ROEBUCK RESOURCES N.L. -

NORTH FLINDERS MINES LTD.

TENNANT CREEK JOINT VENTURE

THE ENTERPRISE-ESTRALITA PROSPECT

SUMMARY PROGRESS REPORT

ON EXPLORATION TO MAY, 1991

Prepared for
Roebuck Resources N.L.

by

K. Fox and S.B. Warne

July, 1991

Technical Report No. 216

CONTENTS

		Page No.
SUMMARY		4
CONCLUSIONS AND RECOMMENDATIONS		5 - 6
1.	INTRODUCTION	7
2.	WORK COMPLETED	8
3.	REVERSE CIRCULATION DRILLING	
3.1	Estralita West	9 - 10
3.2	Estralita Central	10
3.3	Estralita East	11
4.	DISCUSSION OF RESULTS AND POSSIBLE REMAINING TARGET POTENTIAL	
4.1	Estralita West	11 - 12
4.2	Estralita Central	12 - 13
4.3	Estralita East	13 - 15
4.4	Other areas	15
5.	REFERENCES	

FIGURES

Figure No. 1. - TENEMENT PLAN

Figure No. 2 - ESTRALITA WEST ZONE - Geological Plan - scale 1:500

Figure No. 3 - ESTRALITA WEST ZONE - Cross Section 1,135m.E. looking West - scale 1:250

Figure No. 4 - ESTRALITA WEST ZONE - Cross Section 1,165m.E. looking West - scale 1:250

Figure No. 5 - ESTRALITA WEST ZONE - Cross Section 1,225m.E. looking West - scale 1:250

Figure No. 6 - ESTRALITA CENTRAL AND EASTERN ZONES - Geological Plan - scale 1: 250

Figure No. 7 - ESTRALITA EASTERN ZONE - Geological Sketch Plan with plan projections of drill holes

Figure No. 8 - ESTRALITA CENTRAL ZONE - Cross Section 1,278m.E. looking West - scale 1:250

Figure No. 9 - ESTRALITA EAST ZONE - Cross Section 1,410m.E. looking West - Scale 1:250

Figure No. 10 - ESTRALITA EAST ZONE - Cross Section 1,420m.E. looking West - scale 1:250

Figure No. 11 - ESTRALITA EAST ZONE - Longitudinal projection B - B_1 looking North with interpreted limits of Ironstone and >1g/t gold values

APPENDICES

APPENDIX A: Geological and analytical logs for Roebuck Resources N.L. reverse circulation drill holes RC ES1 to RC ES7.

APPENDIX B: Geological and analytical logs for Tennant Creek Gold Limited reverse circulation drill holes ESRC 010, ESRC 011 and ESRC 012 completed in May, 1990.

SUMMARY

The Enterprise-Estralita prospect is located about 4 kilometres south of the town of Tennant Creek, Northern Territory. It covers a total area of 76.96 hectares and is held by Tennant Creek Gold Limited.

Between 1935 and 1960 the Enterprise Mine produced 205.24 kilograms of gold from 10,136.61 tonnes of ore at an average recovered grade of 20.25 grams per tonne. Recorded production from the Estralita prospect totals 1.27 kilograms of gold. Since mining ceased the prospect area has been explored by Western Nuclear (Australia) Pty Ltd. (1971 to 1977), CRA Exploration Pty. Limited (1984 and 1985), Tennant Creek Gold Ltd (1987), Metana Minerals N.L. (1988 and 1989), and again by Tennant Creek Gold Ltd in 1990.

In 1987, Tennant Creek Gold Ltd. drilled five R.C. holes in the Estralita East area. Hole EDP 4 intersected 12 metres averaging 17.26 grams of gold per tonne. In late 1988, Metana drilled 7 RC holes in this area. Two of these recorded "ore grade" mineralization: ESRC 02 intersected 8 metres averaging 9.22 grams of gold per tonne; and ESRC 04 intersected 4 metres averaging 18.24 grams of gold per tonne.

Except for Estralita East evidence of significant mineralisation was confined to anomalous rock chip sample geochemistry at Estralita Central.

Following detailed field evaluation Roebuck Resources N.L. entered into a joint venture agreement whereby it can earn a major equity by exploration expenditure. In April, 1991 Roebuck (S.B. Warne) remapped the geology of the Estralita Central and East area, and drilled 7 R.C. holes totalling 475 metres.

In the Estralita West area recent RC ES4 encountered 2 metres grading 2.02 grams of gold per tonne in an internal fault zone within the large ironstone body. Old workings appear to be located on parallel structures.

At Estralita Central drilling has so far failed to encounter significant mineralization although surface rock chip gold values of up to 2,245 ppb over 10 metres strike length have been recorded. Evaluation of results suggests that potential still exists for discovery of an easterly plunging gold deposit between the existing holes. This is not of high priority.

Drilling down dip and down plunge of the Estralita East deposit failed to encounter significant mineralization. Recent mapping suggests that a north-northeasterly trending fault zone disrupts the mineralized zone in the area of barren holes RC ES1 and RC ES6. Further drilling has been recommended, but is considered to be of low priority.

The various exploration programmes recommended in this report require a total expenditure of $15,850. Initial priority should be given to the Estralita Central and Eastern programmes with an estimated total expenditure of $10,100.

CONCLUSIONS AND RECOMMENDATIONS:

a) A number of quartz-hematite (-magnetite) ironstone bodies, together with brecciated chloritised sediment and silicified carbonate-talc-chlorite zones occur within the Enterprise-Estralita prospect area.

b) Until 1987 the only known significant gold mineralisation was the Enterprise Mine ore body. This occurs in the sheared footwall side of an ironstone lense. The gold occurs in the sheared and altered footwall rocks and only extends for a short distance into fractures in the ironstone.

c) The mode of occurrence of gold in fault or fracture zones within or adjacent to the margins of the ironstones is a common feature shared by most of the known deposits along the Noble's Nob - Skipper line.

d) The ironstone bodies occupy dilational zones within the fault related zones of alteration and brecciation.

e) Since 1987, three gold intercepts in the Estralita East area have indicated the presence of a small "pipe like" steeply east-southeasterly plunging gold deposit. This deposit is lensoidal or sigmoidal in section and is elongated parallel to and along the lower keel of an ironstone lens.

f) The Estralita East deposit appears to be located in a dilational structure at a junction between an east-west possibly D1 shear zone and a west-northwest trending D2 shear zone.

g) The drilling of holes RC ES1 and RC ES6 to test for down plunge extension failed to intersect either mineralization or the host shear zone. Recent mapping and data reinterpretation suggest that these holes may have penetrated a barren corridor created by a north-northeast trending fault with a downthrow of about 10 metres to the west. If RC ES2 deviated to the west like the above holes it could have passed beneath the target body.

h) Further drilling should be done to test this interpretation and a bedrock geochemical survey should be completed to provide accurate target delineation. This work is of comparatively low priority.

i) The Estralita Central zone represents a target for discovery of a gold deposit of Estralita East type with a similar plunge direction.

j) Assuming the 20 metres striking rock chip gold anomaly to be the surface target expression, then recent hole RC ES7 and previous hole ESP 13 could both have passed beneath the target and further drilling is warranted. This work is of comparatively low priority.

k) At Estralita West the drilling of holes RC ES3, RC ES4 and RC ES5, together with data reinterpretation suggest the ironstone to be a thick lense of "laccolithic" geometry.

l) The distribution of old workings and the RC ES4 intersection suggest that gold mineralization may be controlled by northeast or east-northeast trending fault and fracture zones within the ironstone body.

m) High cost close spaced drilling of the Estralita West area cannot be justified.

1. INTRODUCTION

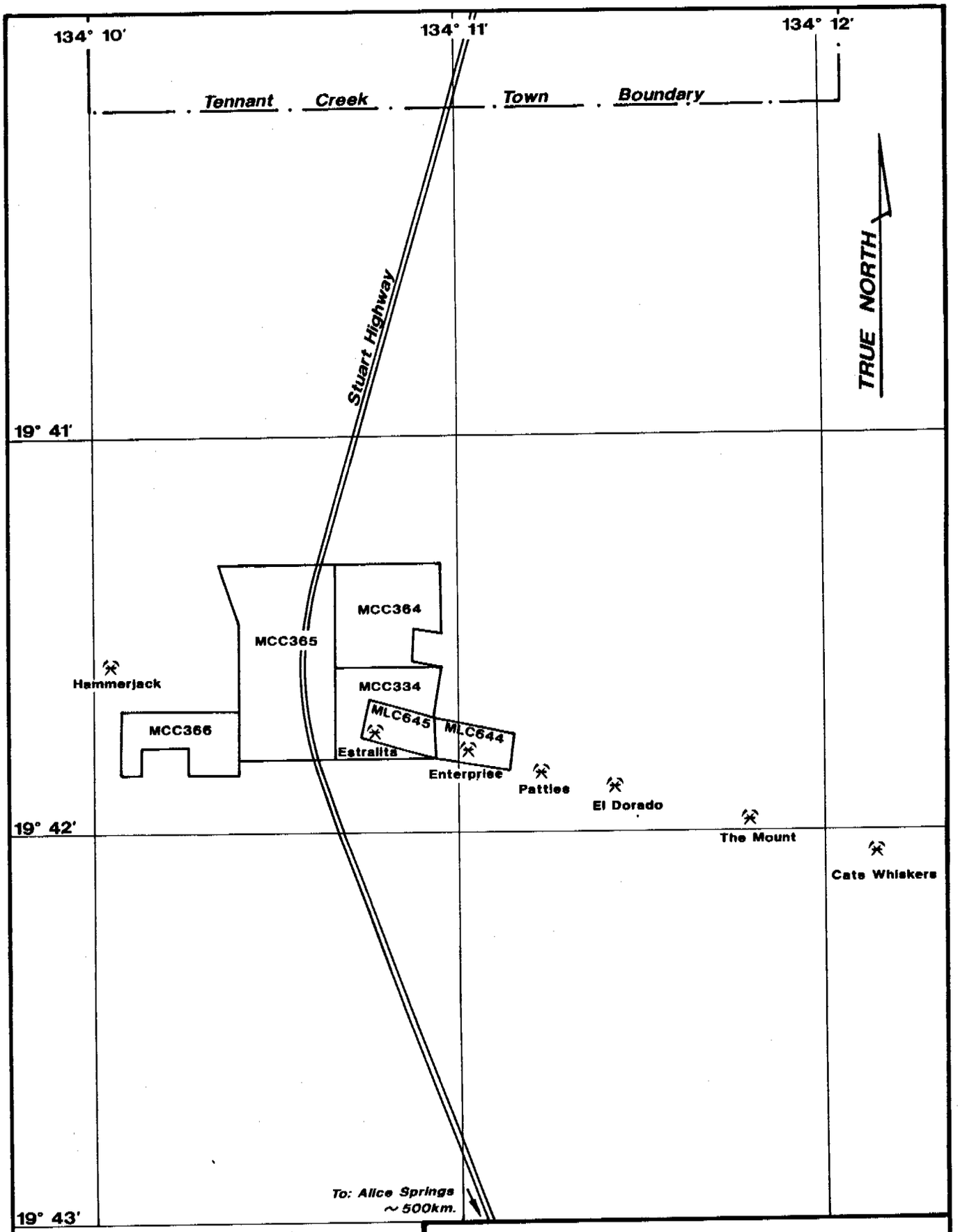
This prospect straddles the main Stuart Highway about 4 kilometres south of the town of Tennant Creek in the Northern Territory. It comprises two Mining Leases - MLCs 644 and 645, and 4 Mineral Claims - MCCs 334, 364, 365 and 366, covering a total area of 76.96 hectares (see Figure No. 1).

Tenure of the property is held by Tennant Creek Gold Limited, an unlisted public company. Roebuck Resources N.L. can earn a 25 percent interest in the prospect by expending $50,000 on exploration and can increase this equity by a further 35 percent by expending a further $300,000.

Although essentially this report has been prepared by K. Fox the programme reported on was supervised and mainly carried out by S.B. Warne. Authorship of the various plans and sections is as shown on the individual drawings, except for the interpreted ironstone contacts in Figure Nos 3 and 4. On these figures the geometry of the ironstone in a north-south orientated vertical plane has been altered by the writer on the assumption that it would remain approximately consistent with that indicated on the Figure No. 5 cross section, which is based on 5 drill hole intersections of the body.

The data presented in section 3 of this report has been prepared with the assistance of S.B. Warne.

The interpretations, conclusions and recommendations presented in section 4, and summarised in the Summary and Conclusions and Recommendations of this report were prepared by the writer and have been agreed with S.B. Warne.



500m 0 1km.

1 : 25 000

ROEBUCK RESOURCES N.L.

ENTERPRISE - ESTRALITA PROSPECT

TENEMENT & LOCATION PLAN

Author: K. Fox	Date: Aug. 1991	Report No:
Drawn: E.P.	SCALE 1 : 25000	Figure No: 1

2. WORK COMPLETED

Exploration prior to 1991

Apart from early prospecting pits, costeans and shafts, and the immediate vicinity of the Enterprise Mine workings no general exploration was done until 1971.

Between 1971 and 1977 a programme of geological mapping was completed by Western Nuclear (Australia) Pty. Ltd. and a single diamond drill hole 182 metres deep was drilled beneath the Enterprise workings.

In 1984 and 1985 the area was explored by CRA Exploration Pty Ltd. A programme of gridding, aerial photography, geological mapping and ground magnetic and gravity surveys was completed and 10 percussion holes totalling 424 metres and 5 cored holes totalling 470.9 metres were drilled.

In 1987, following geological appraisal Tennant Creek Gold Limited completed 9 reverse circulation drill holes totalling 587 metres. In 1988 a joint venture was negotiated with Metana Minerals N.L. Metana completed a programme of geological mapping, ground magnetics, and soil and some rock chip sampling prior to drilling 27 percussion holes totalling 1,032 metres, and 8 reverse circulation holes totalling 370 metres. In 1989, Metana withdrew from the joint venture and in 1990 Tennant Creek Gold Limited completed a small bedrock geochemical programme and an additional 3 reverse circulation holes totalling 163 metres.

Exploration During 1991

Following a field inspection in January 1991 a programme of geological mapping and reverse circulation drilling was planned.

This programme was completed in April 1991 and comprised: the drilling of 7 reverse circulation percussion drill holes (by Gomex) totalling 475 metres with two metres sample composites analysed for gold, bismuth, copper, lead and magnesium; and, geological mapping of the Enterprise Central and Eastern zones at a scale of 1:250.

Total expenditure to 31st May, 1991 has been $36,338.

3. REVERSE CIRCULATION DRILLING

The locations of the seven R.C. drillholes, RC-ES 1 to RC-ES 7, completed during the recent programme are indicated on the geological plans of the Estralita West Zone - Figure No. 2, and the Estralita Central and Eastern Zones - Figure No. 6.

3.1 Estralita West

a) RC-ES 5 was inclined at 60° towards 176° magnetic azimuth on section line 1135m.E; hole depth was 40 metres - see Cross Section Figure No. 3 and Appendix A.

This hole was drilled to test for a possible vertical dip for the southern sheared contact of the main western massive ironstone. The hole indicated that this contact dips to the north at about 65°; evidence of shearing was restricted to quartz veining at the southern ironstone/siltstone contact. No significant alteration was noted.

Analytical values are listed in the drill logs which appear as Appendix A, no significantly anomalous results were recorded.

b) RC-ES 4 was inclined at 60° towards 176° magnetic azimuth on section line 1165m.E; hole depth was 80 metres - see Cross Section No. 4 and Appendix A.

This hole was sited to test the base of the main western ironstone below the old Estralita workings, and for the possible presence of a mineralized shear zone below the footwall of the main ironstone.

At surface the Estralita workings follow an approximately vertical north-east trending, blocky fracture or fault zone in massive hematite. It is believed that mining was confined to very small pockets of high grade secondary gold enrichment which had survived intense near surface leaching.

RC-ES 4 intersected massive hematitic ironstone between 3 metres and 39 metres down-hole depth, and then weathered siltstones with finely disseminated hematite decreasing downwards. There was no evidence of major footwall faulting or alteration, and no other ironstone bearing zone was encountered below the main footwall contact.

Anomalous gold values, i.e. 0.1 grams per tonne or greater, were encountered between 14 and 18 metres, 24 and 26 metres, and 30 and 36 metres. The section between 14 and 16 metres down-hole depth was significantly mineralized with 2.02 grams per tonne gold and 4890 ppm bismuth. Within the remainder of the ironstone the bismuth values averaged 29 ppm compared to 1 ppm in the siltstones - see Appendix A.

c) RC-ES 3 was inclined at 70° towards 176.5° magnetic azimuth along section line 1 225m.E; hole depth was 100 metres - see Cross Section Figure No. 5 and Appendix A.

Percussion drill hole number PD85 ES9 was drilled by CRA in 1985. This hole was located about 50 metres south-east of RC-ES 3 and intersected a talc-chlorite-dolomite alteration zone associated with massive specular hematite and magnetic ironstone.

RC-ES 3 was sited to test the base of the main Estralita ironstone, previously defined on this section line by percussion holes ESP 9 and ESP 10, and by a CRA diamond drill hole DDH84 ES1, up plunge from the PD895 ES9 alteration zone. Ground magnetic data suggests that a magnetic body is located in the area tested by this hole.

An 18 metre intersection length of talcose sheared zone in fine grained arkosic sandstones occurs between 16 metres and 34 metres down-hole depth. This appears to be the strike extension of the shear zone which hosts the Target "F" ironstones - see Figure No. 2.

A narrow 3 metre long section of magnetite rich ironstone between 73 metres and 76 metres down-hole depth was the only expression of the main ironstone body. This suggests the ironstone to be a thick lens which thins rapidly to both north and south as indicated in Figure No. 5.

A possible low angle fault displacement along the ironstone footwall contact is suggested by an extensively brecciated section in DDH84 ES1.

Dominantly fresh, fine grained, greenish greywackes and sandstones occurring below 76 metres down-hole depth in ES-RC 3 appear to be identical to the footwall rocks described in CRS's log for DDH84 ES1.

Anomalous gold (0.25 ppm) and bismuth 29 ppm) values were confined to the interval between 72 metres and 74 metres down-hole depth.

3.2 Estralita Central

a) RC-ES 7 was inclined at 60° towards 176° magnetic azimuth along section line 1. 278m.E; hole length was 45 metres - see Cross Section Figure No. 8 and Appendix A.

Previous rock chip sampling (by Metana Minerals N.L.) indicated that the "ironstones" and "breccias" at Estralita Central contained higher gold values than any of the other outcrops sampled on the Enterprise-Estralita Prospect area. Recent outcrop mapping (S.B. Warne - see Figure No. 6) has indicated that these values are associated with brown jasperous, silicified carbonate rocks occurring within a well defined shear zone.

3.3 Estralita East

RC-ES 2 was inclined at 60° towards 176.5° magnetic azimuth along section line 1 410m.E; hole length was 55 metres - see Cross Section Figure No. 9 and Appendix A.

RCl-ES 1 and RC-ES 6 were both inclined at 60° towards 176° magnetic azimuth along section line 1 420m.E; hole lengths were 84 metres and 69 metres respectively - see Cross Section Figure No. 10 and Appendix A.

Exploration of the Estralita East area has indicated the presence of two distinct zones of shearing with intense alteration and which host massive hematitic ironstone lenses and stringers.

The northern zone, "Zone A", has an east-west trend, a steep northerly dip, and is interpreted as being a D1 shear. It has been intersected in all holes drilled east of 1 400m.E that have been inclined from north to south and is not generally anomalous in gold. In most holes this shear contains narrow hematitic ironstone.

The southern zone, "Zone B", has a west-northwesterly trend (125° magnetic), a steep northerly dip and is interpreted as being a D2 shear. It is frequently anomalous in gold and immediately east-southeast. A small high grade gold lens appears to be located along the lower, west-northwest margin of this ironstone (see Figure No. 11).

The three holes, RC-ES 1, 2 and 6, were completed to test for down-dip or down-plunge continuity of high grade gold mineralization. The highest gold values recorded were 0.54 grams per tonne over 4 metres in RC-ES 2, down dip from the intersection recorded in previous hole (Metana Minerals N.L.) ESR 004 - see Cross Section Figure No. 9.

In hole RC-ES 2 both "Zone A and "Zone B" shear zones contained anomalous bismuth and lead values (see Appendix A).

4. DISCUSSION RESULTS AND POSSIBLE REMAINING TARGET POTENTIAL

4.1 Estralita West

The Estralita West ironstone is the largest massive quartz-hematite ironstone body in the Enterprise-Estralita prospect area. Its known dimensions from both outcrop and drill hole data suggest it to have a volume of more than 300,000 cubic metres; ranking in size with the ironstones at Noble's Nob, Juno, Eldorado and Mt. Samuel along the same linear trend.

To date, this ironstone, together with its contact zones has been intersected by 4 open percussion holes, 4 reverse circulation holes and one diamond drill hole (see Figure No. 2, and Figure Nos 3, 4 and 5). Roebuck Resources N.L.s recent hole RC ES4, which intersected two metres assaying 2.02 grams of gold per tonne between 14 and 16 metres down hole depth, is the only hole to have encountered gold values of one gram per tonne or more in this area.

Old exploration shafts, with some minor recorded production, are located near the centre of the ironstone outcrop. Close inspection clearly indicates that the mineralization at this location is closely related to, and probably hosted and controlled by, an east-northeast trending fault zone with a vertical to steep north-northwest dip. The old shaft located north of the ironstone outcrop and the 2 metres interval grading 2.02 grams of gold per tonne in RC ES4 are believed to be indicative of additional parallel fault zones.

The limited available data suggests that the style of mineralization at Estralita West may be similar to that in the Eldorado, Mt. Samuel and Skipper Extended deposits. The "orebodies" in these deposits are steeply plunging pipe or lens like bodies which tend to lie within northeasterly trending fault zones which cross cut the ironstone bodies. The locations and attitudes (plunge angles) of the ore shoots within the northeasterly fault plane tend to be controlled by east-west or northwesterly trending faults.

Ore shoots of the abovementioned type tend to be small in cross section, but elongated in down plunge length. The largest known ore shoots occurred at the Eldorado Mine. These were pipe-like with a maximum cross sectional area of about 100 square metres and a maximum down plunge length of about 100 metres.

The potential for the Estralita West ironstone to host a economically viable resource comprising ore shoots of the Eldorado type is unknown; no ore grade intersections have been recorded in the drilling completed to date. Serious exploration of this locality for such deposits would involve the drilling of numerous close spaced holes (10 metres by 10 metres grid spacing or less) and assignment of such a high expenditure priority cannot be justified by the previous exploration results.

4.2 Estralita Central

The geological structure of the Estralita Central area is complex, although there appears to be close similarities to the Estralita East area.

It is believed that an axis of plunge reversal is located along about 1,250m. grid East. West of this line, the northern ironstone body, centred at 1,030m. grid North, plunges to the west at about 45° having been intersected by percussion holes ESP 6 and 7 on line 1,230m.E. Evidence of westerly plunges is also exhibited by rocks associated with the main "shear zone around 1,240m.E., 1,010m.N.

To the east of grid 1,250m.E., along 1,260m.E., easterly fold plunges of 30° and 60° may prevail.

Since anomalous rock chip samples are confined to the area east of grid 1,260m.E., and since highly anomalous values are confined to a strike length of only 20 metres, i.e. 10

metres at 2,245 ppb, and 10 metres at 830 ppb, it could be postulated that an Estralita East type mineralized body with a strike length of 20 metres could exist.

Assuming the presence of such a body outcropping over 20 metres strike length between grid 1,260m.E and 1,280m.E, and assuming an average east-southeasterly plunge of 45° and an average width of 5 metres, a 75 metre down plunge length would contain a potential resource of less than 25,000 tonnes with a possible grade expectation of about 0.5 ounces of gold per tonne.

Recent drill hole RC ES7 (see Figure No. 8), and previous hole ESP 13 would both have passed beneath an east-southeast plunging body of this size.

Although the resource potential of this target is small, the possibility of discovering several high grade "ore shoots" of similar size renders the Enterprise-Estralita Prospect worthy of further investigation.

It is recommended that two additional reverse circulation holes be drilled at some time in the future with a view to confirming or downgrading the potential for discovery of a deposit of the above-described type in this area.

Proposed hole RC ES8? would be collared at grid 1,280m.E., 1,020m.N and would be inclined at 60° towards grid south (approximately true south) with an estimated depth of 40 metres. Proposed hole RC ES9? would be collared at grid 1,290m.E., 1,020m.N, and would be inclined at 60° towards grid south with an estimated depth of 50 metres.

It is estimated that the 90 metres drilling programme recommended above could be completed at a cost of about $3,600.

4.3 Estralita East

Previous exploration of the Estralita East area by Tennant Creek Gold Limited and Metana Minerals N.L. has involved the drilling of about 15 open percussion and reverse circulation holes. Three of these holes have encountered high grade gold mineralization (see Figure Nos 6, 7, 9, 10 and 11).

EPD 4 intersected a 12 metre hole length between 36 metres and 48 metres down hole depth averaging 17.3 grams of gold per tonne. Although this was an open hole and possibly prone to down hole contamination it is believed that mineralization does probably extend over the 9 metre hole length between 36 metres and 45 metres depth which has an average gold grade of 21.9 grams per tonne.

ESRC 002 intersected the mineralized zone at shallow depth and within the zone of intense near-surface leaching. The 2 metres section between 12 metres and 14 metres down hole depth averaged 39.2 grams of gold per tonne.

ESRC 004 intersected 4 metres between 38 metres and 42 metres down hole depth with an average gold grade of 18.8 grams per tonne.

This data suggests the presence of an elongated lens of high grade mineralization which plunges to the east-southeast at 55° to 60°. The lense appears to average about 7 metres in width and 3 metres in thickness, and to have a down plunge length of at least 30 metres (see longitudinal projection B - B_1; Figure No. 11).

The 3 reverse circulation drill holes completed in April 1991 were designed to test for immediate down plunge continuity of mineralization and also for continuity down dip of hole ESRC 004.

The down plunge potential was tested by holes RC ES1 and RC ES6 (see Figure Nos 10 and 11). Neither significant mineralization with anomalous gold values, nor any major alteration/shear zone was encountered.

This total absence of the target mineralized shear zone - zone "B" was also noted in previous drill hole EPD 6; however, further to the east, previous reverse circulation holes ESRC 011 and ESRC 012 both encountered wide alteration zones with anomalous gold values which correlate with zone "B" (see Figure No. 11 and Appendix B).

Examination of the longitudinal projection (Figure No. 11) reveals that the three holes in which zone "B" is absent cover a "corridor" with a very short strike length. An approximately 5 metre wide zone of quartz veining occurring in the vicinity of the collar of previous hole EPD 005 suggests the presence of north-northeast trending faulting. If this faulting is approximately vertical then holes EPD 006, RC ES1 and RC ES6 may have penetrated the interpreted along strike location of the zone "B" shear where it has been displaced and faulted out.

The presence of 5 metre hole length averaging 0.49 grams of gold per tonne in the zone "B" alteration in hole ESRC 011 suggests that this intercept may be close to the faulted extension of the Estralita East mineralized body. Hole ESRC 012 appears to have been terminated within the alteration zone, but did not record anomalous values.

On the basis of the data from these two holes the body could be located almost immediately below the two intercepts suggesting that the fault has a downthrow of about 10 metres to the west. The failure of previous holes ESRC 006 and ESRC 007 to reach the target shear suggests that this structure is approximately vertical in this immediate area.

One additional reverse circulation hole, inclined at 60° towards azimuth 175.5° magnetic (grid/true south) is recommended to test the possible eastern continuation of the Estralita East auriferous lens prior to the termination of the joint venture agreement.

Proposed hole RC ES10? is located at grid 1,430 metres East, 937.5 metres North. It is designed to intersect the mineralized shear zone 10 metres vertically beneath the ESRC 011 intersection and has a planned length of 65 metres.

To the east of grid 1,440 metres East the projected continuation of the main target shear zone "B" is soil covered. No potentially terminating structure is known to occur until about the 1,500 metres East vicinity where the zone is probably truncated by the north easterly fault zone. This structure terminates the western end of the Enterprise ironstone hosting shear zone.

If an intersection is recorded in proposed hole RCES 10? it is recommended that bedrock geochemical vacuum holes be drilled at 10 metre intervals along 20 metres spaced lines extending from grid 820 metres North to 940 metres North between grid 1,440 metres East and 1,540 metres East. The immediate soil covered east-south-eastwards extension of the target zone "B" should be exposed by costeaning to facilitate more detailed examination and sampling.

It is estimated that the above described programme will require one day each of vacuum drill and backhoe hire.

The estimated total cost for the recommended Estralita East programme is approximately $6,500.

4.4 Other Areas

If any of the above recommended drill holes are successful in intersecting ore grades further evaluation of other areas may be justified as follows:

a) Reconnaissance bedrock geochemical sampling with geological logging should be undertaken along 2 wide spaced north-south lines to the west of the Estralita West area. The objective of this programme would be to locate and approximately define the trend of any extensions of the shear zones known to exist in the Estralita area.

b) A bedrock geochemical survey of the area around "Ironstone Target F" (see Figure No. 2) is also recommended. The cost of the Scout programmes suggested above is estimated to be about $5,750.

APPENDIX A

PROJECT: TENNANT CK.

PROSPECT: ESTRALITA EAST

LOCATION: Nr Estralita East shaft.

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS: 1420 E 950 N

HOLE No: RC-ES1

R.L. COLLAR .... m

INCLINATION: 60°

DIRECTION: 176° Mag. GRID NORTH

Sample	Au	Cu	Pb	Bi	Mn	Depth metres
001	<0.01	41	21	2	4550	2
002	"	64	16	1	4940	4
003	"	51	12	2	5820	6
004	"	30	17	1	4790	8
005	"	52	13	2	2730	10
006	"	57	10	1	2740	12
007	"	29	17	2	3110	14
008	"	22	9	1	3100	16
009	"	26	20	3	3090	18
010	"	33	12	8	2720	20
011	"	31	15	4	1720	22
012	"	115	19	20	805	24
013	"	712	22	10	802	26
014	"	993	13	6	798	28
015	"	178	10	2	3480	30
016	"	196	19	1	3740	32
017	"	213	7	1	3380	34
018	"	209	7	1	3520	36
019	"	235	9	1	4010	38
020	"	685	8	16	2570	40
021	"	146	7	4	2990	42
022	0.01	352	6	3	2700	44
023	<0.01	267	8	13	6100	46
024	"	1210	<5	3	1.89%	48
025	0.01	477	7	92	1.21%	50
026	<0.01	322	8	7	6220	52
027	"	437	<5	5	2.63%	54

(ASSAYS ppm)

DESCRIPTION (H = haematite; x = Fe oxide rich; ss = siltstone; mn = manganese staining)

Pale brown, pale pink siltstone (s.s)
"
"
"
Chocolate s.s.
" + goethite fragments
choc. and grey ss.
pale grey s.s.
pale grey and choc. ss.
choc. s.s + 5% quartz (qtz) chips
red, ochreous, haem. ss. + 1% qtz "
choc. + buff ss + 1% " "
hard haem. ss
"
chocolate mudstone
" " + pink ss
" " + buff ss
brown ss + 10% qtz
" + 15% " with brown jasperous patches
silicified brown ss + 50% qtz chips
brown ss + tr. qtz
deep red (? after chlorite), haem. ss + 5% qtz.
rusty, limonitic pdwr, chips milky qtz dominant
dark rusty ochre; qtz chips 80%, 20% goeth. Fe ox.
dark black ochre; chips f.g. haematite
dark brown-black ochre, choc. mudst., + chips Fe ox.
choc. mudst / siltst.; tr qtz
brown ochre of siltst, abund. qtz with goethite.
finely fissile, pink ss; tr. qtz
brown ss / mudstone
" + tr. brownblack Mn/Fe chips
" + 2% " "
pink ss + tr " "
"
"
" + buff s.s. 60/40
" "
"
"
"
" + tr. sec. Fe-ox.
red haem. s.s. + 5% Fe ox
" + 30% haematite
" + 2% "
pink & brown ss + 3% "
Pink ss 50% alt to brown pt. silicified ss
deep red haem. ss + 5% Fe ox occurring in cleavages
ox. brown ss + tr. Fe ox.
red & brown ss + tr - 3% Fe ox.
"
" + tr qtz
" - pt. silicified.
tr. pink ss, dominantly brown & greenish silic. mudst.

Scale: 1:250

Hole Target: To test possible down plunge extension of main Estralita East mineralized zone on 1420m E section line. ss = siltstone

Sample No's: 001 - 043

Drill Type: RCD 150

Driller: GOMEX

Drilled: 23-3-1981

Logged: S. Rawarne

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

PROJECT: TENNANT CREEK
PROSPECT: ESTRALITA EAST
LOCATION: [illegible] Estralita [illegible]
CO-ORDS: 1420 E 950 N

HOLE Nº: RC-ES1
R.L. COLLAR: .... m
INCLINATION: 60°
DIRECTION: 176 Mag.

Sample	Au	Cu	Pb	Bi	Mg	Depth metres
028	<0.01	365	<5	4	1.19%	56
029		26	<5	3	2.43%	58
030		10	<5	1	1.94%	60
031		11	<5	2	1.93%	62
032		5	7	1	1.49%	64
033		5	5	1	1.53%	66
034		3	<5	1	1.54%	68
035		2	<5	<1	1.47%	70
036		2	5	<1	1.49%	72
037		3	<5	1	1.54%	74
038		3	<5	<1	1.55%	76
039		4	<5	<1	1.41%	78
040		3	<5	<1	1.41%	80
041		3	<5	<1	1.40%	82
042		2	<5	<1	1.63%	84
043		3	<5	1	1.39%	END

DESCRIPTION

grey/greenish alt. mudst., 3% qtz, apparently chloritic
"
grey/green chl. mudst. — rare cleavage, massive, fresh.
"
"
" + 3% qtz
"
"
" — some Fe ox. on cleavage faces.
grey or greenish grey mudstone with trace brown or red oxidised rock to hole bottom.
Apparently more massive, coarsely fractured mudstone/siltstones of breccia zone footwall.
Rock better described as f.g. chloritized greywacke

No carbonate detected in hole.
Mainly fresh rock commencing 54m, trace oxidized rock only from 56m.

Scale: 1:250
Sample Nº's: 001 — 043

Hole Target: To test possible down plunge extension of main Estralita East mineralized zone on 1420 E section line.

Eastman Survey 42m: Dip 56°/Azim: ~~192°~~ 187°

Drill Type: RCD 150
Driller: GOMEX
Drilled: 23-3-1981
Logged: S. B. WARD

PROJECT TENNANT CK | **ROEBUCK RESOURCES N.L.** | HOLE Nº RC-ES002

PROSPECT ESTRALITA EAST

LOG OF REVERSE CIRCULATION DRILL HOLE

LOCATION Nr. old shaft / diggings

CO-ORDS 1410E 955N

R.L. COLLAR .... m

INCLINATION 60

DIRECTION 176·5 mag.

Mn = manganese staining (alt. carbonate / Fe ox. rock) j = jasper(ous) T = talc ss = siltstone h = haematitic

Sample	Au (ppm)	Cu	Pb	Bi	Mg	Depth metres
044	<0.01	43	13	2	4750	2
045	"	61	18	3	4184	4
046	"	80	18	1	4313	6
047	"	139	21	4	4391	8
048	"	372	11	6	2443	10
049	"	303	24	3	1864	12
050	"	152	14	2	2496	14
051	"	68	10	2	591	16
052	"	108	15	1	2870	18
053	"	28	12	2	2954	20
054	"	29	12	1	3139	22
055	"	34	10	1	1729	24
056	"	794	40	4	1332	26
057	"	1449	326	418	1.13%	28
058	0.01	2049	204	63	1.55%	30
059	0.09	1721	57	44	4195	32
060	0.01	1328	43	11	1562	34
061	<0.01	809	17	6	1475	36
062	0.01	739	13	2	727	38
063	0.06	1568	14	203	867	40
064	0.51	1724	26	1820	649	42
065	0.56	1147	14	132	3758	44
066	0.05	2644	11	15	5.21%	46
067	<0.01	1105	6	5	2.15%	48
068	"	933	9	5	2.08%	50
069	"	308	8	5	1.55%	52
070	"	320	10	3	1.34%	54
071		415	8	2	1.09%	56

DESCRIPTION

Pale pink siltstone (ss.)
"
"
" + 20% qtz chips
" + tr. qtz
" "
" "
" + some rounded qtz chips
Dk. red, haematitic s.s. + 15% sec qtz chips
limonitic, buff s.s. / red haem. s.s. — 50/50
Silic. red-brown s.s. + 10% qtz
" " "
" " + 15% qtz
red haem. s.s + tr. qtz.
red s.s. + brown weathering s.s. + 5% qtz
" " "
red, jasperous, silic., red s.s.
red & brown s.s. + 50% qtz
pink weathering s.s.
haematitic siltstone
pink siltstone and brown ferruginized s.s.
pink s.s.
haem. s.s + minor black ferrug. s.s.
red-brown, silicified, ferrug. rock
pink s.s. (Feox-carb?)
brown-black, (?Mn), ferrug. secondary Fe oxide rock
" " " "
" as above + haem. s.s. and talc
"
sec. silica (brown), sec. Fe oxides, talc
ochreous, talcose, haem. s.s. + black Mn stained Fe ox.
" "
black Mn bearing ochreous sec. Fe ox.; slightly talcose STOP 23/3/91
ochreous, chloritic + 15% sec. Fe ox.
" + 10% "
" + 5% "
" "
" + tr ? chloritic
" + deep red-brown (haem-chl.) s.s. also
ochreous, deep brown s.s. + 50% Mn stained Fe ox (in cleavage s.s.)
black Mn stained sec. Fe oxide
" " + tr. chl. s.s.
deep red chl. s.s. + tr. sec. Fe ox (in cleavage)
" " + 40% Fe ox, talc on fracture faces.
grey / greenish chl. mudstone FRESH ROCK
" "
" " + 50% pink s.s.
f.g. greenish greywacke
finely fissile grey mudstone
" " " No carbonate detected in hole.
"
hard (pt. silic.?) grey mudstone
" "
" f.g. greywacke completed 24/3/91
greywacke + tr. brown ox. rock

Scale: 1:250

Hole Target. Test down dip extn. of Estralita East mineralized zone below ESRC 004 on 1410E section line.

Sample Nº's : 044 – 071

Open Hole Surveys 55m : 55° ; 27m : 59°

Drill Type RCD150

Driller Gomex

Drilled 23-24/3/91

Logged S.J. Warne

PROJECT: TENNANT CK.

PROSPECT: ESTRALITA

LOCATION: BELOW OLD WORKINGS

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS: 1224E 1146N

HOLE Nº RC-ES3

R.L. COLLAR: ......m

INCLINATION: 70°

DIRECTION: 176° Mag

Sample	Au	Cu	Pb	Bi	Mg	Depth metres
	ASSAYS ppm					
099	<0.01	5	5	<1	2.87%	56
100	"	12	<5	<1	1.32%	58
101	"	124	7	<1	2100	60
102	"	16	7	<1	2.79%	62
103	"	86	<5	<1	3.40%	64
104	"	249	5	<1	2.36%	66
105	0.01	169	7	<1	1.95%	68
106	<0.01	557	<5	1	2.92%	70
107	0.01	862	6	2	2.83%	72
108	0.25	1030	<5	8	8750	74
109	0.03	264	<5	9	434	76
110	0.02	549	<5	39	3680	78
111	<0.01	431	15	3	1.26%	80
112	"	209	6	2	8070	82
113	"	193	<5	<1	7040	84
114	0.01	317	9	<1	7190	86
115	<0.01	261	6	1	5870	88
116	0.04	445	<5	1	8890	90
117	0.01	301	7	1	7030	92
118	0.01	113	11	1	7780	94
119	<0.01	78	61	1	5930	96
120	0.01	427	<5	1	9160	98
121	<0.01	20	<5	1	7290	100

LOG: h.py (at 62 m)

DESCRIPTION (ss = siltstone)

greenish (chloritic?), sl. sandy ss
Interbedded greenish sandy ss/g.w and pink s.s.
"
"
"
pink s.s
pink, brown and greenish ss
greenish ss with rare pink layers
dk. green s.s. with fine clots haem. + py on foliations
dk green ss.
" + red ss.
f.g. green g/w – s.s. + tr. qtz
"
"
f.g. greenish g/w
"
greenish and brown f.g. g/w – s.s.
"
" — H. weathers to br. ochre
red, haem. rich s.s.
massive haematite, tr. qtz } abund. magnetite
massive and specular haem., 1% qtz }
massive and red haem. ochre
Interlayered green & brown ss. — OXID. IN PART / DOMINANTLY FRESH ROCKS
grey s.s.
greenish & H. br. ss.
f.g. greenish and brown (? ox) g/w
f.g. grey greywacke
grey s.s.
"
grey/green and brown f.g. sandst.
greenish and brown s.s.
f.g. green arkosic sandst.
"
" + 3% qtz
"
"
"
green s.s.
" — WATER SEEP
grey s.s.
" and f.g. arkosic sandst.
"
greenish s.s.
"
" — END OF HOLE —

Scale: 1:250

Hole Target: ......

Sample Nº's: 072 – 121

Drill Type: RCD 150

Driller: GOMEX

Drilled: 24 – 7 – 1981

Logged: G.B. Warne

PROJECT: TENNANT CREEK

PROSPECT: ESTRALITA

LOCATION: S of road to Estralita E, NE of Estralita shaft

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS: 1224E 1148N

HOLE Nº: RC-E53

R.L. COLLAR: ....m

INCLINATION: 70°

DIRECTION: 176.5 Mag.

h = haematitic

Sample	Au (ppm)	Cu (ppm)	Pb (ppm)	Bi (ppm)	Mg (ppm)	Depth metres
072	<0.01	19	10	1	1966	2
073	"	12	9	1	1554	4
074	"	34	12	2	1535	6
075	"	15	8	3	2243	8
076	"	9	10	3	2307	10
077	"	8	10	1	2199	12
078	"	15	12	1	2157	14
079	"	18	9	<1	1957	16
080	"	18	7	<1	1587	18
081	"	16	<5	<1	2625	20
082	"	20	12	1	3035	22
083	"	17	13	1	3779	24
084	"	7	7	1	3384	26
085	"	7	6	<1	3023	28
086	"	10	8	<1	3752	30
087	"	20	13	1	4137	32
088	"	22	12	<1	3767	34
089	0.02	35	5	1	1440	36
090	<0.01	35	5	<1	1470	38
091	0.01	26	<5	<1	865	40
092	0.02	38	<5	<1	1250	42
093	<0.01	52	<5	<1	1780	44
094	"	83	6	<1	1540	46
095	0.01	116	6	<1	1770	48
096	<0.01	106	<5	<1	113	50
097	0.02	222	<5	<1	714	52
098	0.01	17	7	<1	2.74%	54

DESCRIPTION

Pink & buff, weakly haematitic siltstones (s.s.)
"
"
" + tr. kaolin
" + tr qtz
" + 3% qtz.
" increasing ferrug. material
Dark haem. s.s. + 30% white, f.g. sandst.
50% haem. s.s./50% f.g. sandst.
Dk. haem. sandst. (arkosic?)
Pink haem. s.s. + tr. specular haematite
" + sec. haem. + 15% qtz.
" + sec. haem flooding f.g. sandst.
" and brown, ferrug. sandst.
" "
" " + minor talc
ferrug. f.g. sandst. and talc
" sandst./mudstone, 15% qtz, tr. talc
f.g. ferrug. sandst, 5% talc
" and pink s.s.
pink and brown sandst. + 25% talc
f.g. haem. sandst + 50% talc
f.g. sandst, pink ss + 50% talc
purplish-buff ss + 50% talc
" "
f.g. purplish & buff sandy ss + 30% talc
lt. brown sandst " + 15% "
lt. brown, f.g. sandst, pink ss
lt. brown ss + 30% talc
" " + tr qtz.
lt. brown siltstone
f.g. brown, ferrug. sandst.
" " and ss + 10% talc
lt. pink ss
"
" and dk. br. f.g. silty sandst.
f.g. brown silty sandst.
"
" red & brown
" " + tr. talc
f.g. brown & pale brown sandst.
brown s.s. + 3% qtz carrying Fe oxide
"
"
" + 10% talc
dk. red haem. siltst. impregnated with haem
" "
" " – haematite dominant
" " " (specular haematite?) oxidized
" "
" " " + f.g. dk green s.s/g-w.
greenish (?chloritic) sl. sandy siltstone

DRILLEX/ATLAS COPCO

Scale: 1:250

Sample Nº's: 072 – 121

Hole Target: Test beneath contact shear of main Estralita Festone up-plunge from CPA-PD 85 E59 which encountered talc – dolomite – chlorite altn. in massive specular haematite.

Eastman/camera: Open Hole Survey

Drill Type: RCD 150

Driller: GOMEX

Drilled: 24/3/91 198..

Logged: S. Warren

50m: 66° ; 100m: 62°

PROJECT Tennant Ck.

PROSPECT Estrahita

LOCATION Immed. N Estrahita hillworkings

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1165E 1085N

HOLE N° RC-E54

R.L. COLLAR .....m

INCLINATION 60°

DIRECTION 176° mag.

Sample	ASSAYS 1/2m Au	Cu	Pb	Bi	Mg	Depth metres
149	<0.01	13	10	1	3415	56
150	"	12	7	1	2263	58
151	0.01	11	10	1	2959	60
152	<0.01	10	9	1	3815	62
153	0.01	15	16	1	3904	64
154	<0.01	15	11	1	2998	66
155	"	63	14	<1	2377	68
156	"	47	10	<1	4221	70
157	0.01	5	13	<1	6142	72
158	<0.01	67	7	<1	5509	74
159	"	36	11	<1	6450	76
160	"	141	11	<1	5755	78
161	"	10	9	<1	4833	80

LOG

DESCRIPTION

red-brown haematitic siltstone
+ tr. haem, tr. qtz.

increasing sand content

becoming less weathered

– higher haem. content

brown, sandy, haem. siltst., tr. haem. chips

red-brown f.g. haem. sandstone

choc. haem. sandst.

"

f.g. br. haem. sandst. becoming greenish (greater haem.)

grey f.g. sandst.

"

"

"

grey f.g. sandstone + mudstone

"

END OF HOLE 80m

"

Rocks still oxidized 80m.

water

Scale: 1:250

Sample N°s : 122 – 161

Hole Target.

177.5°

Eastman Open Hole Survey 40m : 60°; Azim.

80m : 57°; Azim. 184.5°

Drill Type RCD150

Driller Gemex

Drilled 25-3-1991

Logged S.B. Warne

PROJECT TENNANT CREEK

PROSPECT ESTRALITA

LOCATION Immed. N. Estralita hill workings.

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1165E 1085N

HOLE No RC-ES4

R.L. COLLAR ....m

INCLINATION 60°

DIRECTION 176° mag.

Sample	Au	Cu	Pb	Bi	Mg	Depth metres
122	<0.01	88	23	<1	617	2
123	<0.01	34	8	12	295	4
124	0.05	34	6	3	435	6
125	0.03	20	<5	5	199	8
126	0.03	63	5	30	1115	10
127	<0.01	29	<5	12	355	12
128	"	41	5	6	185	14
129	2.02	67	13	4890	193	16
130	0.12	24	<5	579	158	18
131	0.01	19	5	49	104	20
132	<0.01	57	<5	38	142	22
133	0.01	67	5	30	170	24
134	0.36	128	<5	42	213	26
135	<0.01	51	<5	28	186	28
136	0.06	161	8	30	332	30
137	0.21	71	6	31	356	32
138	0.13	94	7	43	403	34
139	0.10	85	<5	30	422	36
140	0.02	88	<5	30	298	38
141	<0.01	164	22	68	877	40
142	"	87	12	4	3316	42
143	"	94	11	3	2811	44
144	"	89	8	5	906	46
145	"	33	10	1	3238	48
146	"	19	10	1	2950	50
147	"	11	12	1	4285	52
148	"	20	10	<1	3965	54

ASSAYS ppm

DESCRIPTION (h = haematitic)

weath. haem. siltstone (s.s) and haem. rubble
" , minor <1% qtz
grad. contact " (60%) and haem. 40%.
massive haematite + qtz 5% grading to haem./qtz 70/30
haematite–quartz 90/10
" 97/3
" 85/15
" "
" 75/25
" 90/10
" 97/3
" 80/20 reddish qtz.
" 95/5
" "
" 97/3
" 95/5
" 75/25
" "
" 70/30
" 60/40
" 70/30
" 40/60 + tr. brown ochre
" 60/40
" 60/40
" 85/15
" " + tr. haem. s.s.
" 75/25
" 70/30
" 85/15
" "
" "
haem. 90% / qtz 10% 90/10
"
haem/qtz 95/5
specular haem., tr. qtz., tr. talc
specular haem. 100%
" " " as haem. and red ochre
haem., weathered haem. s.s., 30% qtz. chips (cse)
haem. s.s., 3% haem (contam.?)
pink " + tr. qtz
fresher bright red haem. siltstone
red haem. ss. + minor grey s.s., sandy s.s.
" + 3% haem.
H. pink sandy siltstone + tr. haem.
"
H. pink/brown siltstone
"
"
red brown haem. ss.

Scale: 1:250

Sample No's: 122–161

Hole Target: To test base of main NE plunging Estralita ironstone beneath old hill workings. Hole continued to test for second ironstone possibly related to S. shear (negative)

Drill Type RCD 150

Driller Gomex

Drilled 25-3-1991

Logged G.B. Warne

PROJECT TENNANT CK

PROSPECT ESTRALITA

LOCATION W end Estralita Ironstone, S side

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1135E 1072.5N

HOLE Nº RC-ES5

R.L. COLLAR ....m

INCLINATION 60°

DIRECTION 176° mag.

ss = siltstone

Sample	ASSAYS ppm Au	Cu	Pb	Bi	Mg	Depth metres	LOG	DESCRIPTION	water
						0		Rubble of haem. ss. and haem. ironstone	
162	<0.01	82	10	4	1836	2		Brown haem. ss. + ironstone 50/50	
								" 50/50	
163	"	173	17	7	838	4		Massive ironstone, minor brown haem. ss. + strongly ferrug. s.s (minor contam.?)	
164	"	250	14	8	398	6		" "	
165	"	113	<5	4	231	8		Massive haem. ironstone	
166	"	33	<5	8	112	10		" + qtz 10% -purplish	
167	"	20	<5	4	123	12		Massive spec. haem. " , tr qtz	
168	"	20	<5	2	108	14		" 3% " / " 1% " / " tr	
169	"	16	<5	2	79	16		" "	
170	"	82	<5	3	227	18		" "	
171	"	37	<5	5	160	20		" no qtz	
172	"	60	<5	3	315	22		" occ broken qtz, tr. ox. ss / rubbly, some siltstone	
173	"	201	<5	8	172	24		pale pink haem. ss + 50% haem. Some kaoliniz. ss	
174	"	58	<5	1	1839	26		pale pink " ss	
175	"	49	8	1	1857	28		" very weathered, ochreous	
176	"	33	7	1	2054	30		" " " "	
177	"	23	5	<1	2411	32			
178	"	33	5	<1	1973	34		" "	
179	"	18	6	<1	2200	36			
180	"	11	<5	<1	2378	38			
181	"	9	9	<1	2343	40		pale pink, weakly haem. ss.	

END OF HOLE 40m.

Scale: 1:250

Sample Nº's : 162–181

Hole Target. Test S shearzone, believed to dip north but could be vertical.

Attom — Eastman Camera Survey, open hole. Dip: 58° : Azim. 180°

Drill Type RCD 150

Driller GOMEX

Drilled 25-3-1991

Logged S Warne

PROJECT TENNANT CREEK

PROSPECT ESTRALITA EAST

LOCATION Northerly of Estrallita East shaft.

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1420E 962N

HOLE Nº RC-ES6

R.L. COLLAR ....m

INCLINATION 60°

DIRECTION 176° mag. GRID NORTH

ss = siltstone; j = jasper; Fe = haematitic

Sample	Au (ppm)	Cu	Pb	Bi	Mg	Depth metres	LOG	DESCRIPTION	water
182	<0.01	12	7	2	3492	2		Soft, pink weathering siltstones – produce ochreous powder when drilled.	
183	"	8	8	1	3409	4		"	
184	"	10	9	1	2988	6		"	
185	"	81	8	<1	2829	8		" + thin qtz (4mm) with strong slickensides	
186	"	112	15	5	1608	10	Fe	" + 3% goethite	
187	"	38	10	1	2727	12	Fe	" (ferrug. ss?) / Soft pink and buff ss	
188	"	25	<5	1	2246	14	j, Fe j	brown ss and buff-red jasper of silicified siltstone / dominantly red jasper, silic. ss, 10% FeOx, tr. buff ss	
189	"	32	14	1	2641	16		br. red, lt. jasperous, silic. ss. / buff ss	
190	"	24	8	<1	3026	18	Fe	buff & brown ss / pink, red-brown haematitic ss	
191	"	14	16	2	1995	20	q	choc/brown ss, 1% coarse qtz "	
192	"	13	12	1	3256	22		pink haem. ss	
193	"	10	9	1	3486	24		"	
194	"	9	6	1	2896	26		" + tr. ferruginized ss	
195	"	10	10	1	2963	28	Fe, Fe	pink haem. ss + 20% goethite / " / choc. ss.	
196	"	36	14	2	1707	30		pink ochreous ss	
197	"	28	13	1	2896	32	q	" + tr quartz	
198	"	125	7	1	2192	34	q, h	" + abund. rubbly qtz.	
199	"	588	33	10	390	36	qT	dk red, strongly haem. ss / black-brown, ochreous, haematite, abund. qtz, talc	
200	"	679	19	15	931	38	Mn	pink ss + 15% black, Mn bearing haem. (haem-carb? rock) / " + 5% " "	
201	"	222	13	1	2932	40		red ss + tr interlayered red and chocolate ss	
202	"	151	11	<1	2498	42		"	
203	"	147	9	1	2516	44		reddish haem. ss	
204	"	136	7	1	2489	46		" + buff. lt. silicified ss	
205	0.03	88	9	1	2603	48		" + minor greenish chl. ss (contamin.?)	
206	"	588	6	1	5247	50		" + " (")	
207	"	497	7	1	1.44%	52		" + br. sandy ss + tr. greenish ss / grey ss, minor red haem ss	
208	"	272	6	1	2.19%	54		f.g. greenish-grey g/w " + minor green SS (↑ OX.D / ↓ FRESH ROCK)	

Scale: 1:250

Sample Nº's: 182–216

Hole Target: To test extension of near footwall mineralized zone intersected in RC-ES1

Open hole Eastman Camera Surveys:
35m : Dip 56.5°, Azim. 186°
69m : Dip 52°, Azim. 184.5°

Drill Type RCD 150

Driller GOMEX

Drilled 26-3-1991

Logged S. B. Warne

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

PROJECT: TENNANT CREEK
PROSPECT: ESTRALITA EAST
LOCATION: North hly of Estralita East shaft.
CO-ORDS: 1420E 968N

HOLE No: RC-E56
R.L. COLLAR: ....m
INCLINATION: 60°
DIRECTION: 176° Mag.

ss = siltstone

Sample	ASSAYS ppm					Depth metres	LOG	DESCRIPTION
	Au	Cu	Pb	Bi	Mg			
209	<0.01	471	<5	1	1.4%	56		f.g. green g/w + minor green ss + red haem ss
210	"	284	7	1	1.07%	58		+ tr " ; greenish/grey ss
211	"	109	7	3	1.10%	60		pink haem sandst. + greenish g/w & ss; green/grey fissile ss with tr red Fe ox. on cleavage
212	0.01	6	7	3	4.47%	62		f.g. chl. g/w – siltstone + ss + f.g. g/w + tr chlorite
213	0.01	5	6	2	2.41%	64		
214	<0.01	4	11	2	3.70%	66		+ tr. ox. chlorite
215	"	3	6	1	2.15%	68		
216	"	4	6	<1	1.87%	69		

END OF HOLE 69m.

Scale: 1:250
Sample No's: 182-216
Hole Target: ....

Drill Type: RCD150
Driller: Gomex
Drilled: 26-3-1981
Logged: S.B. Warne

PROJECT TENNANT CREEK

PROSPECT ESTRALITA CENTRAL

LOCATION north of Shaft on Hill.

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1278 E 1028 N

HOLE No RC-E57

R.L. COLLAR ....m

INCLINATION 60°

DIRECTION 176°

ss = siltstone Q = quartz h = haematite "" = massive haematite

Sample	Au	Cu	Pb	Bi	Mg	Depth metres	DESCRIPTION
217	<0.01	18	15	2	2930	2	pink, haem. ss to 30% kaolinized.
218	"	20	17	2	2739	4	" to tr. kaolin
219	"	15	14	<1	2826	6	" + tr. haem
220	"	31	8	1	3388	8	"
221	"	34	7	1	2772	10	" , 5% Fe ox., tr. contam. from rods (chlorite rock)
222	"	49	9	<1	2875	12	f.g. sandy, haem. ss
223	"	93	11	1	2500	14	pink ss, tr. lt. brown ss, buff haem. ss / pink ss (pt. kaolinized)
224	"	61	9	3	2406	16	"
225	"	34	7	<1	2708	18	red haem. siltstone
226	0.01	407	37	85	894	20	deep red haem. siltstone
227	0.02	354	22	66	478	22	"
228	0.07	543	32	30	134	24	choc. weathering haematite (former carb. content?) / brown silic. rock (jasperoid) + 10% haem. (F?)
229	0.08	390	12	238	221	26	brown-black haem + silic. calcrete (F?) / black haem., minor " " (")
230	0.06	333	14	411	165	28	" " " (")
231	0.11	304	26	362	756	30	black haem. / " + red ss 60/40
232	0.35	325	3	37	2162	32	pink ss / " + qtz 50/50
233	0.09	124	6	<1	1510	34	" + 50% qtz + 5% sec. Fe ox. / " + 5% haematite
234	0.03	105	7	5	1394	36	" + 20% " / " + 3% "
235	0.09	28	7	3	1596	38	" " / " + tr gritty brown, silic. rock
236	0.06	20	5	2	1541	40	" + 30% haematite / " + tr "
237	0.03	712	32	769	608	42	" + 30% haematite
238	0.02	26	9	<1	1818	44	" + tr "
239	0.01	43	8	<1	1686	45	" + 30% haem. sandstone

END OF HOLE 45m

Scale: 1:250

Sample No's: 217-239

Hole Target. To test ferruginous fault zone immediately E of Shaft, Estrellita Central. (1278E section).
Eastman Camera Open Hole Survey.
20m — Dip 56.5°, Azim. 185°
45m — Dip 54.5°, Azim. 183°

Drill Type RCD 150
Driller GOMEX
Drilled 26-3-1981
Logged S. Bloarne

APPENDIX B

PROJECT TENNANT CREEK

PROSPECT ENTERPRISE/ESTRALIA

LOCATION ESTRALIA EAST.

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1432mE 879mN.

HOLE N° ESRC.010

R.L. COLLAR .....m

INCLINATION 60°

DIRECTION 36° mag.

Sample	ASSAYS ppm Au	Cu				Depth metres	LOG	DESCRIPTION	water
0									
-2	0.01	56						Red-brown hematitic weathered SILTSTONE	
-3	<0.01	65				3			
-4	<0.01	38							
-5	0.01	11							
-6	<0.01	39							
-7	0.02	9							
-8	0.01	14							
-9	0.02	11							
-10	0.04	41				10			
-11	<0.01	77							
-12	<0.01	40							
-13	<0.01	59							
-14	<0.01	114							
-15	<0.01	210							
-16	<0.01	250							
-17	<0.01	220							
-18	<0.01	136							
-19	0.04	228							
-20	0.01	196				20			
-21	<0.01	133							
-22	<0.01	278							
-23	0.01	205							
-24	0.02	196							
-25	<0.01	54							
-26	<0.01	56							
-27	<0.01	119							
-28	<0.01	138							
-29	<0.01	125							
-30	<0.01	86				30			
-31	<0.01	49							
-32	<0.01	51							
-33	<0.01	100							
-34	<0.01	62							
-35	<0.01	40							
-36	<0.01	70							
-37	<0.01	125							
-38	<0.01	160							
-39	<0.01	89							
-40	<0.01	312							
-41	<0.01	160				40			
-42	<0.01	241							
-43	<0.01	235							
-44	<0.01	625							
-45	<0.01	176				44			
-46	<0.01	182							
-47	<0.01	232						Red-brown + grey-green chloritised SILTSTONES - intensely oxidised bands alternating with fresher bands.	
-48	<0.01	133							
-49	0.02	10				49			
-50	<0.01	<1							
-51	0.02	1				50			
-52	0.02	1						Green, fresher chloritised SILTSTONE	
-53	<0.01	1							
-54	0.04	<1				54			

Scale: .....

Sample N°'s : .....

Hole Target. THE ESTRALEA EAST TARGET SHEAR ZONE EAST - SOUTH - EAST OF PREVIOUS DRILLING - ASSUMING A SOUTHERLY DIP.

Drill Type RL 150

Driller GOMEY

Drilled MAY, 1990

Logged K. FOX FEB. 1991 re logging

SHEET 1 OF 2

PROJECT TENNANT CREEK

PROSPECT ENTERPRISE / ESTRALITA

LOCATION ESTRALITA EAST

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1432mE 879mN.

HOLE N° ESRC. 010

R.L. COLLAR .....m

INCLINATION 60°

DIRECTION 360° mag

Sample	ASSAYS ppm Au	Cu				Depth metres	LOG	DESCRIPTION	Water
54 - 55	0.02	< 1				54		Red-brown and green hematitic and chloritic SILTSTONE	
56	<0.01	1							
57	<0.01	2				57			
58	0.02	2							
59	0.03	< 1							
60	<0.01	< 1				60		Chloritic (green) SILTSTONE	
61	<0.01	< 1					END	HOLE TERMINATED.	

Scale: .....

Sample N°'s : .....

Hole Target. SEE SHEET 1

Drill Type RC 150

Driller COMEX

Drilled MAY 1990

Logged K Fox.

PROJECT TENNANT CREEK

PROSPECT ENTERPRISE/ESTRALIA

LOCATION ESTRALIA EAST

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1438.6E 930.9mN

HOLE N° ESRC 011

R.L. COLLAR .....m

INCLINATION 60°

DIRECTION 210° mag.

Sample	ASSAYS ppm. Au	Cu				Depth metres	LOG	DESCRIPTION	water
0									
- 2	<0.02	31						Purple weathered banded SILTSTONE with minor quartz stringers	
- 3	0.02	29							
- 4	<0.02	31							
- 5	<0.02	36							
- 6	<0.02	30				6			
- 7	<0.02	29						Pale yellowish-grey SILTSTONE	
- 8	<0.02	23							
- 9	<0.02	31							
- 10	0.02	14				10			
- 11	<0.02	32				11			
- 12	0.02	32							
- 13	<0.02	34							
- 14	<0.02	32							
- 15	<0.02	26							
- 16	<0.02	85						Purple to dark red weathered hematitic SILTSTONE	
- 17	<0.02	117							
- 18	<0.02	139							
- 19	<0.02	144							
- 20	0.04	128				20			
- 21	<0.02	191				21			
- 22	<0.02	744						Dark green and red weathered chloritic and hematitic SILTSTONE	
- 23	<0.02	797				23			
- 24	0.02	605						Red weathered hematitic SILTSTONE	
- 25	0.03	621							
- 26	0.04	1104				26			
- 27	0.03	1195						Very dark grey/green chloritic SCHIST - SHEARING	
- 28	<0.02	1199				28			
- 29	0.08	931							
- 30	<0.02	1190				36		Light brown TALC SCHIST with some hematite and chlorite. SHEAR ZONE	
- 31	0.03	1206							
- 32	0.41	1194							
- 33	0.04	1197				33			
- 34	0.09	1183						CHLORITE - TALC - HEMATITE SCHIST. SHEAR ZONE	
- 35	0.72	1191				35			
- 36	0.52	1188							
- 37	0.39	1194							
- 38	0.22	1178						Dark green CHLORITE SCHIST - SHEAR ZONE	
- 39	0.60	1198							
- 40	0.16	1177				40		N.B. SHEAR/ALTERATION ZONE EXTENDS FROM 26 TO 42m.	
- 41	0.03	1136							
- 42	<0.01	1063				42			
- 43	<0.01	1056							
- 44	<0.01	585							
- 45	<0.01	383							
- 46	<0.01	377						Light and dark brown, red and green hematitic weathered SILTSTONES.	
- 47	<0.01	443							
- 48	<0.01	411							
- 49	<0.01	411							
- 50	<0.01	328							
- 51	<0.01	207						HOLE COMPLETED AT 51m.	
END									

Scale: .....

Sample N°'s : .....

Hole Target. The ESTRALIA EAST TARGET SHEAR ZONE EAST-SOUTH-EAST OF PREVIOUS DRILLING

Drill Type RC 150

Driller GOMEY

Drilled MAY 1990

Logged A. Hodgie - relogged K. Fox.

SHEET 1 OF 1.

PROJECT TENNANT CREEK

PROSPECT ENTERPRISE/ESTRALITA

LOCATION ESTRALITA EAST

ROEBUCK RESOURCES N.L.
LOG OF REVERSE CIRCULATION DRILL HOLE

CO-ORDS 1 54.7mE 921.9mN

HOLE N.° ESRC012

R.L. COLLAR ..... m

INCLINATION 60°

DIRECTION 221°

Sample	ASSAYS ppm Au	Cu				Depth metres	LOG	DESCRIPTION	water
0	<0.01	146						Light brown weathered TALC-CHLORITE-LIMONITE ROCK and red hematitic SILTSTONE	
-2									
-3	<0.01	59				3			
-4	<0.01	18						Red and brownish green hematitic and chloritic SILTSTONE AND MUDSTONE	
-5	<0.01	17				5			
-6	<0.01	27							
-7	<0.01	24							
-8	<0.01	13							
-9	<0.01	11							
-10	<0.01	15				10			
-11	<0.01	7.5				11			
-12	<0.01	10						Lighter coloured - Red-brown hematitic and chloritic SILTSTONES AND MUDSTONES.	
-13	<0.01	8							
-14	<0.01	6							
-15	<0.01	9							
-16	<0.01	10							
-17	<0.01	6				17			
-18	<0.01	17							
-19	<0.01	36							
-20	<0.01	24				20		Light brown and green-brown SILTSTONE	
-21	<0.01	16							
-22	<0.01	23							
-23	<0.01	49				23			
-24	<0.01	269						Brown to reddish brown limonitic and chloritic SILTSTONE with numerous HEMATITIC IRONSTONE stringers.	
-25	0.10	1175							
-26	0.15	1128				26			
-27	0.06	1091				27		CHLORITE SCHIST - minor talc :- SHEARING.	
-28	0.15	1134				28		as above with red hematitic siltstone bands.	
-29	1.95	1160						CHLORITE SCHIST	
-30	1.69	1159				30			
-31	0.15	1042						Red-brown and red hematitic SILTSTONE	
-32	<0.01	1098				32			
-33	<0.01	848							
-34	<0.01	120						Green and red-brown as above.	
-35	0.03	36							
-36	0.02	28				36			
-37	<0.01	16				37		Brownish-green	
-38	<0.01	13							
-39	<0.01	58							
-40	<0.01	87							
-41	<0.01	30							
-42	<0.01	39							
-43	<0.01	168							
-44	<0.01	270							
-45	<0.01	436						Green and pale green to white.	
-46	<0.01	578						CHLORITE - TALC SCHIST.	
-47	<0.01	269							
-48	<0.01	228							
-49	0.05	355							
-50	<0.01	226							
-51	<0.01	85				51 END			

SHEAR / ALTERATION ZONE 23m to 51m+

Scale: .....

Sample N°'s : .....

Hole Target. .....

Drill Type .....

Driller .....

Drilled ..... 198...

Logged .....

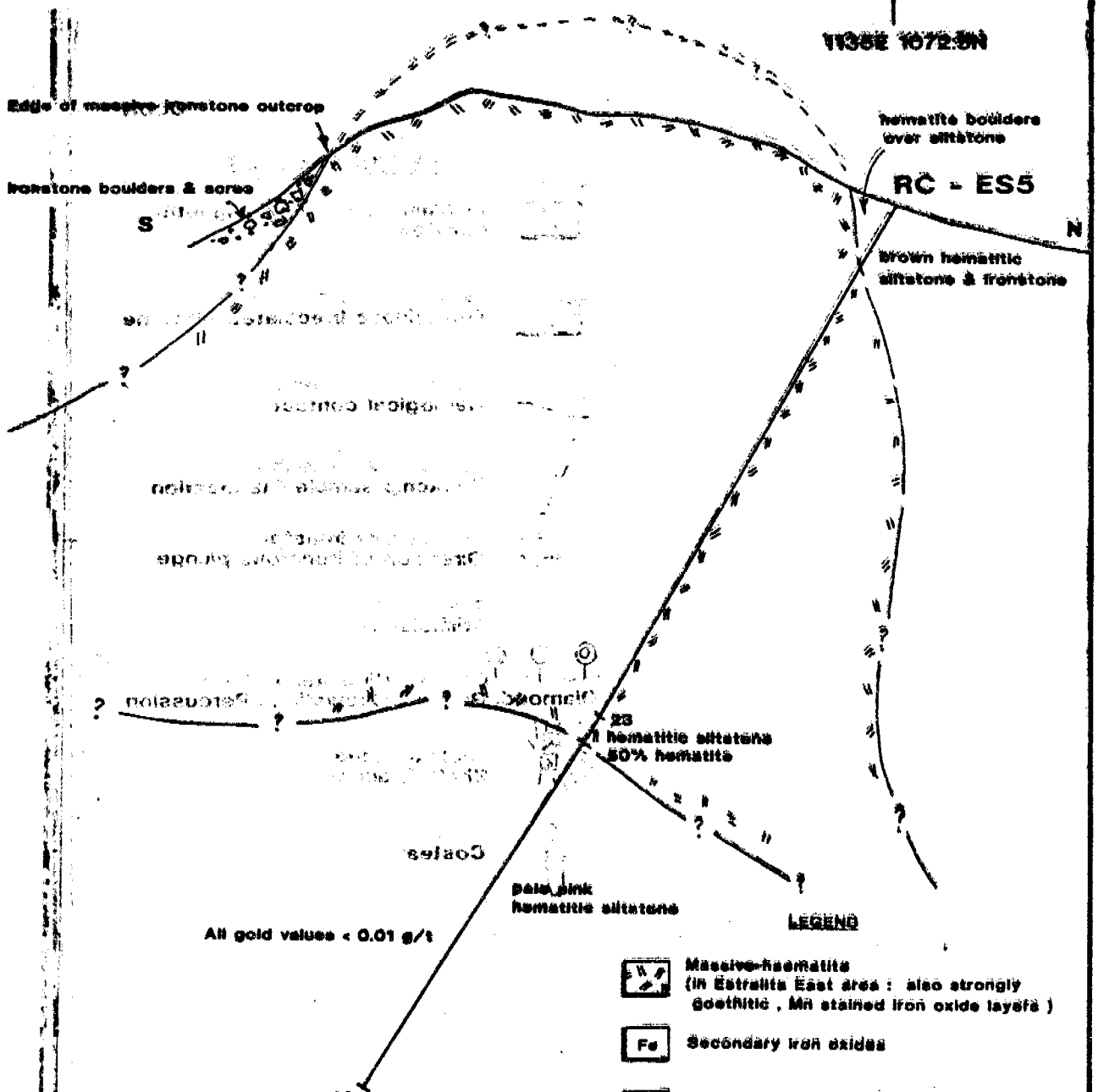
CR92/423

ROEBUCK RESOURCES N.L.

ENTERPRISE - ESTRALITA PROJECT
TENNANT CREEK N.T.

ESTRALITA WEST ZONE
GEOLOGICAL PLAN
WITH SAMPLE & DRILLHOLE LOCATIONS

Author: K. Fox	SCALE 1 : 500	Report No.
Drawn: E.P.	Date: April 1991	Figure No. 2



ROEBUCK RESOURCES N.L.

ENTERPRISE - ESTRALITA PROJECT

TENNANT CREK N.T.

ESTRALITA WEST ZONE

CROSS SECTION 1135mE Looking West

Author: S.E. Warne	SCALE 1 : 250	Report No:
Drawn S.P.	Date: March 1991	Figure No: 3

1165E 1085N

Extreme western end
Estralita workings

scree siltstone

S

N

siltstone & hematitic rubble

RC - ES4

gradational
hematite / siltstone
contact

2·0g

0·1g

hematite siltstone

pink & brown siltstone
becoming less weathered ,
decreasing hematite content ,
increasing fine sand content

80m
oxidised

BASE OF INTENSE WEATHERING

CR92/423

LEGEND

Massive haematite
(in Estralita East area : also strongly goethitic , Mn stained iron oxide layers)

Fe — Secondary iron oxides

h — Haematitic

T — Talc

j — Jasper: buff brown , siliceous rock – possibly silicified carbonate & talc - carbonate

q — Vein quartz

Au g/t — Gold assays in parts per million

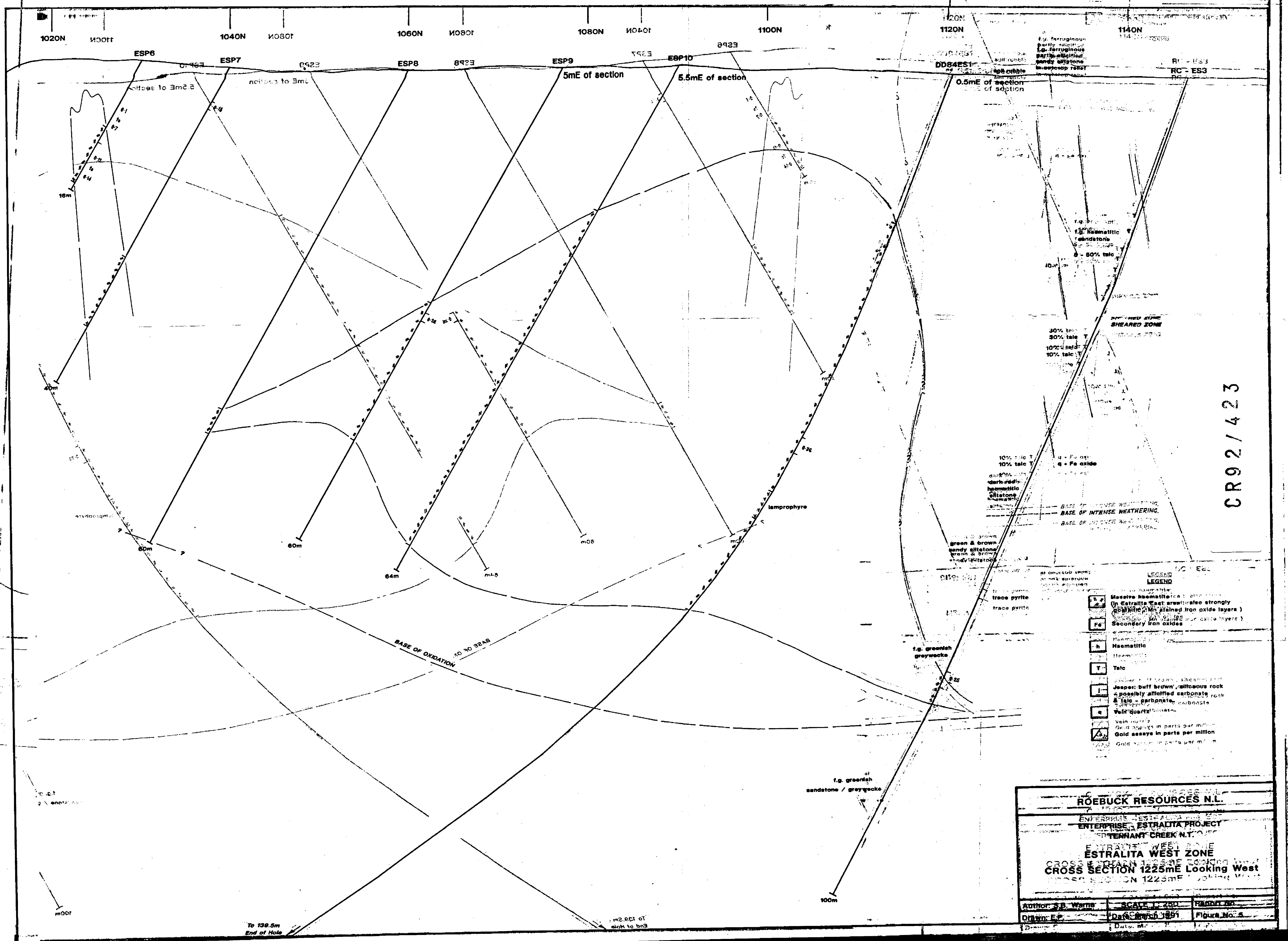
ROEBUCK RESOURCES N.L.

Enterprise - Estralita Project Tennant Creek N.T.

ESTRALITA WEST ZONE

CROSS SECTION 1165mE Looking West

Author : S.B.Warne	SCALE 1 : 250	Report No:
Drawn: E.P.	Date: March 1991	Figure No: 4



1020N
1040N
1060N
1080N
1100N
1120N
1140N
ESP6
ESP7
ESP8
ESP9
ESP10
DD84ES1
RC - ES3
5mE of section
5.5mE of section
0.5mE of section
16m
40m
60m
64m
100m
lamprophyre
SHEARED ZONE
30% talc
10% talc
f.g. haematitic
sandstone
q + Fe oxide
BASE OF INTENSE WEATHERING.
BASE OF OXIDATION
green & brown
sandy siltstone
trace pyrite
f.g. greenish
greywacke
f.g. greenish
sandstone / greywacke
To 139.5m
End of Hole
LEGEND
Massive haematite
(In Estralita East area also strongly goethitic, Mn stained iron oxide layers)
Secondary iron oxides
Haematitic
Talc
Jasper: buff brown, siliceous rock & possibly silicified carbonate & talc - carbonate
Vein quartz
Gold assays in parts per million
ROEBUCK RESOURCES N.L.
ENTERPRISE - ESTRALITA PROJECT
TENNANT CREEK N.T.
ESTRALITA WEST ZONE
CROSS SECTION 1225mE Looking West
Author: S.B. Warne
SCALE 1: 250
Drawn: E.P.
Date: March 1991
Figure No. 5
CR92/423

CR92/423

ROEBUCK RESOURCES N.L.

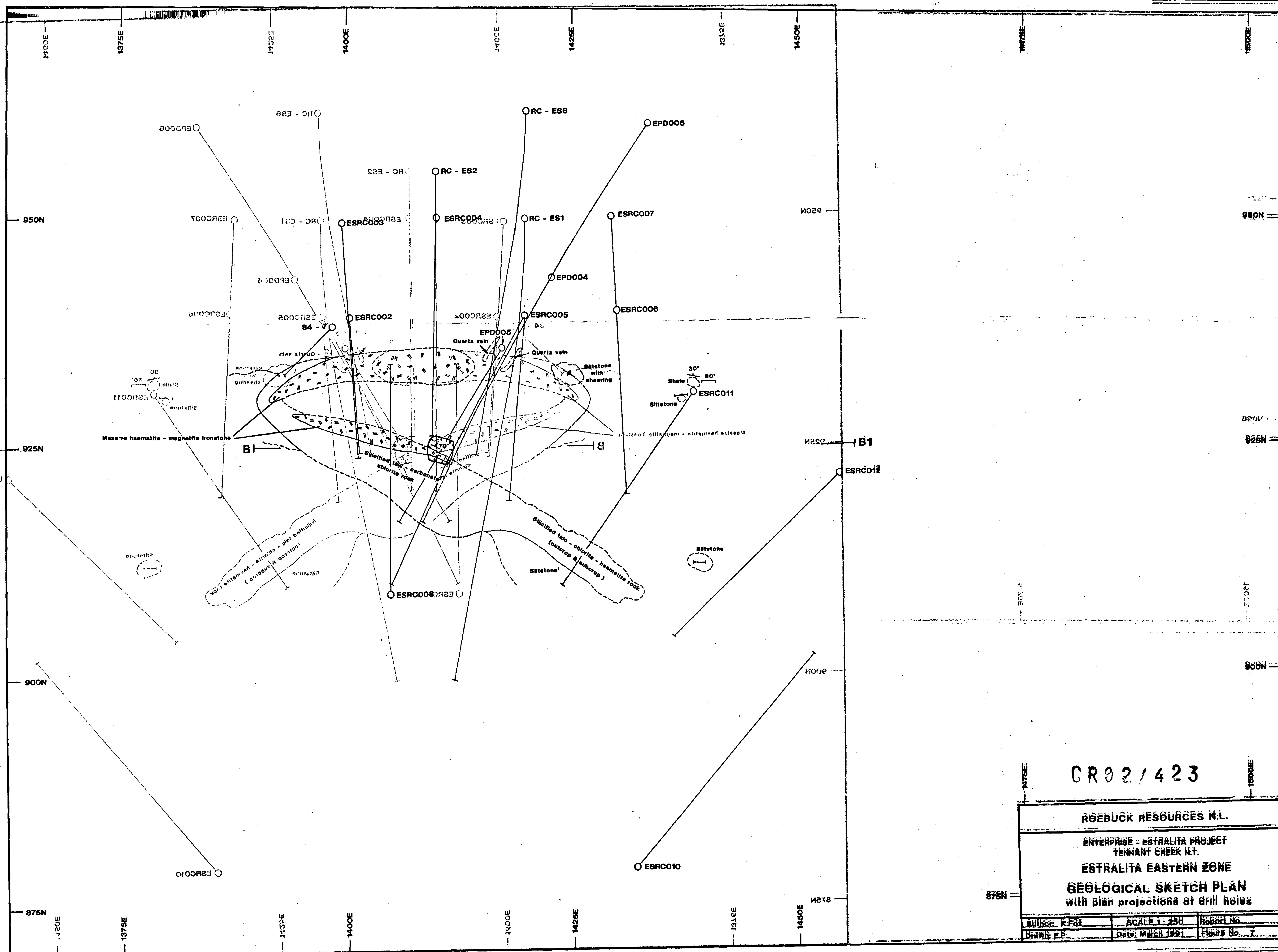
ENTERPRISE - ESTRALITA PROJECT

TENNANT CREEK N.T.

ESTRALITA CENTRAL & EASTERN ZONES

GEOLOGICAL PLAN
WITH SAMPLE & DRILL HOLE LOCATIONS

Author: S.B.Warne	SCALE 1 : 250	Report No.
Drawn: E.P.	Date: April 1991	Figure No.6



CR92/423

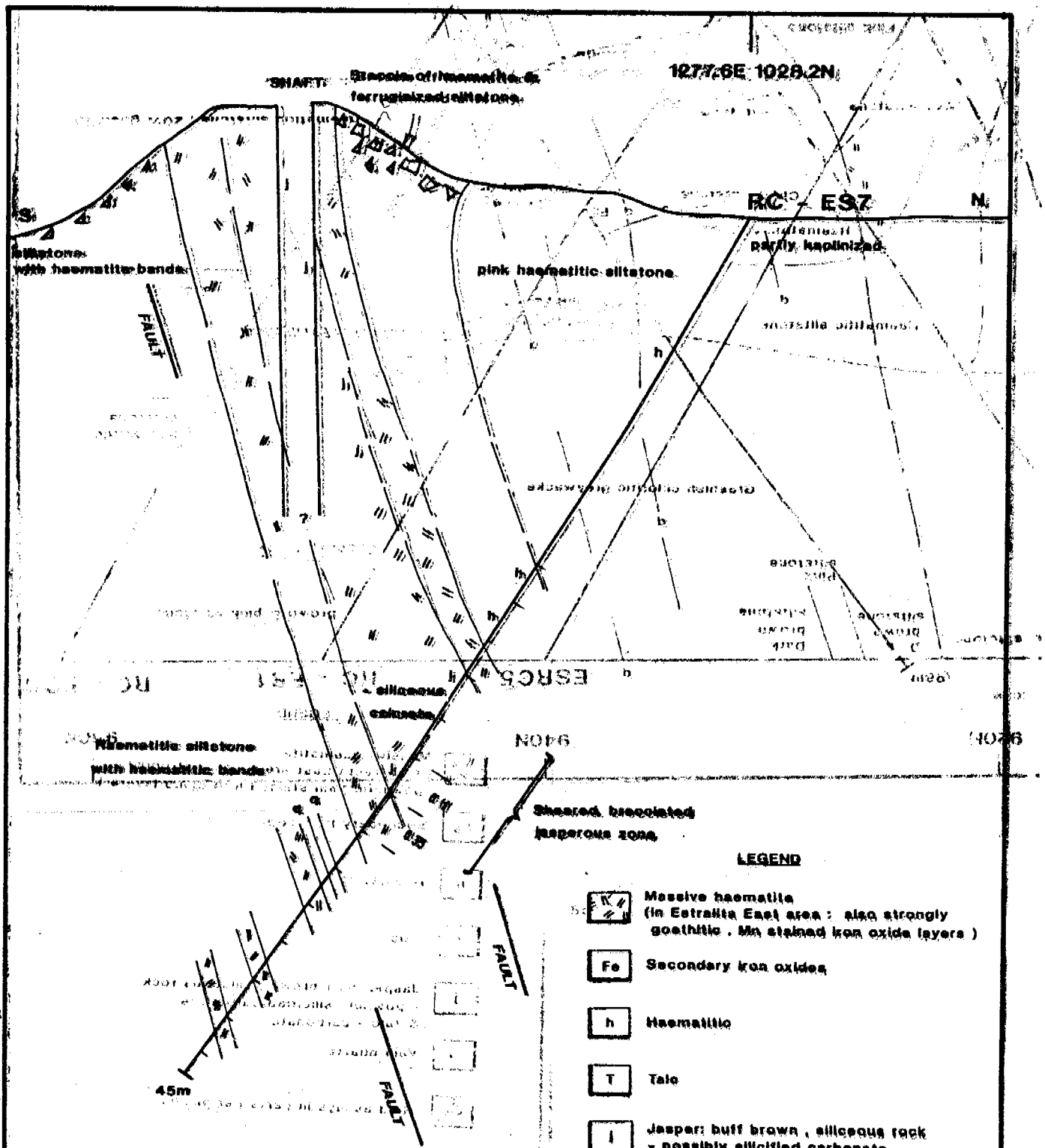
ROEBUCK RESOURCES N.L.

ENTERPRISE - ESTRALITA PROJECT
TENNANT CREEK N.T.

ESTRALITA EASTERN ZONE

GEOLOGICAL SKETCH PLAN
with plan projections of drill holes

Author: K.FOX	SCALE 1 : 250	Report No.
Drawn: E.P.	Date: March 1991	Figure No. 7



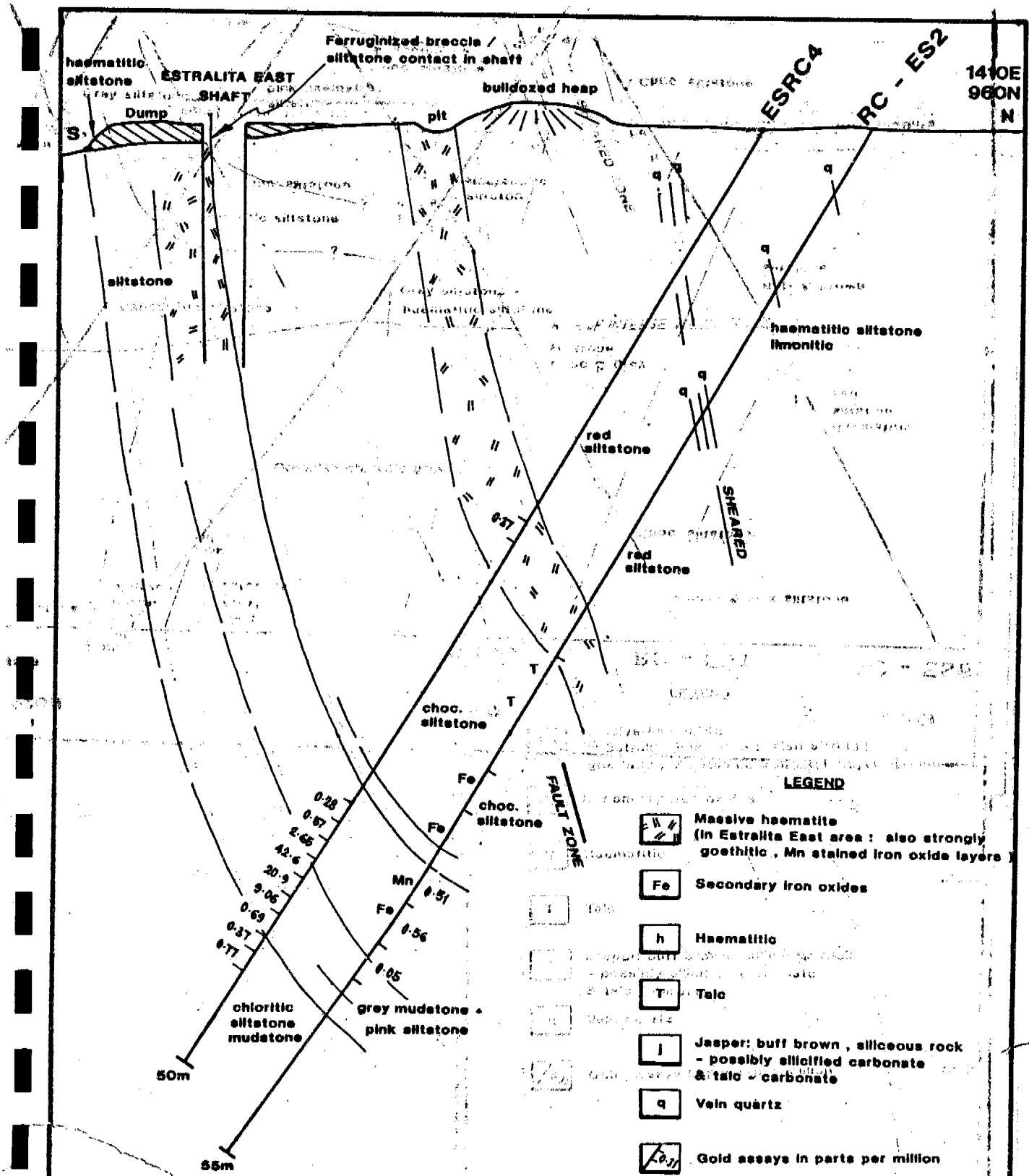
ROEBUCK RESOURCES N.L.

ENTERPRISE - ESTRALITA PROJECT
TENNANT CREEK N.T.

ESTRALITA CENTRAL ZONE

CROSS SECTION 1278mE Looking West

Author: S.B. Warne	SCALE: 1 : 250	Report No.
Drawn : E.P.	Date: March 1991	Figure No. 8



ROEBUCK RESOURCES N.L.

ENTERPRISE - ESTRALITA PROJECT
TENNANT CREEK N.T.

ESTRALITA EAST ZONE

CROSS SECTION 1410mE Looking West

Author: S.B. Warne	SCALE: 1 : 250	Report No.
Drawn : E.P.	Date: March 1991	Figure No. 9

900N

920N

940N

960N

Projected Footwall (approx.)

Siliceous outcrop 3mE

Ferruginous zone

ESRC5

RC - ES1

RC - ES6

Pink siltstone

Dark brown siltstone

Dark brown siltstone

Pink siltstone

Brown & pink siltstone

Choc. siltstone

Choc & grey siltstone

Haematitic siltstone red

Buff & brown siltstone

Choc. siltstone

goethite

Haematitic siltstone , 20% goethite

Choc. siltstone

Choc. siltstone & goethite

Pink siltstone

Grey siltstone

Ferruginous pink haematitic siltstone

SHEARED ZONE

40m

Haematitic siltstone

Haematitic siltstone

Haematitic siltstone

Grey siltstone + haematitic siltstone

BASE OF INTENSE WEATHERING

Greenish chloritic greywacke

69m

Greenish chloritic mudstone & greywacke

85m

LEGEND

- Massive Haematite (in Estralita East area : also strongly goethitic , Mn stained iron oxide layers)
- Fe — Secondary iron oxides
- h — Haematitic
- T — Talc
- J — Jasper: buff brown , siliceous rock possibly silicified carbonate & talc - carbonate
- q — Vein quartz
- Au g/t — Gold assays in parts per million

Top of talc - chlorite - carbonate alteration zone (correlatable "cap")

ROEBUCK RESOURCES N.L.

Enterprise - Estralita Project Tennant Creek N.T.

ESTRALITA EAST ZONE

LONGITUDINAL PROJECTION B - B1

CROSS SECTION 1420mE Looking West

CR92/423

1400E

1420E

1440E

B

B1

PD84ES7

ESRC003

ESRC002

ESRC008

ESRC004

RC - ES2

EPD5

ESRC005

RC - ES1

RC - ES6

EPD4

ESRC007

ESRC009

ESRC010

EPD6

ESRC011

ESRC012

SHAFT

"B"

"A"

and

2m x 39.16

"B"

1m x 1.12

2m x1.07

"A"

"A"

"A"

"A"

"A"

"A"

"A"

"A"

"A"

Ferruginous quartz veined zone

? "A"

Haematite(minor) logged but may be massive

Ferruginous zone anomalous in gold possible "A" ZONE

Talc (massive) limonite alteration zone "B" Zone

Anomalous gold values in "B" Zone

Chlorite (massive) schist altered "B" zone

NDE for ZONE "B"

Talc - chlorite alteration

Talc - chlorite (massive)schist with anomalous gold values.

ZONE "B"

1m x 1.25

Anomalous Au to 0.4 p.p.m. possible "B" shear zone

?"B"

1m x 0.69 may be H.W. of "B"zone

Felcose zone

? "A"

"B"

4m x 18.8

"B"

12m x 17.26

Ferruginous chlorite shearing

Expected position of zone "B" not present

NDE for, ZONE "B"

Hole drilled on N azimuth collared south of target zones - did not reach target zones "A" & "B"

Expected hanging wall of zone "B" in RC - ES6, not present or hole not deep enough

1400E

1440E

Area of expected intersection of "B" zone in EPD6 absent

KEY

Approx. boundary of mineralization >1g/t Au

Boundary of zone "B" ironstone

Top of talc - chlorite - carbonate alteration zone (carbonate "cap")

Shearing - possible "B" ZONE (with 70° dip to south)

CR 92/423

ROEBUCK RESOURCES N.L.

Enterprise - Estralita Project Tennant Creek N.T.

LONGITUDINAL PROJECTION B - B1

Looking North with interpreted limits of ironstone & >1g/t gold mineralization

Author: K.Fox	SCALE 1": 250	Report No.
Drawn: E.P.	Date: March 1991	Figure No. 11