SEL 7439

FINNISS RANGE, NORTHERN TERRITORY

SUPPLEMENTARY ANNUAL REPORT
FOR
PERIOD ENDING 20 MAY 1992

BY

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FOR

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October 1992
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Summary

This Supplementary Annual Report for SEL 7439 was requested by the N.T Department of Mines and Energy in order to supply additional information on field sampling locations, methods and results. The report has been compiled with data supplied by Corporate Development Pty Ltd staff.

1. Introduction

This report by Consulting Geologist, John A Earthrowl, is a supplement to an earlier report submitted by the tenement holder. (Chrisk Sept. 1992)

This report describes in more detail with maps, the field activities carried out on SEL 7439 for the year ending 20 May 1992. The reader is referred to (Chrisk Sept. 1992) for details of

* Location and Access
* Geological Setting
* Exploration History
* Resource Potential
* Mining Plans

1.1 Sources and Acknowledgements

The author visited SEL 7439 on 28/09/92 to sight as many target pegmatites as possible, examine sample sites and watch sample methods used in the field. The tour also allowed a familiarization of the regional setting of the Tenement. The author visited the following pegmatite prospects; Sandra, Martins, Turners, TW4, TW5, Saffums 1, Fred 1, Saffums 2. All of this was done accompanied by Mr. John Crago, Field Technician for Corporate Developments Pty. Ltd.

Mr. Crago has vast experience in exploration methods for tin- tantalum from working in North Queensland, southwestern Western Australia and the Northern Territory. His and the authors Curriculum Vitae are included in the Appendix of this report.

This supplementary report, of necessity, has been compiled using data from (Chrisk Sept. 1992) as well as from original field data supplied by Mr. J. Crago and to a small extent from the authors brief visit.
2. Current Exploration Program

2.1 Target
The primary target mineralization on the tenement is tantalite in insitu pegmatite, eluvium or alluvium form. The presence of associated tin and lithium minerals is recognised but not targeted.

2.2 Planned Program
The 1991/92 program in decreasing order of priority was defined as follows:
1. To locate and sample new pegmatites.
2. To further test known pegmatites to define those high in tantalum.
3. To carry out volume / grade calculations on known eluvial deposits.
4. To locate and test potential alluvial deposits.

2.3 Work Completed and Methods Used
During the year, 12 known pegmatites were subjected to various types of sampling.
* 8 of the pegmatites produced 57 rock samples
* All of the pegmatite eluvials were sampled producing 209 samples.

In addition some paleochannel and modern Quarternary, alluvium sites were sampled.

More than half of the area of SEL7439 was traversed by vehicle and on foot searching for new pegmatites.

2.3.1 Sampling Methods
Except for those examples that were assayed by Classic Laboratories Ltd (Appendix 2) all samples were processed by J. Crago using orthodox tin- tantalum heavy mineral separation methods.

A consistent 6 litre of rock / soil is gathered from each site. This is wet-panned using a 3 ltr plastic dish and the volume of produced heavy minerals estimated accurately. If visual examinations of the ‘heavies’ shows significant tin- tantalite mineralisation the heavies are acid washed in a zinc crucible. This treatment with HCl acid differentiates the cassiterite from the tantalite. Further lens examinations of any tantalite allows J. Crago to estimate the Nb : Ta ratio based on mineral form.
2.3.2 Regional Exploration
J. Crago carried out regional exploration for new pegmatites in two main areas:

1. Northern Area: between the Long Valley and Range faults traversing across the strike of pegmatite linearity.

2. Southern Area: the four southern blocks of the SEL, 120°55' to 120°57's and 130°46' to 130°48'E, similarly traversing eastwest across the likely strike of any pegmatite.

Samples were taken wherever any outcrop/ sub-outcrop or rubble of quartz, quartz-muscovite or greisen was encountered - the possible surface expression of a concealed pegmatite.

A total of 74km of carborne and 120km of footborne traversing was done producing 140 samples.

2.3.3 Pegmatite Sampling
Table 1 lists the 8 mineralised pegmatites that were systematically sampled in 1991/92 to produce 57 rock samples.

Pegmatites were sampled either on trench walls or from excavated material depending on access.

Channel samples were 15 cm wide, 5 cm deep and a maximum of 1 metre long.

An arbitrary 30 metre depth limit has been used in volume calculations of insitu pegmatite material.

2.3.4 Eluvium Sampling
209 Eluvium samples were taken during the year, some from each of the 12 mineralised pegmatite samples in 1991/92.

Samples of eluvium were always taken from 50cm deep holes to avoid the near surface tantalite enrichment. They can be sited over the pegmatite or on the adjacent flanks.

2.3.5 Alluvium Sampling
The potential for alluvial Ta/Sn deposits being present in the area has been recognised for years.
Paleochannels have been recognised at several locations viz Annies Prospect and east and west of Saffums. The distribution of alluvium from air photo interpretation is shown on Figure 2.

In 1991/92 J. Crago systematically sampled the alluvial deposits in Gorge Creek, 120° 54'E, 130° 45'E. Six samples were taken from along the 2.5km valley.

2.3.6 Sampling Controls
In order for J. Crago to maintain accuracy in his field Ta/Sn estimates a selection of heavy mineral (concentrate) samples were sent for XRF Ta/Sn assaying – thus allowing comparison between field and laboratory values. Locations of these samples are shown on the various maps. Appendix 2 gives assay results and Table 2 source of samples.

3. Results

3.1 General
The grades and volumes listed in these results are those estimated/calculated by J. Crago for Corporate Developments P/L using methods described elsewhere in this report.

3.2 Regional Exploration
The large reconnaissance program only resulted in the discovery of two new pegmatites.

1. One north of Gorge Creek at 120° 53.50"s
   130° 45° 30'E.

2. One immediately north of Fredd's 1 Prospect

Both had minor tantalite and less tin with tourmaline as an accessory.

3.3 Pegmatite and Eluvium Prospects
(Grades listed in kg per tonne)
At the Turner Mine, the 3 pegmatite and 20 eluvium samples taken to test the remnant possible are resulted in an estimate of 5,000m³ at 0.15 Ta₂O₅ (Figure 3).

At the Martins Mine, a volume calculation has shown that 10,000m³ of pegmatite and 5,000m³ of eluvials remain. (Figure 4).
The **Tw4 Prospect** returned grades of 0.04 Ta2O5 and 0.05 SnO2 from 8 pegmatite and 10 eluvium samples (Figure 5).

The **Tw5 Prospect** was sampled to establish grade and volume and gave 20 000m$^3$ at 0.02 Ta2O5 and 0.5 SnO2 (Figure 6).

From the **Annie Prospect** the five alluvial samples gave an average of 0.6 SnO2 and 0.02 Ta2O5 (Figure 7).

The **Freds1 Prospect** returned an indicated geological resource of 15-20 000m$^3$ at grades of 0.2 SnO2 and 0.15 Ta2O5 from 38 samples (Figure 8).

The **Freds 2 Prospect**, tested with three pegmatite and 6 eluvial samples, is estimated to contain 10 000m$^3$ of 0.1 Ta2O5. (Figure 9).

The three eluvial samples from the **Chiastolite Prospect** produced an average of 0.1 Ta2O5 from a volume of 1 000m$^3$. (Figure 10).

The **Saffums 1 Mine** eluvials on the eastern flank of the main pegmatite averaged 0.15 Ta2O5, 0.2 SnO2 from 15 samples (Figure 11).

The **Saffums 2 Mine** 25 eluvium and 3 pegmatite samples averaged 0.15 Ta2O5. Volume calculations 10,000m$^3$ eluvials and 2,000m$^3$ pegmatite (Fig 12).

The **Sandras Mine**, deeply weathered pegmatite averaged 0.04 Ta2O5 and 0.25 SnO2 from 52 samples. Volume calculation was 15,000m$^3$ (Fig 13).

**3.4 Alluvium Samples**
The six samples from Gorge Creek produced no significant Ta2O5 or SnO2 values.

**3.5 Assay Results of Control Samples**
The results indicate that the J. Crago panned heavy mineral grade estimates are sufficiently accurate for geological reserve estimates.

His ability to differentiate tin from tantalum by acid wash and then the Niobium / Tantalum ratio by visual inspection saves considerably on assaying costs.
4. Conclusions

The 1991/92 field program has almost been completed as planned. The extensive regional exploration was unsuccessful in locating any new significant mineralised pegmatites.

The program of pegmatite and pegmatite eluvium sampling has corroborated previous years sampling and mining results.

The alluvial sampling program has been least successful.

5. Expenditure

The total expenditure for 1991/92 in SEL 7439 has been $20,420. Details are given in Table 3.

6. Recommendations

In anticipation of an increase in the tantalum price from the current US$30-33 per lb, further work in SEL 7439 and environs is warranted. Further regional prospecting using satellite imagery, conventional and infra-red photography should be used.

The auger drill, expected to be available late 92, is planned to test for on strike continuation of known pegmatites as well as potential alluvial areas.

7. Year 1992/93 Program and Budget

A proposed budget to complete the program listed in Recommendations is as follows:

- Contact Field Personnel: 7250
- Vehicles / Auger Rig: 3000
- Laboratory Costs: 500
- Travel / Accommodation: 2000
- Consumables: 500
- Darwin Overheads: 500
- Adelaide Overheads: 300

**TOTAL $14050**
REFERENCES

SEL 7439, 20pg
Unpublished Report
N.T. Dept of Mines and Energy

Chirs G.M. (June 1992)  Annual Report
SEL 7439, ELS 4493, 6805, 7079, 7622,
MCN 1052, 3216-3218. 16pg, 4pg App.
Unpublished Report
N.T. Dept of Mines and Energy

ELS 4906, 4954, 5469, 6217
16pg + plans
Unpublished Report
N.T. Dept of Mines and Energy

Chirs G.M., Cohen C.J. (Sept 1990)  Annual Report
ELS 4906, 4954, 5469, 6217, 6805
33pg, 7 Fig
Unpublished Report
N.T. Dept of Mines and Energy

Chirs G.M. (Dec 1987)  Annual Report
EL 4954 11pg, 2 Fig
Unpublished Report
N.T. Dept of Mines and Energy

EL 2613 9pg, 8plans, 2 Fig
Unpublished report
N.T. Dept of Mines and Energy
SEL 7435
Showing 7 Relinquished Blocks as of 3 June '92

1:50,000

SEL 7439

FIG 1
Sample Prefixes
TP = Turners Pyrrhotite 0-3
TE = Turners Eluvials 1-20.

Volume calculation (combined) 5,000 m³

Base map by
Talmina Trading P/L
Nov. 1984

Sample Locations
Turners

SEL 7439
1991/92 Annual Rpt

Fig 3
Sample Prefixes
- HP = Martins Pegmatite 1-6
- ME = Martins Eluvials 1-20.

Volumes
10,000 m³ Pegmatite
5,000 m³ Eluvials

Control samples taken at ME 20.
Sample Prefixes
TW4P = TW4 Pyrometites 1-8
TW4E = TW4 Eluvials 1-10

Map traced from field data
Supplied by J. Crago

Control Samples Taken at 5, x7,

Sample Locations
TW4

SEL 7439
1991/92 Annual Rpt.: FIG 5
Sample Prefixes

TWSP = Pegmatite  ①-⑫
TWSE = Eluvial  ①-⑳

Volume ≈ 20,000 m³
at 0.5 SnO₂
0.02 Ta₂O₅ kg/kt.

Control Samples taken at
③, ⑥, ⑮ and ⑳.

Map traced from field data supplied by JCRago.

Sample Locations

TW5

SEL 7439
Sample Prefix AE = Annie Eluuals
5 samples averaged 0.05 g/t Cu 0.02 g/t Ag/kg
Control sample at x3.

Base Map by Talmina Trading P/L
Nov 1984 EC 2613

Sample Locations
ANNIE

Sel 74/51 1991/92 Ann. Rep
JAS OKE 92 FIG 7
Sample Prefixes:
- F1P = Freds 1 Pyrrhotite 0–8
- F1E = Freds 1 Eatans 1–30

Control Samples taken at E4, 11, 12, 20, 22, 25, 37

Base Map by
Talmina Trading P.L.
Nov. 1984
Ex E2 2613

Sample Locations
FREDS 1
Sample Prefixes
F2 P = Freds 2 Pegmatite 1-6
F2 E = Freds 2 Elluvials 1-6

10,000 m² at 0.1 TzSmR Bq/kg

Control Samples at 1, 2.

From Map by Talmina Trading Plc.
Nov. 1984 EC 26/13

LEGEND
F2P = Brunel Cx Formation
G = Chalcopyrite scheelite
P = Pegmatite - undivided
S = Strike and dip of stratigraphy
C = Strike and dip of cleavage

Vertical shaft and depth
Access track

SEL 7439
Sample Locations
FREDS 2
Oct 92
Fig 9
Sample Prefixes

C E E = Chiastolite Eluvials 1-3

Volume 1000m³ e 0.1 T₂O₅ K/st
Map traced from field data supplied by J. Crago

Sample Prefixes
S2P = Saffum 2 Pegmatite 1-3
S2E = Saffum 2 Eluvial 1-25
Volume: 2,000 m³ Pegmatite
10,000 m³ Eluvium
$0.15/kg
$3/kg

Sample Locations
SAFFUMS 2

SEL 7439

FIG 12.
Sample Prefixes:
SSP = Sandia Pyromylites
SSE = Sandia Eutravials
1 : 40
Volume Calculation: 15,000 m³
Combined Grade: 0.25 %O₂
0.04 %CO₂, R.16

Control Samples at 12.
### Table 1: SEL 7439 1991/92 Summary of Sampling

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<th>Prospect</th>
<th>Sample Type</th>
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<td>Saffms 2</td>
<td>3 S2P 1-3</td>
<td>25 S2E 1-25</td>
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<td>12 S5P 1-2</td>
<td>40 S5E 1-40</td>
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<td>Goerge Creek</td>
<td>6 samples</td>
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Reconnaissance: 140 samples from 74 km carbone, 120 km footborne

Control Samples: 19 samples (see Appendix 2)
### Table 2

**Control Sample Assay Results**

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**Notes:**
- Grams
- ppm/2
- ppm/4
- ppm/6

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**Sec 7439**

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<td>Other</td>
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<td>SUBTOTALS</td>
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TOTAL
LOCAL OFFICE OVERHEADS
HEAD OFFICE OVERHEADS
GRAND TOTAL

$20,420

TABLE 3
NORTHERN TERRITORY OF AUSTRALIA

MINING ACT

EXPLORATION LICENCE

EL No. 7439

Corporate Developments Pty Ltd are hereby licensed, for a period of three (3) years from the date hereof, to explore in accordance with the provisions of the Mining Act, the regulations thereunder and the terms and conditions specified in the First Schedule, all the area of land delineated in red in the Second Schedule excluding therefrom all land vested in the Commonwealth and all radio repeater sites held by the Australian Telecommunications Commission.

C P SMITH
Principal Registrar
as delegate of the Minister

DATE 21/5/91

FIRST SCHEDULE

1. The licensee shall ensure that a minimum amount of $12,000 is expended in carrying out exploration on the licence area during year one (1) of the licence.

2. The licensee shall comply with the provisions of and directions lawfully given under this Act and all other laws in force in the Territory in relation to his activities on the licence area.

3. Not later than one (1) month after the expiration of each 12 month period of this licence, the holder shall submit in writing a statement specifying the details of the exploration programme reflecting expenditure for the next year of the licence.

Appendix 1
## ANALYTICAL REPORT

<table>
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<tr>
<th>SAMPLE</th>
<th>Weight</th>
<th>Sn</th>
<th>Nb</th>
<th>Ta</th>
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<td>6100</td>
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<td>C2</td>
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<td>1200</td>
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<td>7200</td>
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<td>P5</td>
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<td>3.05%</td>
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<td>WS06</td>
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### UNITS

- **grams**
- **ppm**
- **ppm**
- **ppm**

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<th>DET.LIM</th>
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<td>XRF2</td>
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<tr>
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<td>XRF2</td>
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<tr>
<td>100</td>
<td>XRF2</td>
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</tbody>
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---

**APPENDIX 2**
Arrived in the Northern Territory 19.1.67.

Fished for Barramundi and hunted crocodiles with J. Wilson around NT coast.

May 1967 commenced work at Rum Jungle as field assistant for Territory Enterprises Pty.

August 1967 resumed hunting with J. Wilson.

Spent wet season 1967-68 on wharf.

March, April, May 1968 fishing with J. Wilson.

June 2 1968 purchased a share in David Lease, Mt Wells.

With J. Langley, produced 900 kilograms alluvial tin.

December 1968 pegged Mavis tin mine and commenced work at Moline as mill operator, Pb Zn.

September 1969 mined 30 tonnes at Mavis for 0.5 tin concentrate.

Met S.B. Hyman at Albury NSW and was employed to acquire prospects in the Northern Territory.

About March 1969 acquired option over Mt Wells tin mine and pegged adjacent alluvials.

June 1969 commenced rehabilitation of the old workings and the east lode drive.

Acquired option over Maranboy tin field from H. Brennan.

1979 with G.S. Beatty pitted and tested Mt Wells alluvials with R. Mookey sampled underground workings and outcrops at Mt Wells.

1972 Jingellic scaled back Northern Territory exploration.

April 1972 commenced prospecting on own at Maranboy and produced 70 tonnes ore from King River.

1973 took option over Mt Bonney for Horizon Exploration and produced tin from old tailings at Mt Wells.

Took option for Jingellic over Pine Creek, Union Reefs and Spring Hill gold mines whilst on retainer from Jingellic who were attempting to joint venture gold properties.

In 1974 and 1975 mined tin ore at Mt George and gold ore from Union Reefs and continued treating tailings at Mt Wells.

In 1976 commenced work at Goldsworthy WA and in September returned and mined 130 tonnes tin ore near Mavis.
1977 worked on grade control at Emerald Hill for B. Porter and prospected for Sn and Ta at Hillside, Marble Bar.

In 1977 commenced grade control at Collia for Ken Day. Took out A to P at Bynoe for Sn Ta. In 1978 secured option over Pine Creek, Union Reefs with Ken Day. In 1979 prospected Horseshoe Creek for Ken Day. Grade controller at Mt Wells alluvial mining operations from December 1979 to October 1980, during which time 248 tonnes of tin concentrate were produced.

Went to North Qld and looked for tin mines for sale. With R. Birrell carried out first systematic prospecting at Bynoe for Greenex. Also inspected Kangaroo Creek, North Qld property and negotiated option from Ned Fitzgerald.

1981 grade controller at Tate River and continued prospecting Kangaroo Creek.

Joined Aurex NL and found Torwood heavy mineral deposit and with Ron Lees found Larsens Creek alluvial gold deposit in Cape York.

1985 evaluated Talmina properties for J. Benger and Robert Cleaver. Rejoined Ken Day as prospector for Territory Resources NL and found the east lode at Spring Hill.

1986 prospected and costeamed Copper Flower, Eva Valley. 1990 formed partnership with Andrew Jettner and commenced tenement acquisition at Maude Creek and Tooheys.

Undertook prospecting for Corporate Development Pty Ltd in 1991 and found Tooheys South for Trescoabe Pty Ltd.


Throughout 1992 continued prospecting for Corporate Developments in the Wingate Mountains and the Finiss Range areas.
SUMMARY CURRICULUM VITAE

JOHN ANTHONY EARTHROWL

PERSONAL

Residence  Lot 11 Windmill Road, Batchelor NT 0845
Mail       GPO Box 3307, Darwin, NT
Phone      (089) 760246 and (089) 818801
Born       28/01/41 UK, Arrived Australia 1965, naturalised 1981

PROFESSIONAL

Member of Australian Institute of Mining and Metallurgy

EDUCATION

1963 - 65  Master of Science (Applied), McGill University, Montreal Canada

1958 - 62  Bachelor of Science (Honours Geology), McGill University

1947 - 58  High School and Primary School Education in Canada, England and Germany

EMPLOYMENT

1988 - Current  Self Employed Consultant

1980 - 88  Resident Geologist, Total Mining Australia Pty Ltd
Darwin, NT. Supervising uranium exploration programmes throughout the NT mainly in the Pine Creek Geosyncline.
Maintaining contact with the NT Dept. of Mines & Energy, NT Geological Survey, Bureau of Mineral Resources, Northern Lands Council and the NT Chamber of Mines.

1977 - 80  Resident Geologist, Uranerz Australia Ltd, Darwin NT. Supervising uranium exploration programmes in the Rum Jungle Uranium Field.

1973 - 77  Self Employed and employed as consulting geologist

1971 - 73  Senior Geologist, International Nickel Company of Canada
1965 - 70  and subsidiaries in Australia, New Caledonia and British Solomon Islands Protectorate. Various projects for nickel laterite, nickel sulphides, base metals, Cu-Pb-Zn, uranium, Cu-Mo beach sands and asbestos.

1960 - 64  Various student jobs in Ontario, Quebec and Newfoundland Canada. Various student jobs in tourism/hospitality industry. Part-time tutor in minerology course.