	25
1449231	<1	<2	22	26	31
1449232	<1	<2	20	28	30
1449233	<1	<2	21	27	32
1449234	<1	<2	19	27	29
1449235	<1	<2	18	24	28
1449236	<1	<2	25	28	31
1449237	<1	<2	19	23	25
1449238	<1	<2	18	29	31
1449239	<1	<2	20	27	29
1449240	<1	<2	15	24	26
1449241	<1	<2	16	28	31
1449242	<1	<2	15	26	28
1449243	<1	3	14	24	24
Detn limit	(1)	(2)	(2)	(5)	(1)

Analysis code PM1/3SPEC Report AC 765/88 Page G14

NATA Certificate Order No. DPO 46560 Results in ppm

Sample	Ag	Bi	Co	Cr	Cu
1449244	<1	<2	15	24	23
1449245	<1	<2	17	28	26
1449246	<1	<2	13	23	19
1449247	<1	<2	18	23	29
1449248	<1	<2	17	22	24
1449249	<1	<2	16	22	26
1449250	<1	<2	16	23	22
1449251	<1	<2	16	21	25
1449252	<1	<2	15	19	28
1449253	<1	<2	16	21	33
1449254	<1	<2	20	26	35
1449255	<1	<2	21	22	33
1449256	<1	<2	22	22	30
1449257	<1	<2	24	22	35
1449258	<1	<2	17	23	29
1449259	<1	<2	15	22	24
1449260	<1	3	31	25	38
1449261	<1	<2	21	26	28
1449262	<1	<2	16	24	20
1449263	<1	<2	18	27	23
Detn limit	(1)	(2)	(2)	(5)	(1)

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00168

Analysis code ICP2 Report AC 765/88 Page 11

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449001	5	250	7.40%	1050	1050	25	<5	5
1449002	5	180	4.76%	800	550	15	<5	5
1449003	5	150	6.70%	960	450	20	<5	<5
1449004	5	110	6.40%	780	320	25	<5	<5
1449005	5	260	6.20%	920	850	25	<5	5
1449006	5	220	5.55%	920	850	20	<5	<5
1449007	5	180	5.30%	600	450	25	<5	5
1449008	5	190	7.45%	800	500	30	<5	<5
1449009	5	240	6.10%	1000	650	20	<5	<5
1449010	<5	180	6.95%	740	500	25	<5	<5
1449011	<5	210	7.20%	920	500	25	<5	<5
1449012	<5	240	7.60%	1250	1050	25	<5	<5
1449013	5	270	7.70%	1150	750	25	<5	<5
1449014	5	160	6.40%	860	550	25	<5	5
1449015	5	250	7.00%	960	550	20	<5	<5
1449016	5	220	6.60%	800	450	25	<5	<5
1449017	5	210	6.95%	1250	600	20	<5	<5
1449018	5	210	7.00%	1100	500	20	<5	<5
1449019	10	210	6.10%	660	500	25	<5	<5
1449020	5	220	6.70%	1100	850	20	<5	<5
1449021	5	210	6.95%	1250	650	30	<5	<5
1449022	10	200	7.30%	800	450	25	<5	<5
1449023	5	180	7.50%	1050	550	25	<5	<5
1449024	<5	110	4.44%	900	320	15	<5	<5
1449025	5	230	5.10%	820	550	20	<5	5
1449026	5	140	3.72%	620	360	20	<5	10
1449027	5	200	5.50%	880	500	20	<5	<5
1449028	5	140	7.05%	1000	500	20	<5	<5
1449029	10	210	5.70%	1050	600	25	<5	<5
1449030	5	180	7.25%	1250	700	25	<5	<5
1449031	5	220	6.95%	1300	650	25	<5	<5
1449032	10	340	6.35%	620	550	25	<5	5
1449033	10	180	5.00%	800	550	15	<5	<5
1449034	15	230	4.84%	620	500	15	<5	5
1449035	10	240	7.60%	1600	700	25	<5	<5
1449036	10	270	5.45%	900	950	25	<5	5
1449037	10	160	6.75%	720	320	30	<5	5
1449038	10	210	7.05%	1300	600	25	<5	<5
1449039	10	240	6.15%	1000	850	30	<5	5
1449040	10	180	7.75%	900	550	30	<5	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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00169

Analysis code ICP2 Report AC 765/88 Page I2

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449041	15	230	8.85%	1500	700	35	<5	5
1449042	15	240	9.95%	1450	1000	40	<5	5
1449043	10	210	5.60%	660	700	25	<5	5
1449044	10	150	8.15%	820	550	30	<5	<5
1449045	10	220	7.10%	1200	700	30	<5	<5
1449046	10	270	6.85%	920	750	30	<5	5
1449047	10	210	7.20%	1000	650	30	<5	<5
1449048	10	220	7.85%	920	600	35	<5	5
1449049	15	240	8.65%	940	800	40	<5	5
1449050	15	250	6.45%	700	600	40	<5	10
1449051	10	260	7.40%	820	500	35	<5	5
1449052	15	240	6.40%	880	650	30	<5	10
1449053	15	210	6.40%	780	500	30	<5	5
1449054	15	190	5.95%	720	450	30	<5	5
1449055	10	180	5.50%	640	450	30	<5	5
1449056	10	180	7.25%	660	400	35	<5	5
1449057	10	210	5.65%	700	500	30	<5	5
1449059	10	170	4.72%	620	600	20	<5	5
1449060	10	190	4.92%	700	650	20	<5	<5
1449061	10	160	4.82%	440	450	20	<5	<5
1449062	10	170	5.20%	760	340	20	<5	<5
1449063	10	200	6.55%	1050	500	20	<5	<5
1449064	15	140	7.15%	520	340	25	<5	<5
1449065	15	160	5.25%	660	600	25	<5	5
1449066	10	150	4.28%	660	500	15	<5	<5
1449067	10	190	3.64%	460	400	15	<5	<5
1449068	<5	180	4.18%	600	450	20	55	<5
1449069	<5	160	3.78%	680	550	15	50	<5
1449070	<5	170	3.20%	440	450	20	45	<5
1449071	<5	140	3.46%	500	500	20	45	<5
1449072	<5	220	5.90%	1050	750	30	75	<5
1449073	<5	160	4.62%	760	600	25	60	<5
1449074	<5	160	4.50%	560	500	25	55	<5
1449075	<5	160	5.65%	760	400	30	65	<5
1449076	<5	170	6.55%	1000	550	30	80	<5
1449077	<5	220	3.14%	410	500	20	40	<5
1449078	<5	200	5.40%	900	650	30	65	<5
1449079	<5	130	3.98%	700	550	20	55	<5
1449080	<5	150	4.48%	660	650	25	55	<5
1449081	<5	140	4.44%	540	550	20	55	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

Analysis code ICP2 Report AC 765/88 Page I3

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449082	<5	90	5.75%	720	300	25	65	<5
1449083	<5	120	5.15%	800	500	25	65	<5
1449084	<5	190	6.10%	1350	600	25	80	<5
1449085	<5	210	5.65%	1100	700	25	75	<5
1449086	<5	180	5.95%	1000	550	30	75	<5
1449087	<5	230	6.20%	1200	700	30	75	<5
1449088	<5	200	5.05%	1200	650	20	65	<5
1449089	<5	180	5.85%	1300	500	25	80	<5
1449090	<5	180	5.75%	1000	500	30	75	<5
1449091	<5	160	5.95%	760	320	30	75	<5
1449092	<5	200	5.70%	900	600	30	70	<5
1449093	<5	220	4.58%	660	700	30	60	<5
1449094	<5	200	6.40%	1200	500	30	80	<5
1449095	<5	170	4.64%	660	650	25	60	<5
1449096	<5	210	5.70%	800	500	25	70	<5
1449097	<5	170	2.86%	540	320	10	40	<5
1449098	<5	120	5.10%	840	450	20	75	<5
1449099	<5	120	4.56%	920	600	20	55	<5
1449100	<5	180	4.78%	760	400	15	65	<5
1449101	<5	150	5.00%	1250	1600	20	60	<5
1449102	<5	190	5.50%	1250	650	20	65	<5
1449103	<5	170	5.50%	940	280	20	70	<5
1449104	<5	160	4.44%	640	400	20	55	<5
1449105	<5	130	4.02%	620	360	20	50	<5
1449106	<5	150	4.50%	540	500	20	55	<5
1449107	<5	120	4.44%	520	550	20	50	<5
1449108	<5	130	4.04%	620	400	20	55	<5
1449109	<5	200	5.15%	580	450	30	65	<5
1449110	<5	140	4.80%	560	360	30	60	<5
1449111	<5	150	4.10%	740	600	20	60	<5
1449112	<5	150	4.78%	860	650	30	65	<5
1449113	<5	150	4.40%	740	900	25	60	<5
1449114	<5	130	3.18%	620	700	20	40	<5
1449115	5	140	3.62%	500	650	20	45	<5
1449116	10	150	4.52%	620	550	20	60	<5
1449117	<5	170	4.94%	660	700	25	70	<5
1449118	<5	160	4.76%	700	750	20	65	<5
1449119	<5	140	4.54%	720	600	20	65	<5
1449120	<5	210	5.55%	1000	650	20	75	<5
1449121	<5	170	5.25%	880	700	20	70	<5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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Analysis code ICP2 Report AC 765/88 Page I4

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449122	<5	160	4.62%	800	650	20	70	<5
1449123	<5	160	4.96%	880	700	20	70	<5
1449124	<5	150	4.80%	900	600	25	70	<5
1449125	<5	140	4.16%	680	550	25	65	<5
1449221	5	140	3.54%	840	450	15	<5	5
1449222	5	150	3.58%	760	380	20	<5	5
1449223	10	150	3.88%	1000	500	20	<5	5
1449224	5	50	1.20%	270	240	10	<5	<5
1449225	5	120	2.40%	600	340	15	<5	<5
1449226	5	170	4.34%	800	340	20	<5	5
1449227	5	170	3.74%	620	450	20	<5	5
1449228	10	200	5.00%	880	500	10	65	10
1449229	10	210	6.25%	1000	360	20	95	10
1449230	10	200	7.35%	1100	380	15	95	<5
1449231	10	210	6.70%	1250	400	15	100	5
1449232	10	230	7.40%	1050	340	20	100	<5
1449233	15	210	7.15%	1100	450	20	100	5
1449234	10	150	6.75%	780	300	15	85	<5
1449235	10	190	5.80%	840	400	15	85	10
1449236	10	160	6.35%	1250	400	15	90	<5
1449237	5	150	5.45%	880	320	10	75	5
1449238	15	190	7.20%	880	340	25	100	5
1449239	10	180	6.05%	960	340	15	90	<5
1449240	10	200	5.40%	680	500	20	80	10
1449241	15	160	5.95%	900	450	15	80	5
1449242	10	160	4.98%	680	600	20	80	10
1449243	10	150	5.25%	600	700	10	75	10
1449244	10	160	5.20%	700	500	15	80	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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00172

Analysis code ICP2 Report AC 765/88 Page 17

NATA Certificate Results in ppm

Sample	As	Ba	Fe	Mn	P	Sb	La	Nb
1449245	10	180	6.15%	800	280	25	85	5
1449246	5	170	4.40%	560	500	15	60	15
1449247	10	210	4.48%	980	800	15	70	15
1449248	5	210	4.46%	940	750	15	70	15
1449249	5	210	4.48%	1000	750	20	70	25
1449250	10	210	4.60%	940	600	25	80	20
1449251	5	230	4.40%	1600	550	20	70	20
1449252	5	180	3.60%	920	450	15	55	20
1449253	5	190	4.06%	860	550	15	70	10
1449254	10	210	6.25%	1050	380	25	90	5
1449255	10	200	5.65%	1200	380	20	80	5
1449256	10	170	5.80%	1450	500	15	90	<5
1449257	10	250	6.15%	1800	550	15	85	<5
1449258	10	170	4.76%	660	650	20	75	15
1449259	10	150	5.00%	660	600	25	80	15
1449260	10	180	5.95%	1150	600	20	95	<5
1449261	5	180	6.40%	920	360	20	95	<5
1449262	10	220	6.55%	680	320	20	90	5
1449263	5	150	1.98%	360	220	5	50	5
Detn limit	(5)	(5)	(50)	(5)	(50)	(5)	(5)	(5)

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00173

Analysis code ICP2 Report AC 765/88

NATA Certificate

Sample	Sn	W
1449001	15	10
1449002	10	15
1449003	15	10
1449004	20	5
1449005	15	10
1449006	15	15
1449007	15	10
1449008	20	10
1449009	15	10
1449010	15	10
1449011	20	15
1449012	20	10
1449013	20	10
1449014	15	20
1449015	15	10
1449016	20	10
1449017	15	10
1449018	15	15
1449019	15	10
1449020	20	10
1449021	20	10
1449022	15	10
1449023	20	10
1449024	10	5
1449025	15	15
1449026	10	20
1449027	15	10
1449028	15	10
1449029	15	20
1449030	15	15
1449031	15	15
1449032	20	15
1449033	10	20
1449034	10	20
1449035	15	15
1449036	15	20
1449037	20	20
1449038	20	15
1449039	20	20
1449040	20	15
Detn limit	(5)	(5)

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Analysis C

NATA Certi

Sample
1449122
1449123
1449124
1449125
1449221
1449222
1449223
1449224
1449225
1449226
1449227
1449228
1449229
1449230
1449231
1449232
1449233
1449234
1449235
1449236
1449237
1449238
1449239
1449240
1449241
1449242
1449243
1449244
Detn lim

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Analysis code ICP

NATA Certific e

Sample

1449041 5
1449042
1449043 5
1449044 0
1449045
1449046 0
1449047 0
1449048 5
1449049
1449050 0
1449051 5
1449052
1449053 0
1449054 0
1449055
1449056 0
1449057 0
1449059 5
1449060
1449061 5
1449062 5
1449063
1449064 0
1449065 5
1449066 0
1449067
1449068 5
1449069 5
1449070
1449071 5
1449072 5
1449073
1449074 0
1449075 5
1449076 5
1449077
1449078 5
1449079 5
1449080
1449081 0

Detn limit 5

amdel

Analysis code ICP2 Report AC 765/88

NATA Certificate

Sample	Sn	W
1449122	<5	80
1449123	<5	85
1449124	<5	85
1449125	<5	80
1449221	10	15
1449222	10	15
1449223	10	20
1449224	<5	10
1449225	5	15
1449226	10	15
1449227	10	15
1449228	15	15
1449229	20	20
1449230	20	20
1449231	20	25
1449232	25	20
1449233	25	25
1449234	20	15
1449235	15	20
1449236	20	20
1449237	15	20
1449238	25	25
1449239	20	20
1449240	20	25
1449241	20	20
1449242	20	25
1449243	15	20
1449244	15	20
Detn limit	(5)	(5)

Analysis code ICP2 Report AC 765/88 Page I10

NATA Certificate Results in ppm

Sample	Sn	W
1449082	5	95
1449083	<5	90
1449084	5	100
1449085	5	95
1449086	5	100
1449087	5	100
1449088	<5	85
1449089	<5	95
1449090	5	95
1449091	5	95
1449092	5	95
1449093	5	80
1449094	5	100
1449095	<5	80
1449096	5	95
1449097	<5	50
1449098	<5	90
1449099	<5	80
1449100	<5	85
1449101	<5	90
1449102	<5	95
1449103	<5	95
1449104	<5	80
1449105	<5	70
1449106	<5	80
1449107	<5	80
1449108	<5	75
1449109	5	90
1449110	<5	85
1449111	<5	75
1449112	<5	85
1449113	<5	80
1449114	<5	60
1449115	<5	65
1449116	<5	80
1449117	<5	90
1449118	<5	80
1449119	<5	80
1449120	<5	95
1449121	<5	90
Detn limit	(5)	(5)

amdel

Analysis code ICP2 Report AC 765/88 Page I11

NATA Certificate Results in ppm

Sample	Sn	W
1449122	<5	80
1449123	<5	85
1449124	<5	85
1449125	<5	80
1449221	10	15
1449222	10	15
1449223	10	20
1449224	<5	10
1449225	5	15
1449226	10	15
1449227	10	15
1449228	15	15
1449229	20	20
1449230	20	20
1449231	20	25
1449232	25	20
1449233	25	25
1449234	20	15
1449235	15	20
1449236	20	20
1449237	15	20
1449238	25	25
1449239	20	20
1449240	20	25
1449241	20	20
1449242	20	25
1449243	15	20
1449244	15	20
Detn limit	(5)	(5)

amdel

00177

Analysis code ICP2 Report AC 7857/88 Page 114

NATA Certificate Results in ppm

Sample	Sn	W
1449245	20	20
1449246	15	20
1449247	15	20
1449248	15	20
1449249	20	25
1449250	20	25
1449251	20	20
1449252	15	15
1449253	15	20
1449254	20	25
1449255	20	20
1449256	15	25
1449257	15	15
1449258	20	20
1449259	20	25
1449260	20	25
1449261	20	20
1449262	25	20
1449263	10	5
Detn limit	(5)	(5)

AMG GRID CO-ORDINATES (m)

DPO 46556

Sample no.	EAST	NORTH
1239417	[illegible]	6411149
1239418	[illegible]	6407695
1239419	[illegible]	6410863
1239420	[illegible]	6412884
1239421	[illegible]	6412971
1239422	[illegible]	6412124
1239423	354471	6412086
1239424	353813	6412063
1239425	353445	6411986
1239426	352697	6411852
1239427	352501	6411821
1239428	347771	6410857
1239429	346528	6412002
1239430	345366	6410957
1239431	345772	6410998
1239432	347806	6411793
1239433	348330	6412134
1239434	347614	6412155
1239435	350366	6409652
1239436	350796	6409266
1239437	345741	6408937
1239438	[illegible]	6408390
1239439	344156	6410423
1239440	342589	6410564
1239441	342099	6412007
1239442	342724	6413267
1239443	343289	6413661
1239444	342939	6414048
1239445	343467	6414871
1239446	342265	6413737
1239447	341894	6413658
1239448	341635	6413728
1239449	341306	6413592
1239450	340947	6412499
1239451	340650	6412287
1239452	340280	6412015
1239453	339984	6411791
1239454	339446	6411739
1239455	338744	6411303
1239456	338402	6411036
1239457	337385	6410729
1239458	336494	6407940
1239459	335452	6407458
1239460	334634	6406005
1239461	333973	6405595
1239462	333652	6405196
1239463	334638	6410506
1239464	334090	6411772
1239465	334504	6411854
1239466	334815	6412071
1239467	335201	6412168
1239468	335759	6412418
1239469	336494	6412790
1239470	337546	6412466
1239471	338584	6413291
1239472	338395	6413815
1239473	338100	6414471
1239474	337791	6414363
1239475	340782	6408921
1239476	338854	6409065

Sample No.	[illegible]	[illegible]
1239477	362790	[illegible]
1239478	362911	[illegible]
1239479	361302	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
1239482	358251	[illegible]
1239483	358213	[illegible]
1239484	358619	[illegible]
1239485	357435	[illegible]
1239486	356016	[illegible]
1239487	355709	[illegible]
1239488	355671	[illegible]
1239489	355200	[illegible]
1239490	355636	[illegible]
1239491	356190	[illegible]
1239492	356266	[illegible]
1239493	359163	[illegible]
1239494	361717	[illegible]
1239495	361534	[illegible]
1239496	360902	[illegible]
1239497	360503	[illegible]
1239498	360850	[illegible]
1239499	362573	[illegible]
1239500	363166	[illegible]
1239501	362714	[illegible]
1239502	364574	[illegible]
1239503	363496	[illegible]
1239504	363524	[illegible]
1239505	363422	[illegible]
1239506	363502	[illegible]
1239507	362218	[illegible]
1239508	360030	[illegible]
1239509	359870	[illegible]
1239510	354782	[illegible]
1239511	358323	[illegible]
1239512	358433	[illegible]
1239513	358837	[illegible]
1239514	359808	[illegible]
1239515	360822	[illegible]
1239516	361228	[illegible]
1239517	362302	[illegible]
1239518	362976	[illegible]
1239519	363082	[illegible]
1239520	363709	[illegible]
1239521	364339	[illegible]
1239522	364677	[illegible]
1239523	364444	[illegible]
1239524	362909	[illegible]
1239525	362225	[illegible]
1239526	361574	[illegible]
1239527	361180	[illegible]
1239528	360990	[illegible]
1239529	360824	[illegible]
1239530	359153	[illegible]
1239531	358999	[illegible]
1239532	360171	[illegible]
1239533	358393	[illegible]
1239534	357696	[illegible]
1239535	357066	[illegible]
1239536	356861	[illegible]

Sample No.		NORTH
1239541	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
1239542	[illegible]	6416231
1239544	[illegible]	[illegible]
1239545	[illegible]	6417120
1239546	[illegible]	6417071
1239547	352155	6417271
1239548	354928	6417122
1239549	361384	6413098
1239550	361918	6413114
1239551	342655	6421182
1239552	342251	6421049
1239553	341876	6420932
1239554	341016	6420696
1239555	338142	6419545
1239556	338169	6419890
1239557	338015	6419024
1239558	337144	6419012
1239559	336164	6418220
1239560	336262	6419210
1239561	337173	6420041
1239562	335054	6418301
1239563	334406	6417891
1239564	333122	6417112
1239565	332620	6416779
1239566	331642	6415977
1239567	330783	6423018
1239568	331446	6423651
1239569	331164	6425950
1239570	331071	6427828
1239571	332437	6427371
1239572	333150	6424396
1239573	334759	6424799
1239574	335548	6424940
1239575	342715	6421900
1239576	359049	6407899
1239577	358582	6408083
1239578	356575	6407492
1239579	356095	6408274
1239580	355012	6407718
1239581	354560	6407686
1239582	353808	6407073
1239583	352962	6407740
1239584	353368	6407969
1239585	354693	6408221
1239586	353101	6408388
1239587	352716	6409214
1239588	351777	6412521
1239589	351649	6412833
1239590	352115	6412712
1239591	353152	6412867
1239592	353276	6413022
1239593	353639	6413061
1239594	354347	6413317
1239595	355457	6413903
1239596	356985	6414072
1239597	358639	6414521
1239598	359250	6414678
1239599	359659	6415213
1239600	[illegible]	6414117

AMG GRID CO-ORDINATES (m)

DPO 46560

Sample No.	EAST	NORTH
1449001	318877	6411080
1449002	318418	6418710
1449003	317939	6418633
1449004	317824	6418762
1449005	318671	6419751
1449006	318420	6419736
1449007	318754	6421536
1449008	320020	6420652
1449009	320371	6420359
1449010	321057	6421715
1449011	322749	6421400
1449012	323178	6422648
1449013	322121	6423361
1449014	321815	6424212
1449015	322296	6425109
1449016	322698	6425693
1449017	323503	6426319
1449018	324449	6426676
1449019	325747	6425176
1449020	327573	6427256
1449021	329171	6427108
1449022	327522	6426751
1449023	327330	6424228
1449024	329739	6425180
1449025	329918	6422878
1449026	329071	6422422
1449027	328464	6421972
1449028	328366	6422192
1449029	326177	6423639
1449030	325826	6423105
1449031	325468	6422985
1449032	325727	6424472
1449033	325653	6423825
1449034	325265	6423116
1449035	323693	6421064
1449036	323419	6420854
1449037	323822	6420435
1449038	323300	6418656
1449039	322648	6418492
1449040	321878	6417182
1449041	320164	6415011
1449042	321364	6414140
1449043	321726	6413862
1449044	322677	6413459
1449045	324319	6412338
1449046	324780	6412428
1449047	325866	6412741
1449048	326562	6413361
1449049	326926	6414026
1449050	328209	6417551
1449051	324771	6417210
1449052	325616	6416497
1449053	330735	6415977
1449054	329871	6415637
1449055	329443	6415217
1449056	326524	6414987
1449057	327864	6414536
1449059	327049	6413244
1449060	327774	6412629
1449061	328652	6412682

Sample no.	[illegible]	[illegible]
1449061	[illegible]	[illegible]
1449062	[illegible]	[illegible]
1449063	[illegible]	[illegible]
1449064	[illegible]	[illegible]
1449065	[illegible]	[illegible]
1449066	[illegible]	[illegible]
1449067	[illegible]	[illegible]
1449068	[illegible]	[illegible]
1449069	[illegible]	[illegible]
1449070	[illegible]	[illegible]
1449071	[illegible]	[illegible]
1449072	[illegible]	[illegible]
1449073	[illegible]	[illegible]
1449074	[illegible]	[illegible]
1449075	[illegible]	[illegible]
1449076	[illegible]	[illegible]
1449077	[illegible]	[illegible]
1449078	[illegible]	[illegible]
1449079	[illegible]	[illegible]
1449080	[illegible]	[illegible]
1449081	[illegible]	[illegible]
1449082	[illegible]	[illegible]
1449083	[illegible]	[illegible]
1449084	[illegible]	[illegible]
1449085	[illegible]	[illegible]
1449086	[illegible]	[illegible]
1449087	[illegible]	[illegible]
1449088	[illegible]	[illegible]
1449089	[illegible]	[illegible]
1449090	[illegible]	[illegible]
1449091	[illegible]	[illegible]
1449092	[illegible]	[illegible]
1449093	[illegible]	[illegible]
1449094	[illegible]	[illegible]
1449095	[illegible]	[illegible]
1449096	[illegible]	[illegible]
1449097	[illegible]	[illegible]
1449098	[illegible]	[illegible]
1449099	[illegible]	[illegible]
1449100	[illegible]	[illegible]
1449101	[illegible]	[illegible]
1449102	[illegible]	[illegible]
1449103	[illegible]	[illegible]
1449104	[illegible]	[illegible]
1449105	[illegible]	[illegible]
1449106	[illegible]	[illegible]
1449107	[illegible]	[illegible]
1449108	[illegible]	[illegible]
1449109	[illegible]	[illegible]
1449110	[illegible]	[illegible]
1449111	[illegible]	[illegible]
1449112	[illegible]	[illegible]
1449113	[illegible]	[illegible]
1449114	[illegible]	[illegible]
1449115	[illegible]	[illegible]
1449116	[illegible]	[illegible]
1449117	[illegible]	[illegible]
1449118	[illegible]	[illegible]
1449119	[illegible]	[illegible]
1449120	[illegible]	[illegible]
1449121	[illegible]	[illegible]

Sample no.	EAST	NORTH
1449122	3633[illegible]	6417733
1449123	363400	6417650
1449124	363500	6417500
1449125	362200	6417050
1449221	355250	6415350
1449222	355260	6415240
1449223	355275	6415125
1449224	3552[illegible]	6415030
1449225	355305	6414920
1449226	355325	6414615
1449227	355345	6414710
1449228	3553[illegible]	6414600
1449229	355415	6414490
1449230	355450	6414400
1449231	355495	6414290
1449232	355545	6414180
1449233	355595	6414065
1449234	355630	6413950
1449235	355660	6413830
1449236	355670	6413710
1449237	355615	6413615
1449238	355500	6413600
1449239	355370	6413650
1449240	355257	6413715
1449241	3551[illegible]	6413780
1449242	355040	6413840
1449243	354925	6413890
1449244	354810	6413945
1449245	354695	6414000
1449246	354580	6414065
1449247	354460	6414150
1449248	354435	6414200
1449249	354395	6414265
1449250	354355	6414335
1449251	354320	6414405
1449252	354290	6414480
1449253	354270	6414550
1449254	354245	6414630
1449255	354230	6414705
1449256	354210	6414780
1449257	354200	6414850

AMG GRID CO-ORDINATES (m)

DPO 46557

Sample no.	EAST	NORTH
1239637	350464	6407609
1239638	351348	6406387
1239639	351141	6406665
1239640	351127	6405782
1239601	351471	6404548
1239602	350824	6403738
1239603	349426	6403525
1239604	348401	6404632
1239605	348141	6404060
1239606	347322	6403845
1239607	346626	6403663
1239608	345026	6403116
1239609	344033	6403263
1239610	342969	6402749
1239611	342716	6401924
1239612	341800	6401738
1239613	341649	6401426
1239614	341197	6400960
1239615	340247	6399823
1239616	339970	6399447
1239617	339733	6399066
1239618	339556	6398726
1239619	339177	6397954
1239620	338884	6397420
1239621	338496	6396813
1239622	338131	6396188
1239623	337783	6395074
1239624	339248	6393145
1239625	339693	6393017
1239626	336273	6397409
1239627	337799	6398105
1239628	338024	6398253
1239629	338412	6398477
1239630	338241	6399189
1239631	338540	6399284
1239632	338357	6399942
1239633	339179	6400151
1239634	339633	6400335
1239635	339946	6400732
1239636	340494	6401248
1239637	341410	6402182
1239638	341655	6402444
1239639	342337	6403060
1239640	343022	6403321
1239641	343941	6404011
1239642	343414	6404580
1239643	346668	6404804
1239644	347321	6404735
1239645	349551	6405958
1239646	349302	6406161
1239647	349778	6407026
1239648	343310	6394062
1239649	344293	6394101
1239650	346100	6394320
1239651	346830	6394781
1239652	347338	6395257
1239653	347757	6395771
1239654	348248	6395598
1239655	348387	6396324
1239656	348872	6396893

Sample no.	EAst	NORTH
1239657	349493	6397707
1239658	350262	6397712
1239659	350496	6397228
1239660	350115	6396723
1239661	350611	6397076
1239662	351241	6396117
1239663	334250	6394379
1239664	335002	6393970
1239665	338839	6394696
1239666	335795	6395946
1239667	335669	6396768
1239668	332225	6396246
1239669	329905	6396621
1239670	330073	6397451
1239671	330725	6396471
1239672	330507	6395960
1239673	329567	6395373
1239674	328546	6394774
1239675	328531	6396459
1239676	327225	6395297
1239677	325995	6394514
1239678	326353	6393345
1239679	323173	6394999
1239680	322981	6395243
1239681	321243	6395958
1239682	320592	6396106
1239683	317885	6396398
1239684	317202	6397502
1239685	314330	6398404
1239686	314313	6398716
1239687	314799	6398497
1239688	316442	6398099
1239689	317217	6398171
1239690	318538	6399185
1239691	317640	6401059
1239692	319340	6400354
1239693	319128	6401549
1239694	319884	6401291
1239695	320499	6401765
1239696	321860	6399197
1239697	321897	6398460
1239698	325071	6398070
1239699	326207	6399008
1239700	326494	6399465
1239701	327578	6400787
1239702	327553	6401274
1239703	327019	6401413
1239704	325680	6399799
1239705	324054	6399905
1239706	323414	6399873
1239707	358400	6425450
1239708	358500	6425470
1239709	358600	6425490
1239710	358700	6425510
1239711	358800	6425530
1239712	358900	6425550
1239713	358980	6425603
1239714	359075	6425636
1239715	359170	6425709
1239716	359260	6425762

Sample no.	EAST	NORTH
1239717	359150	6425815
1239718	359440	6425868
1239719	359530	6425922
1239720	359610	6425975
1239721	359710	6426028
1239722	359800	6426081
1239723	359890	6426134
1239724	359980	6426187
1239725	360065	6426240
1239726	360150	6426293
1239727	360235	6426346
1239728	360320	6426404
1239729	360405	6426459
1239730	360490	6426515
1239731	360575	6426570
1239732	360660	6426626
1239733	360745	6426681
1239734	360830	6426737
1239735	356359	6425844
1239736	361000	6426848
1239737	360980	6426948
1239738	360960	6427049
1239739	360940	6427149
1239740	360920	6427249
1239741	360900	6427350
1239742	360912	6427450
1239743	360924	6427550
1239744	360936	6427650
1239745	360948	6427750
1239746	360960	6427850
1239747	360972	6427950
1239748	360984	6428050
1239749	361996	6428150
1239750	353417	6421250
1239751	348338	6419018
1239752	348175	6418579
1239753	347877	6418611
1239754	347090	6417942
1239755	346768	6417431
1239756	347637	6416505
1239757	347770	6416473
1239758	348184	6416435
1239759	348356	6416297
1239760	349144	6417504
1239761	349404	6417241
1239762	347447	6417580
1239763	344088	6416425
1239764	343766	6418653
1239765	310636	6408187
1239766	310664	6407992
1239767	310670	6407959
1239768	310817	6408041
1239769	311702	6408289
1239770	312399	6407318
1239771	312016	6405615
1239772	312361	6405216
1239773	312982	6405254
1239774	313015	6406036
1239775	314524	6405336
1239776	315143	6404886

Sample no.	EAST	NORTH
1239777	315632	6404494
1239778	315922	6404136
1239779	316195	6403829
1239780	316547	6403436
1239781	317003	6403900
1239782	318993	6407483
1239783	321144	6407570
1239784	321877	6408337
1239785	321862	6410544
1239786	322063	6411787
1239787	321081	6412948
1239788	320852	6413796
1239789	320297	6414845
1239790	319214	6413716
1239791	318857	6413507
1239792	317871	6413743
1239793	316497	6413827
1239794	318673	6411696
1239795	318694	6410783
1239796	318126	6409826
1239797	314324	6408043
1239798	315114	6409158
1239799	315584	6409788
1239800	315814	6410070

00188

CRA EXPLORATION PTY. LIMITED
(INC. IN N.S.W.)
Adelaide Office: 31 OSMOND TERRACE, NORWOOD 5067
Head Office: 55 COLLINS STREET, MELBOURNE 3001

P.O. BOX 254 Norwood
TELEPHONE: 42 8871
TELEGRAMS: "EXPLORECO"
TELEX: AA88605

8th April, 1988

The Director General,
Department of Mines & Energy, South Australia
P.O. Box 151,
EASTWOOD. S.A. 5063.

Dear Sir,

Re: HOPE BANK EL 1376

Quarterly Report For Period Ending 5th April, 1988

During the quarter, no field work was undertaken.

Expenditure for the period ended 31st March, 1988 was minimal and amounted to $3 087, consisting of:

Payroll	$ 935
Supplies	$ 356
Vehicle	$ 734
Rent	$ 245
Overheads	$ 817
	$3 087

Yours faithfully,

W.H. JOHNSTON
CHIEF GEOLOGIST S.A./N.T.

WHJ/pq

CRA EXPLORATION PTY. LIMITED

SIXTH QUARTERLY & FINAL REPORT FOR HOPE BANK EL 1376, SOUTH AUSTRALIA, FOR THE PERIOD ENDING 5TH JULY, 1988

AUTHOR: D.C. PALMER

DATE: 25TH AUGUST, 1988

COPIES TO: CIS CANBERRA
SADME

SUBMITTED BY:

ACCEPTED BY:

15334

CONTENTS

LIST OF PLANS

LIST OF TABLES

LIST OF APPENDICES

1. SUMMARY

Catchments within Hope Bank EL 1376 which reported anomalous multi-element signatures were selected for follow up sampling.

Exposures of outcrop and float were sampled from within catchments 1239668-1239670, south of Waddington Bluff, and catchments 1449079, 1449084-1449086 east of Hantken Hill.

Follow up rock chip and float sampling returned low base metal and gold assays.

2. INTRODUCTION

Hope Bank EL 1376 was granted to CRA Exploration Pty. Limited on 6th January, 1987 for a period of one year. A subsequent extension for a one year period was granted on 6th January, 1988.

During 1987, a stream sediment geochemistry survey was conducted within the Hope Bank EL 1376 licence. The survey was designed to test all subcrop regardless of stratigraphy and to use multi-element signatures to rate areas of anomalous gold in an attempt to locate a Telfer-style (stratabound Au) resource.

This report describes the work carried out during the sixth quarter ending 5th July, 1988, and summarises all work completed by CRA Exploration Pty. Limited.

3. CONCLUSIONS

Exposures of outcrop sampled in catchments south of Waddington Bluff returned background metallic element values.

The source of the Cu/Pb/Zn stream sediment anomalism recorded in adjacent catchments east of Hantken Hill, appears to be a small lateritic ironstone accumulation overlying the Apilla Tillite.

Work programmes completed by CRA Exploration Pty. Limited within EL 1376 has downgraded the potential of the area to host significant stratabound gold mineralisation. No further work appears warranted within Hope Bank EL 1376.

4. LOCATION

Hope Bank EL 1376 is located approximately 20 km north west of the Yunta township, on the Adelaide-Broken Hill Highway (plan no. SAa 4244). The licence covers an area of approximately 1303 sq km encompassing parts of East Wydown, McCoys Well, Melton, Minburra, Teetulpa and Wabricoola stations.

5. PREVIOUS WORK

Work carried out on Hope Bank EL 1376 by CRA Exploration Pty. Limited, up to and including the sixth quarter is summarised in Table 1. A detailed discussion of sampling procedures and concepts is given in the third quarterly report for EL 1376 (Murrell, B. & Sugden, S.P., 1987).

Table 1

Year	Remarks	Specifications	Report
1987	Stream Sediment Sampling	452 Catchments, 0.5-5.0 km^2 in size	3rd Qtly Rpt Hope Bank EL 1376
1987	Geochemistry	452 samples assayed for Au (0.5 ppb) fire/AAS + 8 elements (ICP), 10 elements (AAS), first 181 samples Pt and Pd lead/fire AAS.	3rd Qtly Rpt Hope Bank EL 1376
1987	Soil sampling	37 samples from spurs bounding catchment 1239595.	
		56 samples of mine-host stratigraphic sequence in Waukaringa Syncline.	3rd Qtly Rpt Hope Bank EL 1376
1987	Rock Sampling	6 samples, miscellaneous locations	3rd Qtly Rpt Hope Bank EL 1376
1987	Geochemistry	93 soil samples assayed for Au + base metals	3rd Qtly Rpt Hope Bank EL 1376

Table 1 (cont.)

Year	Remarks	Specifications	Report
1987	Statistics	Compilation of anomalous Cu,Pb,Zn,As 95th Percentile, Au 97th Percentile. Delineation of catchments with multi-element signatures.	4th Qtly Rpt Hope Bank EL 1376
1988	Rock Chip Sampling	51 Rock samples from anomalous catchments	6th Qtly Rpt Hope Bank EL 1376
1988	Geochemistry	42 rock samples assayed for Au & base metals	6th Qtly Rpt Hope Bank EL 1376

6. GEOLOGY

The major rock units found within the licence are the essentially unmetamorphosed folded Adelaidean sediments of the Burra Group, Umberatana Group (Yudnamutana, Farina and Elatina Sub-Groups) and Wilpena Group. Outcrop of Tertiary rocks is limited to small areas of ferruginous laterite and silcreted sands. Thin Quaternary sands, calcreted gravels, alluvium and colluvium cover much of the Adelaidean stratigraphy.

Table 2 describes the Adelaidean stratigraphy within Hope Bank EL 1376.

Hope Bank EL 1376 covers the eastern and western closures of the Waukaringa Syncline and a parallel antiform incorporating the same sequence to the south. The mineralisation at Waukaringa and Ajax mines (which lie in that portion of the Waukaringa Syncline not held by CRAE) is associated with quartz and arsenical pyrite filling dilation zones in layer parallel fault planes. Superfine sulphide mineralisation occurs in the Farina Sub-Group sandstones and siltstones at Waukaringa Mine, suggesting that the mineralisation in the quartz lodes occurs nearby to primary mineralisation in the sediments (Murrell, B. & Sugden, S.P., 1987).

Table 2

ADELAIDEAN STRATIGRAPHY - HOPE BANK EL 1376

	Group/Sub Group	Unit	Lithology
	Wilpena Gp	Pound Sst.	Quartzite feldspathic sandstone & siltstone
		Wonoka Fmn.	Calcareous siltstone & shale minor limestone & quartzites
		Ulupa Siltstone	Siltstone (Brachina Equliv)
Umberatana Group	Elatina Sub Gp - Upper Glacial Gp		Diamictite & fluvials
	Farina Sub Gp (intraglacials)	Undifferentiated	Shales, siltstone, carbonatic siltstones, minor carbonate units
		Tarcowie Siltstone	Siltstone & sandstone
		Willochra Fmn.	Siltstone, shale, minor gritty sandstone & limestone
		Tapley Hill Fmn.	Siltstone, limestone, minor breccia bands, slump conglomerates & sandstone.
	Yudnamutana Sub Gp	Wilyerpa Qtzite	Sandstone, siltstone and minor tillites
		Appila Tillite	Boulder tillite siltstone & sandstone
	Burra Gp	Undifferentiated	

7. WORK CARRIED OUT

From the stream sediment sampling programme completed within Hope Bank EL 1376, catchments reporting 'anomalous' base metal and Au assay values were delineated for follow up sampling (plans SAa 4741, SAa 4742 & SAa 4853). A summary of interpreted results is detailed in CRAE Report No. 14946.

During the sixth quarter sampling of representative outcrop was completed in the following areas;

i. catchments 1239668-1239670, south of Waddington Bluff which reported weak Zn/Au 'anomalism', and

ii. catchments 1449079, 1449084-1449086, east of Hantken Hill which recorded Cu/Pb/Zn 'anomalism', in an area incorporating an anticlinal closure of Appila Tillite.

Fifty one rock chip and float samples were collected. Sample locations are plotted on plan SAa 4950.

Low base metal and Au assay values were returned from all rock chip samples. Anomalous Zn (470 ppm), Pb (1100 ppm) and elevated Cu (160 ppm) values were returned from a sample of lateritic ironstone float (sample no. 1164197), collected within catchment 1449085. A rock sample ledger appears in Appendix I.

8. DISCUSSION

The source of Cu/Pb/Zn stream sediment anomalism recorded in adjacent catchments, east of Hantken Hill, appears to be a small lateritic ironstone accumulation overlying the Appila Tillite (plan SAa 4950).

The limited areal extent of the lateritic ironstone and the low base metal and Au assays, returned from rock samples collected in catchments south of Waddington Bluff, has downgraded the potential of the area to host significant stratabound Au mineralisation.

No further work appears warranted within Hope Bank EL 1376.

D.C. PALMER

DCP/pq

EXPENDITURE

Expenditure for the period ended 30th June, 1988, the nearest accounting period amounted to $8 860, as listed below.

	$
Payroll	4 402
Supplies	260
Vehicle	1 569
Travel	231
Rent	327
Sundry	800
Overheads	1 271
Total	$8 860

REFERENCES

Murrell, B. & Sugden, S.P. 1987	Third Quarterly Report For Hope Bank EL 1376, South Australia, For The Period Ending 5th October, 1987. (CRAE Report No. 14762)
Palmer, D.C. 1987	Fourth Quarterly Report For Hope Bank EL 1376, South Australia, For The Period Ending 5th January, 1988. (CRAE Report No. 14946)

LOCATION

Orroroo SI 54-01
Olary SI 54-02

KEYWORDS

Gold, Geochemistry - Stream Sediment, Clays, Soils, Waukaringa

APPENDIX I

ROCK SAMPLE LEDGER
SAMPLE NOS. 1164149-1164150, 1164152-1164200

C.R.A. EXPLORATION PTY. LTD.- ROCK SAMPLE FIELD DATA SHEET.

Area: HOPE BANK EL1376 Collected: D.C.P Analysed by: ANALYTICAL SERVICES Lab. report no: 40731
Map ref: ORRORDO Date collected: 13/6/88 Date anal. rec:
Photo name: PARATOO Date to lab: Plan no: SAa 4950
Run No: 5/127 D.P.O. No: 37542 C.R.A. report no:

Sample type: 1. Chip. 2. Float 3. Channel. 4. Panel.
Test: 1. Chemistry 2. Duplicate 3. Thin section 4. Polished section.

Sample Number	COORDINATES A.M.G/Long./Lat./Local EAST	NORTH	SAMPLE TYPE	WIDTH (m)	AREA (sq.m)	No. CHIPS	TEST	ROCK DESCRIPTION	MAG SUS SI x 10⁻³	SCINT C.P.S	Metal Content (ppm) Au	As	W	Sn	Pb	Zn	Ag	Cu	Ni	Co	U	Mn
ANALYSIS METHOD											F/AAS	ICP	ICP	ICP	AAS	AAS	AAS	AAS	AAS	AAS	ICP	AAS
DETECTION LIMIT (ppm)											0.01	2	0.5	2	10	1	1	1	10	10	0.02	1
1164149	331680	6399040	1					GREY GREEN SILTY SANDSTONE (TARCOWIE SILTSTONE)	20	65	.01	4	2	2	5	61	.5	24	20	5	1.9	460
1164150	331550	6399530	1					(TAPLEY HILL FORMATION)	10	110	.05	1	1.5	1	20	27	.5	21	20	5	1.7	1500
1164152	330790	6399300	1					GREY-GREEN LAMINATED SILTSTONE (TAPLEY HILL FORMATION)	5	60	.01	18	3.5	4	20	120	.5	38	70	5	3.3	470
1164153	331050	6399820	2					QUARTZ (VEIN) with IRON OXIDE PSEUDOMORPH after PYRITE	15	-												
1164154	331100	6399880	2					CARBONATE FLOAT														
1164155	330950	6400140	2					SILICIFIED GREY-REDBROWN QUARTZOSE SANDSTONE	5	50												
1164156	330300	6399720	1					YELLOW-BROWN, GREY-GREEN SILTSTONE, with iron oxide layers. (TAPLEY HILL FORMATION)	180	60	.05	10	1.5	2	20	70	.5	34	30	10	2.9	210
1164157	331510	6399750	1					BLACK MICACEOUS SILTSTONE with iron oxide layers (TAPLEY HILL FORMATION)	40	55	.02	12	2.5	4	20	100	.5	30	50	5	3.9	450
1164158	333210	6399170	1					PALE GREEN-GREY LAMINATED SILTSTONE (strongly cleaved) (ENORAMA SHALE)	40	60	.01	2	3.5	4	5	130	.5	17	50	10	2	450
1164159	333125	6399320	2					QUARTZ (VEIN) with grey green inclusions.	-	-												
1164160	333200	6399810	1					GREY-GREEN LAMINATED SILTSTONE with iron oxide (after pyrite). HOST TO SAMPLE 1164161 (WAUKARINGA SILTSTONE)	5	65	.005	1	3.5	4	5	100	.5	37	40	10	3.5	590

C.R.A. EXPLORATION PTY. LTD.- ROCK SAMPLE FIELD DATA SHEET.

Area: HOPE BANK EL1376
Map ref: ORROROO
Photo name: PARATOO
Run No: 5/127

Collected: D.C.P
Date collected: 14/6/88
Date to lab:
D.P.O. No: 37542

Analysed by: ANALYTICAL SERVICES
Date anal. rec:
Plan no: SAu 4950
C.R.A. report no:

Lab. report no: 40731

Sample type: 1. Chip. 3. Channel. 2. Float 4. Panel.
Test: 1. Chemistry 2. Duplicate 3. Thin section 4. Polished section.

Sample Number	COORDINATES AM.G/Long./Lat./Local EAST	NORTH	SAMPLE TYPE	WIDTH (m)	AREA (sq.m)	No. CHIPS	TEST	ROCK DESCRIPTION	MAG SUS SI×10⁻⁵	SCINT c.p.s	Au	As	W	Sn	Pb	Zn	Ag	Cu	Ni	Co	U	Mn
ANALYSIS METHOD											F/AAS	ICP	ICP	ICP	AAS	AAS	AAS	AAS	AAS	AAS	ICP	AAS
DETECTION LIMIT (ppm)											0.01	2	0.5	2	10	1	1	1	10	10	0.02	1
1164161	333130	6399800	1					QUARTZ (VEIN) with vuggy iron oxide. 2cm vein-joint infill			·005	1	1	1	20	39	·5	10	20	5	0.86	370
1164162	333100	6400060	1					GREY SILTSTONE with iron oxide after pyrite (TARCOWIE SILTSTONE)	10	60	·005	1	2.5	2	20	56	·5	35	30	5	3.3	440
1164163	332800	6398575	2					QUARTZ-K-FELDSPAR PEGMATITE float.														
1164164	332801	6398570	2					QUARTZ (VEIN) with green mineral inclusions.														
116416[illegible]	332625	6398520	2					QUARTZ (VEIN) with greygreen siltstone fragments.			·02	1	·5	1	5	48	·5	18	10	5	·06	120
1164166	332626	6398520	2					IRON OXIDE PSEUDOMORPH after PYRITE ('devils dice').														
1164167	332820	6399200	1					YELLOW-BUFF SILTSTONE (weathered), strongly cleaved and calcretized. (WAUKARINGA SILTSTONE)	20	78	·05	6	3.5	4	5	65	·5	18	10	5	4.2	57
1164168	332750	6399395	1					PALE BROWN LAMINATED SILTY SANDSTONE (WILLOCHRA FORMATION)	15	85	·005	6	2	4	20	87	·5	31	30	20	2.9	240
1164169	332600	6399490	1					PALE BROWN-YELLOW LAMINATED SILTY SANDSTONE with black laminae, and iron oxide after pyrite. (WILLOCHRA FM)	10	68	·n	1	2.5	2	10	67	·5	34	40	5	2.2	260

C.R.A. EXPLORATION PTY. LTD. - ROCK SAMPLE FIELD DATA SHEET

Area: HOPE BANK EL1376 Collected: D.C.P
Map ref: ORROROO Date collected: 14/6/88
Photo name: Date to lab:
Run No: PARATOO 5/127 KOONAMORE 6/110 D.P.O. No: 37542

Analysed by: ANALYTICAL SERVICES Lab. report no: 40731
Date anal. rec:
Plan no: SAa 4950
C.R.A. report no:

Sample TYPE: 1. Chip. 2. Float 3. Channel. 4. Panel.
Test: 1. Chemistry 2. Duplicate 3. Thin section 4. Polished section.

Sample Number	COORDINATES AM.G/Long./Lat./Local EAST	NORTH	SAMPLE TYPE	WIDTH (m)	AREA (sq.m)	No. CHIPS	TEST	ROCK DESCRIPTION	MAG SUS x10⁻⁶ SI	SCINT C.P.S	Metal Content (ppm) Au	As	W	Sn	Pb	Zn	Ag	Cu	Ni	Co	U	Mn
								ANALYSIS METHOD	F/AAS	ICP	ICP	ICP	AAS	AAS	AAS	AAS	AAS	AAS	ICP	AAS
								DETECTION LIMIT (ppm)	0.01	2	0.5	2	10	1	1	1	10	10	0.02	1
1164170	333860	6398950	2		100			QUARTZ, QUARTZ/SILTSTONE			.005	1	1.6	1	5	12	.5	4	10	5	.26	120
								FLOAT. FROM QUARTZ BLOW	25	78												
								(ENDRAMA SHALE)														
1164171	333900	6399130	2					QUARTZ (VEIN) with green			.10	1	1	1	5	140	.5	8	40	10	.36	940
								subhedral crystals in vugh														
1164172	334000	6399270	2					IRON OXIDE PSEUDOMORPH														
								after PYRITE (devils dice)														
								from														
1164173	333695	6399820	1					GREEN-GREY to BROWN	10	85	.04	4	2.6	2	5	100	.5	28	30	10	1.9	830
								SILTSTONE														
								(WAUKARINGA SILTSTONE)														
1164174	333750	6398000	1					RED-BROWN LAMINATED	5	75	.03	1	2	1	5	67	.5	28	20	5	3.4	120
								SANDSTONE (QUARTZOSE)														
								(ELATINA GROUP)														
1164175	333500	6397980	1					LAMINATED and CROSS BEDDED	10	65	.05	8	1.5	1	10	53	.5	31	20	5	3.3	590
								LIGHT GREY SANDSTONE														
								(ELATINA GROUP)														
1164176	330950	6404880	1					SILICIFIED MICRO-CONGLOMERATE			.01	1	1.5	1	5	19	.5	17	20	5	1.2	100
								(pebble sandstone)	10													
								(APILLA TILLITE)														
1164177	330990	6404890	1					GRANITIC CLAST IN TILLITE	5		.005	1	1	4	5	18	.5	21	5	5	1.7	76
								40cm in diameter.														
								(APILLA TILLITE)														
1164178	331040	6404900	1					MATRIX DOMINATED TILLITE	10	107	.02	1	5	1	5	28	.5	22	10	5	1.2	490
								Grey-light brown matrix														
								(weathered) and quartzose clasts														
								(APILLA TILLITE)														

C.R.A. EXPLORATION PTY. LTD.- ROCK SAMPLE FIELD DATA SHEET.

Area: HOPE BANK EL 376 Collected: D.C.P Analysed by: ANALYTICAL SERVICES Lab. report no: 40731
Map ref: ORRORDO Date collected: 14/6/88 Date anal. rec:
Photo name: KOONAMORE Date to lab: Plan no: SAa 4950
Run No: 4/110 D.P.O. No: 37542 C.R.A. report no:

Sample type: 1. Chip. 2. Float. 3. Channel. 4. Panel.
Test: 1. Chemistry 2. Duplicate 3. Thin section 4. Polished section.

Sample Number	COORDINATES AM.G / Long. / Lat. / Local EAST	NORTH	SAMPLE TYPE	WIDTH (m)	AREA (square m)	No. CHIPS	TEST	ROCK DESCRIPTION	MAG SUS STDS	SCINT C.P.S	Metal Content (ppm) Au	As	W	Sn	Pb	Zn	Ag	Cu	Ni	Co	U	Mn
ANALYSIS METHOD											F/AAS	ICP	ICP	ICP	AAS	AAS	AAS	AAS	AAS	AAS	ICP	AAS
DETECTION LIMIT (ppm)											0.01	2	0.5	2	10	1	1	1	10	10	0.02	1
1164179	331010	6404445	1					MATRIX DOMINATED TILLITE	10	120	.005	2	1.5	1	20	60	.5	30	20	5	2.8	590
								Grey-brown, weathered with														
								qtzite, gneiss, schist, jasperclast														
								(APILLA TILLITE)														
1164180	331200	6404400	1					MATRIX DOMINATED TILLITE	10	110	.005	1	4	2	5	59	.5	28	20	5	3.2	620
								as for 1164179														
								(APILLA TILLITE)														
1164181	331450	6404450	1					MATRIX DOMINATED TILLITE			.005	1	1.5	1	20	81	.5	29	10	5	3.4	620
								Strongly cleaved, with	5	110												
								iron oxide halos.														
								(APILLA TILLITE)														
1164182	331640	6404450	1					VARVED SANDSTONE			.005	1	2.5	1	5	10	.5	10	10	5	.60	60
								(laminated) quartzose														
								dominant.														
								(APILLA TILLITE ?)														
1164183	331880	6404475	1					MATRIX DOMINATED TILLITE			.005	10	2	1	5	44	.5	26	10	5	3.6	560
								as for 1164179	10	70												
								(APILLA TILLITE)														
1164184	332430	6403600	1					MASSIVE RED-BROWN	5	60	.005	1	2.5	1	5	16	.5	6	10	5	.80	570
								QUARTZITIC SANDSTONE														
								(weak silicification)														
								(WILYERPA QUARTZITE)														
1164185	332310	6403420	1					GREY LAMINATED (PYRITIC)	20	65	.005	10	2	4	5	70	.5	42	20	5	4.3	88
								SILTSTONE														
								(TINDELPINA SHALE)														
1164186	332235	6403320	1					LAMINATED SILTSTONE	10	70	.005	1	3	2	5	51	.5	29	5	5	2.3	470
								(PYRITIC)														
								(TINDELPINA SHALE)														

C.R.A. EXPLORATION PTY. LTD.- ROCK SAMPLE FIELD DATA SHEET.

PAGE N°: 5 of 6

Area: Hope Bank EL1376 Collected: D.C.P Analysed by: ANALYTICAL SERVICES Lab. report no: 40731
Map ref: ORROROO Date collected: 15/6/88 Date anal. rec:
Photo name: KOONAMORE Date to lab: Plan no: SAa 4950
Run No: 4/110 D.P.O. No: 37542 C.R.A. report no:

Sample type: 1. Chip. 2. Float 3. Channel. 4. Panel.
Test: 1. Chemistry 2. Duplicate 3. Thin section 4. Polished section.

Sample Number	COORDINATES AM.G/Long./Lat./Local EAST	NORTH	SAMPLE TYPE	WIDTH (m)	AREA (sq.m)	No. CHIPS	TEST	ROCK DESCRIPTION	MAG SUS ×10^-5	SCINT C.P.S	Au	As	W	Sn	Pb	Zn	Ag	Cu	Ni	Co	U	Mn
								ANALYSIS METHOD			F/AAS	ICP	ICP	ICP	AAS	AAS	AAS	AAS	AAS	AAS	ICP	AAS
								DETECTION LIMIT (ppm)			0.01	2	0.5	2	10	1	1	1	10	10	0.02	1
1164187	332080	6403145	2					QUARTZ - IRONSTONE FLOAT within Apilla Tillite														
1164188	331400	6402530	1					RED BROWN QUARTZITIC SANDSTONE (WILLYERPA QUARTZITE)	10	70	·005	1	1·5	1	40	80	·5	19	20	5	·76	340
1164189	331675	6402900	1					RED BROWN QUARTZITIC SANDSTONE (WILLYERPA QUARTZITE)	15	74	·005	1	2	1	5	40	·5	16	10	5	·56	580
1164190	331675	6402901	1					MILKY VEIN QUARTZ from joints in Apilla Tillite			·005	1	1	1	5	8	·5	15	5	5	·26	380
1164191	332430	6403580	1					BLUE-GREY MASSIVE CALCRETIZED DOLOMITE (TINDELPINA SHALE)	5	90	·005	1	·25	1	20	70	·5	7	5	5	2·1	110
1164192	332540	6403850	1					MILKY VEIN QUARTZ from joints in WILLYERPA QTZITE			·005	1	·5	1	5	3	·5	6	5	5	·20	66
1164193	332600	6403900	1					DOLOMITE / DOLOMITIC SANDSTONE (TINDELPINA SHALE)			·005	1	·25	1	20	19	·5	8	5	5	1·8	390
1164194	331510	6403290	1					RED BROWN QUARTZITIC SANDSTONE (WILLYERPA QUARTZITE)	5	70	·005	2	3	1	50	61	·5	16	10	5	2	680
1164195	331340	6403835	1					LIGHT RED BROWN MATRIX COMPONENT FROM BOULDER TILLITE (APILLA TILLITE)	10	85	·005	1	1·5	1	30	19	·5	10	5	5	·50	74

C.R.A. EXPLORATION PTY. LTD. - ROCK SAMPLE FIELD DATA SHEET.

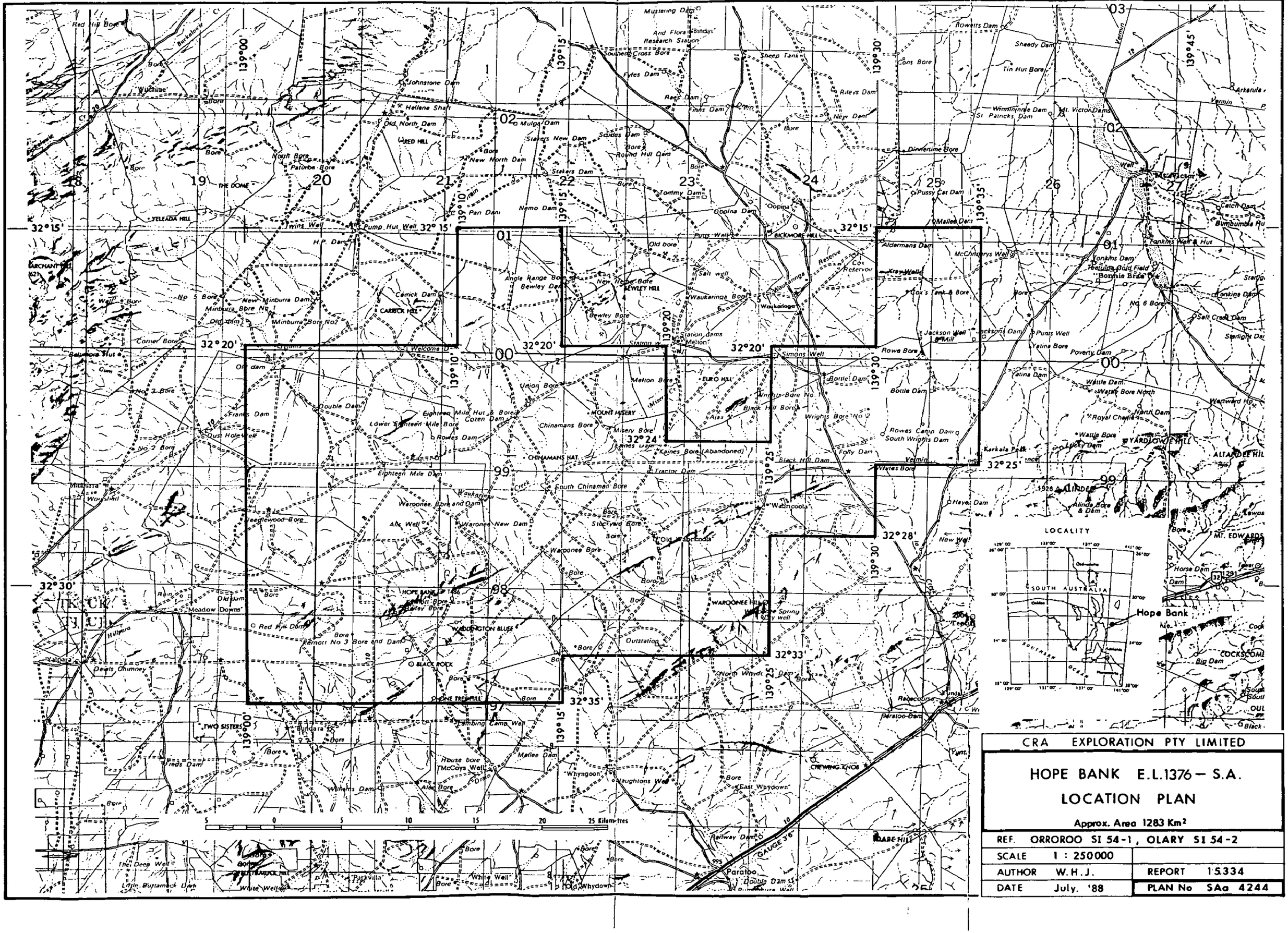
Area: HOPE BANK EL1376 Collected: D.C.P
Map ref: ORRORDD Date collected: 15/6/88
Photo name: KOONAMORE Date to lab:
Run No: 4/110 D.P.O. No: 37542

Analysed by: ANALYTICAL SERVICES Lab. report no: 40731
Date anal. rec:
Plan no: SAa 4950
C.R.A. report no:

Sample type: 1. Chip. 2. Float 3. Channel. 4. Panel.
Test: 1. Chemistry 2. Duplicate 3. Thin section 4. Polished section.

Sample Number	COORDINATES A.M.G/Long./Lat./Local EAST	NORTH	SAMPLE TYPE	WIDTH (m)	AREA (sq.m)	No. CHIPS	TEST	ROCK DESCRIPTIONS	MAG SUS SI x 10^{-3}	SCINT c.p.s	Au	As	W	Sn	Pb	Zn	Ag	Cu	Ni	Co	U	Mn
								ANALYSIS METHOD			F/AAS	ICP	ICP	ICP	AAS	AAS	AAS	AAS	AAS	AAS	ICP	AAS
								DETECTION LIMIT (ppm)			0.01	2	0.5	2	10	1	1	1	10	10	0.02	1
											Metal Content (ppm)											
1164196	331715	6404600	2		40			GREY WHITE QUARTZ FLOAT			.005	6	1	1	10	48	.5	13	10	5	1.9	630
								with SILTSTONE FRAGMENTS.														
1164197	331730	6404550	2		35			IRONSTONE (LATERITE??)			.005	2	2	14	1100	470	.5	160	90	30	6.2	480
								FLOAT with sample 1164196														
								(TERTIARY LATERITE)														
1164198	331225	6405225	1					BLUE-GREEN DOLOMITIC	10	85	.005	8	1	1	5	41	.5	18	5	5	2	330
								SILTSTONE with CALCRETE														
								(TINDELPINA SHALE)														
1164199	331200	6405330	1					BLUE-GREEN DOLOMITIC	15	70	.005	6	.5	1	20	44	.5	12	5	5	2.5	380
								SILTSTONE														
								(TINDELPINA SHALE)														
1164200	331280	6405390	2					BUFF-YELLOW WEATHERED	5	55	.005	4	1	1	10	46	.5	22	5	5	2.3	410
								DOLOMITIC?? SANDSTONE														
								(TINDELPINA SHALE)														

00199



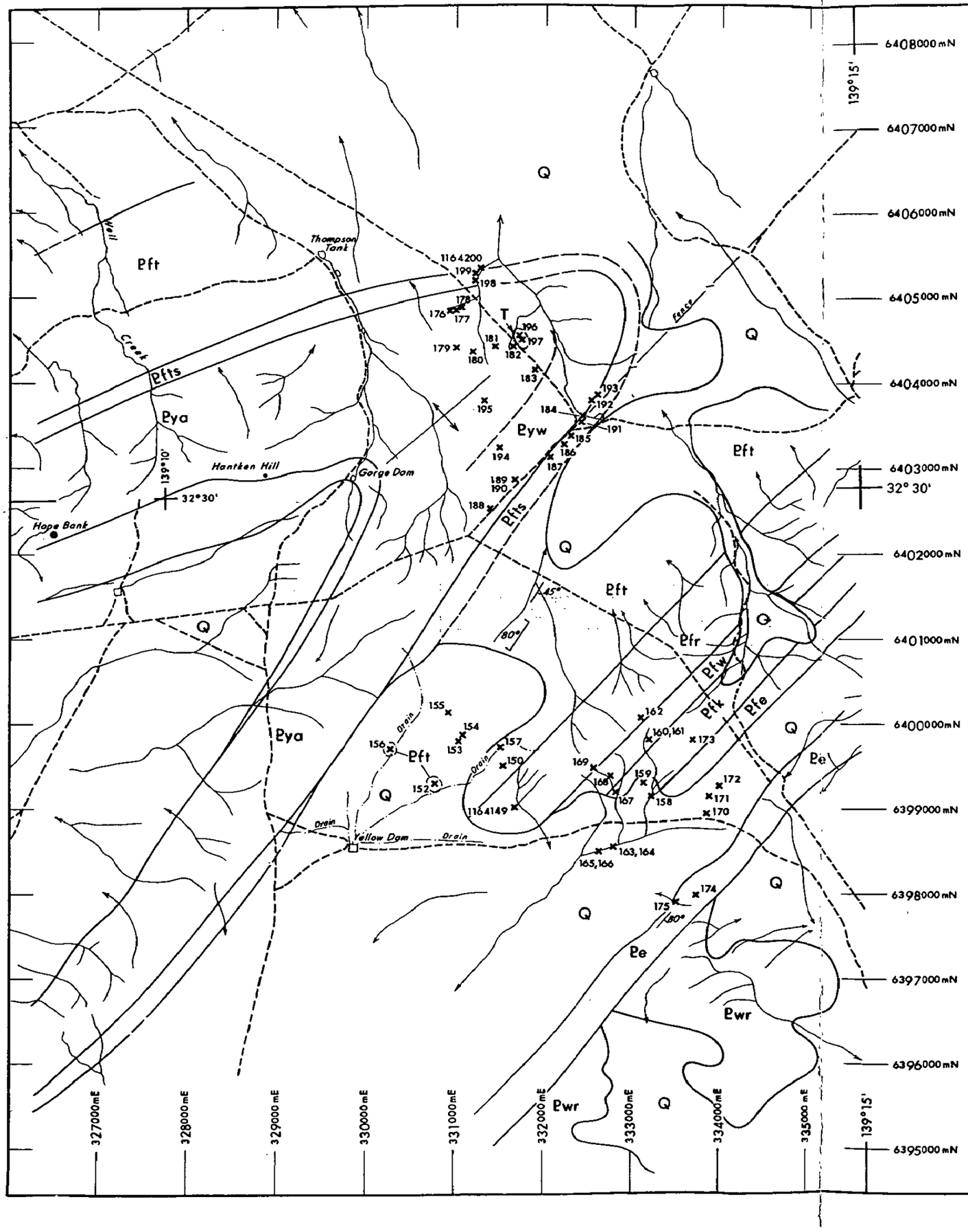
CRA EXPLORATION PTY LIMITED

HOPE BANK E.L.1376 – S.A.

LOCATION PLAN

Approx. Area 1283 Km²

REF.	ORROROO SI 54-1, OLARY SI 54-2		
SCALE	1 : 250000		
AUTHOR	W.H.J.	REPORT	15334
DATE	July. '88	PLAN No	SAa 4244



LEGEND

QUATERNARY
- Q — Scree, alluvium and sand spreads.

TERTIARY
- T — Lateritic and Silcreted gravels.

PROTEROZOIC (ADELAIDEAN)

WILPENA GROUP
- Pwr — Ulupa Siltstone (Nuccaleena Fmn.)

UMBERATANA GROUP

Elatina Sub-Group
- Pe — Undifferentiated

Farina Sub-Group
- Pfe — Enorama Shale.
- Pfk — Waukaringa Siltstone.
- Pfw — Willochra Formation.
- Pfr — Tarcowie Siltstone.
- Pft / Pfts — Tapley Hill Formation. Tindelpina Shale Member.

Yudnamutana Sub-Group
- Pya / Pyw — Wilyerpa Quartzite. Appila Tillite.

Burra Group
- Pb — Undifferentiated

- Geological boundary
- Geological boundary approximate
- 45° Strike and Dip
- 80° Cleavage
- Anticline

0 1 2 3 4 5 Km.

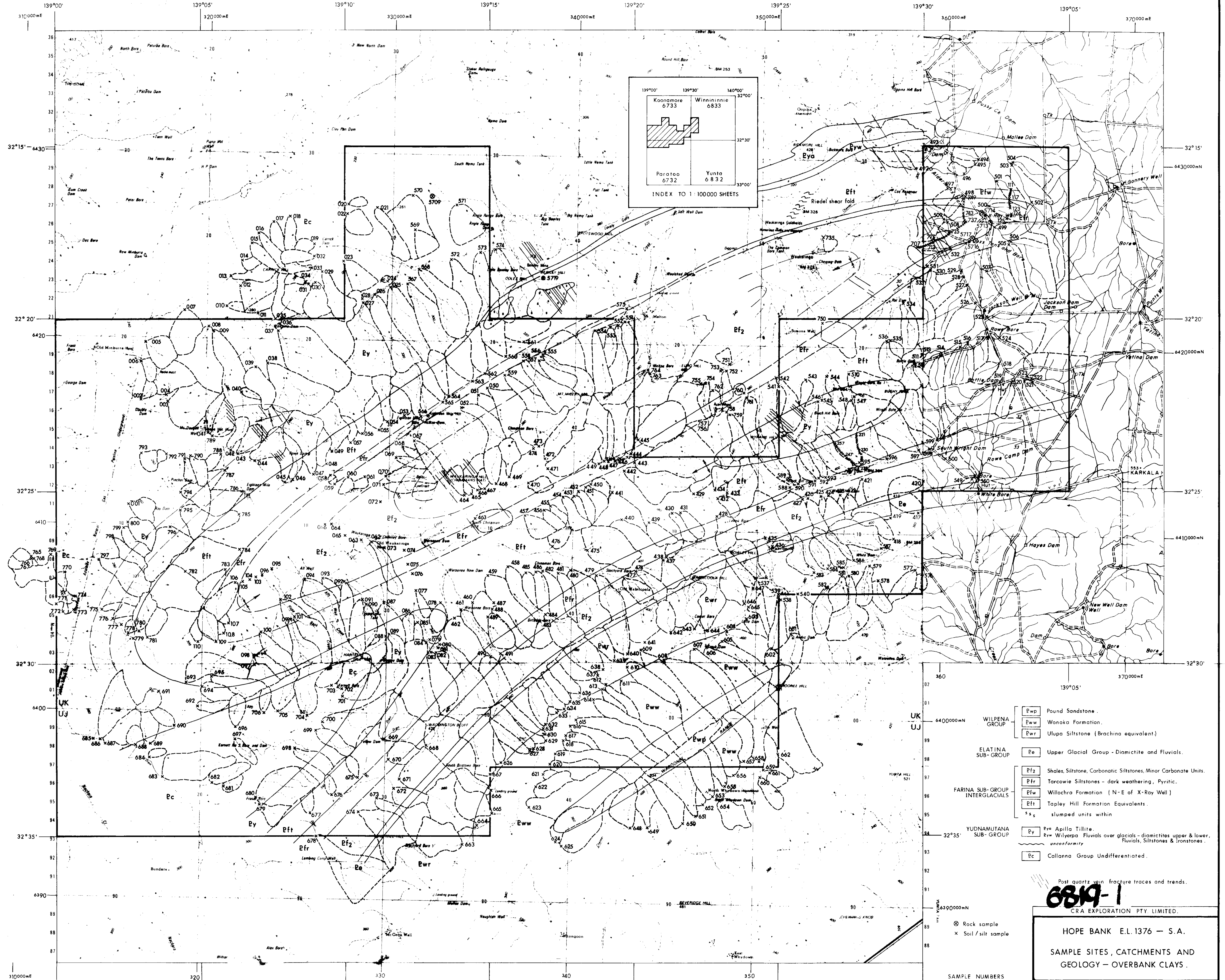
Sample Numbers 1164149 – 150
1164152 – 200

"HOPE BANK E.L.1376" 1:100000 Plan see Plan No SAa 4741

CRA EXPLORATION PTY. LIMITED

HOPE BANK E.L.1376 – S.A.
YELLOW DAM AREA
ROCK SAMPLE LOCATION PLAN AND GEOLOGY

Ref.	ORROROO SI 54-1		
Scale	1 : 50000	Drawn	R.D.D.
Author	D.C.P.	Report No.	15334
Date	June '88	Plan No.	SAa 4950



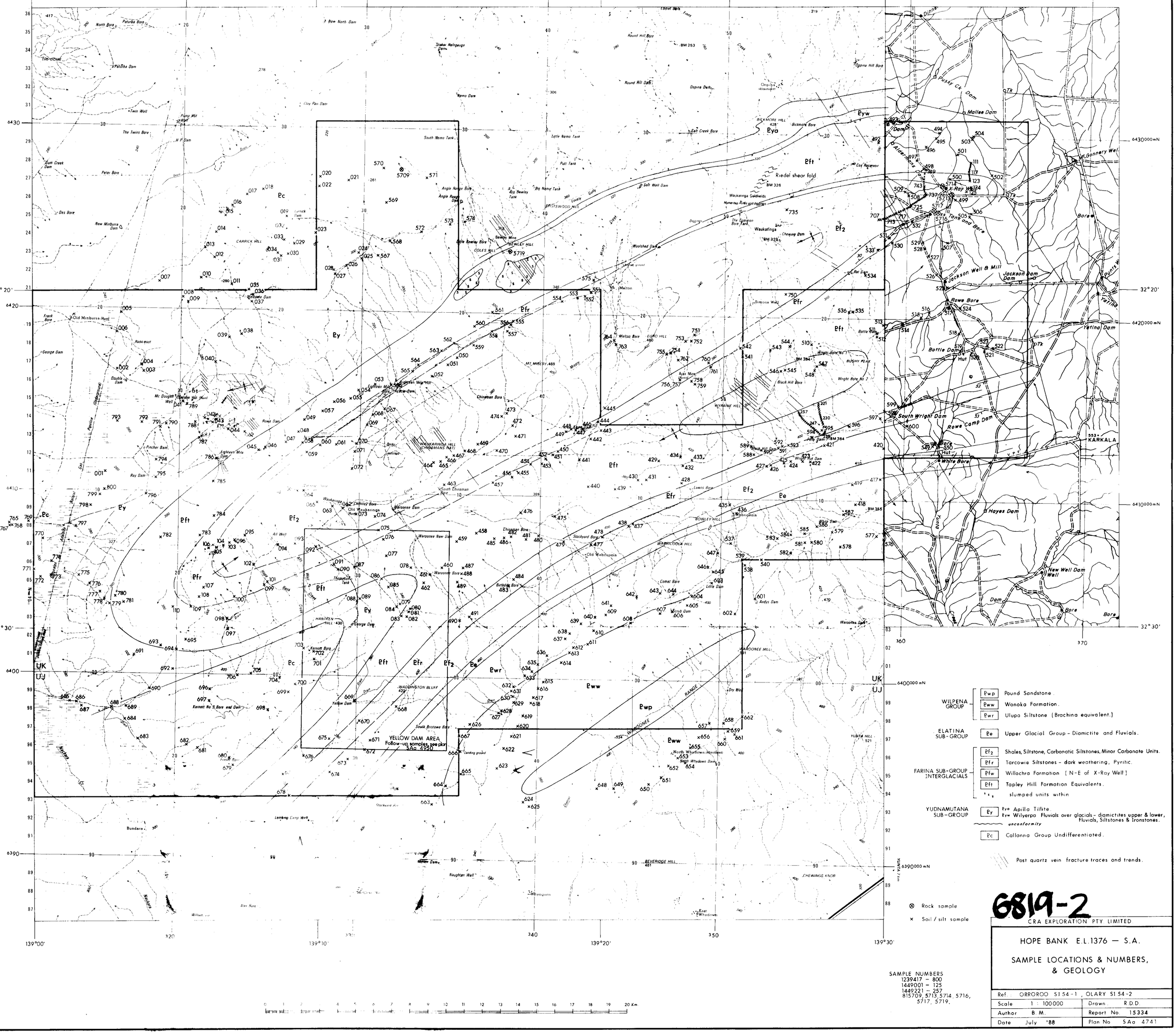
INDEX TO 1:100000 SHEETS
Koonamore 6733
Winnininnie 6833
Paratoo 6732
Yunta 6832
WILPENA GROUP
Ewp Pound Sandstone.
Eww Wonoka Formation.
Ewr Ulupa Siltstone (Brachina equivalent.)
ELATINA SUB-GROUP
Ee Upper Glacial Group - Diamictite and Fluvials.
FARINA SUB-GROUP INTERGLACIALS
Ef2 Shales, Siltstone, Carbonatic Siltstones, Minor Carbonate Units.
Efr Tarcowie Siltstones - dark weathering, Pyritic.
Efw Willochra Formation (N-E of X-Ray Well)
Eft Tapley Hill Formation Equivalents.
slumped units within
YUDNAMUTANA SUB-GROUP
Ey Eya Apilla Tillite.
Eyw Wilyerpa Fluvials over glacials - diamictites upper & lower, Fluvials, Siltstones & Ironstones.
unconformity
Ec Callanna Group Undifferentiated.
Post quartz vein fracture traces and trends.
6819-1
Rock sample
Soil / silt sample
SAMPLE NUMBERS
815709, 5713, 5714
5716, 5717, 5719
1239417 - 800
1449001 - 125
1449221 - 257

CRA EXPLORATION PTY. LIMITED.

HOPE BANK E.L. 1376 — S.A.

SAMPLE SITES, CATCHMENTS AND GEOLOGY — OVERBANK CLAYS.

Ref.	ORROROO SI 54-1; OLARY SI 54-2		
Scale	1 : 100 000	Drawn	R.D.D.
Author	B. M.	Report No.	15334
Date	July '88	Plan No.	SAa 4742



SAMPLE NUMBERS
1239417 – 800
1449001 – 125
1449221 – 257
815709, 5713, 5714, 5716, 5717, 5719.

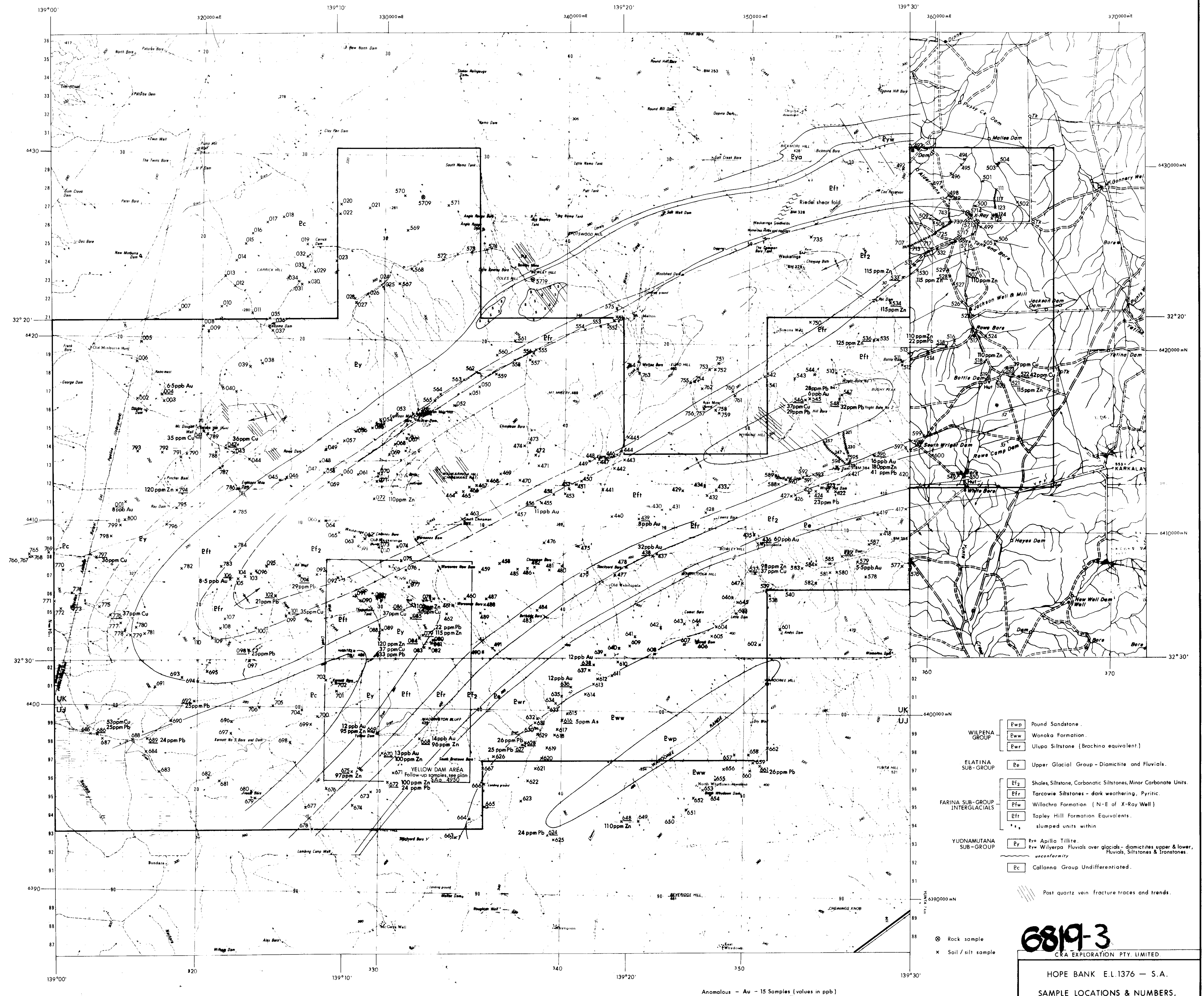
6819-2

CRA EXPLORATION PTY LIMITED

HOPE BANK E.L.1376 — S.A.

SAMPLE LOCATIONS & NUMBERS, & GEOLOGY

Ref. ORROROO SI 54-1, OLARY SI 54-2	
Scale 1 : 100000	Drawn R.D.D.
Author B.M.	Report No. 15334
Date July '88	Plan No. SAa 4741



WILPENA GROUP
Pwp Pound Sandstone.
Pww Wonoka Formation.
Pwr Ulupa Siltstone (Brachina equivalent.)
ELATINA SUB-GROUP
Pe Upper Glacial Group - Diamictite and Fluvials.
FARINA SUB-GROUP INTERGLACIALS
Pf2 Shales, Siltstone, Carbonatic Siltstones, Minor Carbonate Units.
Pfr Tarcowie Siltstones - dark weathering, Pyritic.
Pfw Willochra Formation (N-E of X-Ray Well)
Pft Tapley Hill Formation Equivalents.
slumped units within
YUDNAMUTANA SUB-GROUP
Py Pya Apilla Tillite.
Pyw Wilyerpa Fluvials over glacials - diamictites upper & lower, Fluvials, Siltstones & Ironstones.
unconformity
Pc Callanna Group Undifferentiated.
Post quartz vein fracture traces and trends.
Rock sample
Soil / silt sample
Anomalous - Au - 15 Samples (values in ppb)
" Zn - 21 Samples
" Cu - 13 Samples
" Pb - 19 Samples
" As - 1 Samples
(values in ppm)
SAMPLE NUMBERS
1239417 - 800
1449001 - 125
1449221 - 257
815709, 5713, 5714, 5716, 5717, 5719.
YELLOW DAM AREA
Follow-up samples, see plan SAa 4850
6819-3

CRA EXPLORATION PTY. LIMITED

HOPE BANK E.L.1376 — S.A.

SAMPLE LOCATIONS & NUMBERS, GEOLOGY with ANOMALOUS STREAM SEDIMENT GEOCHEMISTRY

Ref.:	ORROROO SI 54-1, OLARY SI 54-2		
Scale	1 : 100000	Drawn	R.D.D.
Author	D.C.P.	Report No.	15334
Date	July. '88	Plan No.	SAa 4853