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RENISON LIMITED

S.P.L. 27 - SOUTH DUNDAS
PART OF E.L. 42/71

1970-71 ANNUAL REPORT

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&

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Date: 7th July 1971

1

C O N T E N T S

PLANS AND SECTIONS

Drawing 1: S.P.L. 27 Locality Map.

Drawing 2: Geological Map showing main grids, I.P. Anomalies, and D.D.H. Locations. Scale 1" = 400'.

Drawing 3: Section of D.D.H. 277. Scale 1" = 200'.

Drawing 4: Section of D.D.H. 283 Scale 1" = 200'.

Drawing 5: Section of D.D.H. 284 Scale 1" = 200'.

Drawing 6: Section of D.D.H. 282 Scale 1" = 200'

Drawing 7: Section of D.D.H. 286 Scale 1" = 200'

1. INTRODUCTION

Work on S.P.L. 27 during 1970-71 was concentrated on further testing of geophysically anomalous areas in the North and South of the S.P.L. area. Two I.P. anomalies in the North, and two in the South were tested by single diamond drill holes. A fifth diamond drill hole located in the Razorback ultrabasic zone was designed to test asbestos mineralisation in this area. A total 3,430 ft. of drilling was completed.

The license area has resolved itself into two main areas of interest. Firstly the asbestos potential of the ultra-basic bodies present, and secondly the geologically disturbed area South of Commonwealth and Pine Hills where Middle - Cambrian sediments and volcanics have been intruded by acid, basic and ultra-basic bodies.

A programme of continued exploration of these two areas of interest is recommended.

2. PREVIOUS WORK:

During 1958-59, the Department of Mines drilled two diamond drill holes into the Kapi Mine (see Location on Drawing 2) and one hole into the Melba Mine (Drawing 2). Holes were also drilled at the Razorback and Grand Prize Mines but as these are not held by Renison Limited, they will not be discussed in this report.

During 1960, the Bureau of Mineral Resources conducted detailed geophysical surveys between the Razorback and Grand Prize Mines. These surveys covered most of the Razorback ultra-basic body.

The 1960 Blissett Gulline described the Razorback and Grand Prize Mine workings in detail ("Tin Mineralisation near Mt. Razorback, Dundas", Department of Mines Tech. Report No. 5, 1960).

Blissett, in his explanatory report on the one mile geological map of the Zeehan quadrangle in 1962, described the workings of the Melba (or Madam Melba) and Kapi Mines.

During 1969-70, Renison Limited cut access tracks over large areas in the North and South of the S.P.L., and conducted mapping, geochemical sampling, magnetometric and I.P. surveys over most of the grids cut. The results of this work are presented in the 1969-70 Annual Report on S.P.L. 27 and in a C.G.G. Geophysical Report, "Geophysical Survey at Serpentine Hill, Razorback, Commonwealth and Pine Hills".

A progress report on 1970-71 activities was prepared by J. Webb in February, 1971: "S.P.L. 27 Report for the Six Month Period ending February, 1971".

This annual report contains some sections from Webb's report.

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3. WORK COMPLETED 1970-71:

3.1. Razorback Area:

Work in this area was confined to the large ultra-basic body lying North of Mt. Razorback (Drawing 2). Interest was centered on the contact margins of the body where there was a possibility of Cu - Ni or Sn sulphide mineralisation and on the asbestos potential of the ultra-basic.

During the 1969-70 year, geological mapping, geochemical, magnetometric and I.P. surveys were conducted on a grid cut across the ultra-basic.body and its adjacent sediments.

3.1.1. Costeaning and Geological Mapping:

During 1970-71, a series of roads and costeans were cut across the ultra-basic body to improve the generally poor rock exposure in the area, as it was realized that the only effective way of initially evaluating an asbestos deposit is visually.

The resultant improved exposure allowed some "rough" mapping of the asbestos content of the exposed ultra-basic by a Renison Limited geologist who was unfortunately not skilled in asbestos evaluation. A suitable consultant was finally brought in to make a preliminary assessment of the asbestos potential of this area and his work is commented on below.

The geological setting of the ultra-basic is shown on Drawing 2. It appears to have intruded a sequence of Middle Cambrian sediments (Dundas Group), probably during the Upper Cambrian. Subsequent deformation of the area resulted in serpentinization and shearing in what was probably originally a pyroxenite. Unlike the ultra-basic on Serpentine Hill, no relict igneous textures or rock types are obvious.

006

Variations of the shearing intensity within the serpentinite are obvious but the pattern, if there is one, has not as yet been recognised.

Asbestos mineralisation is widespread, dominantly slip fibre type but short length cross fibre is present in small amounts. The asbestos is discussed further in 3.1.2.

3.1.2. Drilling:

Three diamond drill holes were drilled during the year, the first to test a combined geophysical - geochemical anomaly on the south west ultra-basic-sediment contact, a second to test both geophysical anomalies and asbestos mineralisation near the Northern margin of the ultra-basic and a third to test for the asbestos content near the centre of the ultra-basic.

The first hole S282 (See Drawing 6), even though 1,101 ft. long, didn't reach the sediment contact. It did, however, test a rather broad anomalous I.P. zone, which was also magnetically and geochemically anomalous. It can be argued however that deformed and altered ultra-basic margins such as this are generally very responsive to geophysical surveys, and that Ni values of 0.2% are fairly normal. Generally speaking it is unlikely that economic sulphides will be located in such a zone as this one unless there is some gossan developed on the surface. Perhaps one shorter hole, sited closer to the contact would have been a better proposition in this case. Fairly normal untra-basic Ni and magnetite concentrations were encountered in the hole. There were no economically interesting

intersections and there was only very minor asbestos mineralisation throughout.

The second and third holes, S286 and S290, were designed primarily to test the asbestos mineralisation and were drilled H.Q. size. S286 was drilled close to the Northern margin of the ultra-basic and contained low grade slip fibre asbestos throughout. S290 was drilled near the centre of the ultra-basic and generally contained higher grades of slip-fibre material throughout than did S286. Both holes contained sufficient amounts of magnetite to have produced the corresponding magnetic, and possibly the I.P. anomalies.

3.1.3. Consultant Evaluation:

During May 1971, Mr. C. Lord of Conwest Australia N.L., who has had considerable experience evaluating the asbestos deposits of the Canadian operating asbestos mines of Clinton and Cassiar, visited the Razorback area for several days to make some initial appraisal of its asbestos potential.

Lord's conclusions were that whilst the grade and quality of the fibre present was low, there was a very large tonnage potential. He estimated the grade of fibre at about 1.5-2% and a conservative 80,000,000 tons of fibre bearing rock present. The fibre is dominantly short, harsh and brittle, slip fibre material having a poor color and containing quite high talc and magnetite concentrations, with only minor quantities of thin cross fibre present. A total 45 ft. of drill core from 3 distinct intervals of S290, which Lord considered as containing the best asbestos fibre, has been sent to Cassiar Asbestos in Canada for testing.

Results of this testing are not yet to hand.

008

Lord recommended that should the testing of this core be encouraging, then a fairly substantial exploration programme should be embarked upon, consisting in the first instance of shallow close spaced BQ drilling and detailed fibre mapping of outcrops.

3.2. Serpentine Hill Area:

Following geochemical, geophysical and geological work around the Serpentine Hill ultra-basic area during 1970, one diamond drill hole was drilled in the area during the 1970-71 year. In addition to this, Mr. Lord spent several days conducting an initial appraisal of the asbestos potential of the ultra-basic.

3.2.1. Geology, Geophysics and Geochemistry:

The ultra-basic body on Serpentine Hill (See Drawing 2) appears to have intruded a sequence of Lower Cambrian sediments and Mid-Cambrian spilitic lavas. Although the intrusive is probably of the same age as the Razorback ultrabasic (Upper Cambrian), it does appear to be more complex and to have suffered less extensive and intensive serpentinization. There are numerous small pyroxenitic and gabbroic bodies, which in the case of the former, have not suffered any serpentinization. Within the Serpentine Hill ultrabasic itself, there are large relict blocks of pyroxenite still clearly visible in the serpentinized ultra basic.

This unfortunately does suggest that the serpentinization of the ultra-basic was far from complete or uniform and it follows that the development of asbestos fibre will be similarly patchy.

The I.P. magnetometric, and geochemical surveys conducted during the 1970 summer, outlined many apparently anomalous zones around the margin of the ultra-basic body. In retrospect however,

004

these anomalies like those at Razorback are not unusual over ultrabasics. Also there was no extensive gossan development on the contacts.

3.2.2. Drilling:

One diamond drill hole, S277 (See Drawing 3) was drilled to test a strong, combined I.P. - S.P. anomaly on the Northern contact zone of the ultra-basic area. The decision to drill was made only after costeaning revealed no obvious source of the anomaly. However, graphitic shales were intersected on the intrusive-sediment contact and these undoubtedly produced the geophysical anomaly. No significant sulphides were intersected.

3.2.3. Consultant Evaluation:

Mr. Lord spent several days making an initial evaluation of the asbestos exposed on Serpentine Hill.

His conclusions were that the fibre here was dominantly cross-fibre of reasonably good quality and grade. However, the tonnage potential of the area appeared low. Unfortunately the highest grade fibre exposed appeared to form in a concentric manner around unserpentinized pyroxenite or bronzite blocks suggesting that fibre continuity throughout the ultra-basic is very unlikely.

Lord's overall conclusion was that if tests of the Razorback asbestos were encouraging then the richer but smaller Serpentine Hill deposit could provide a "sweetener" to any mining venture. High Cr values in the Serpentine Hill ultra-basic could prove Cr to be a useful byproduct of any eventuating mining operation.

3.3. ARGENT - KAPI AREA:

Following geochemical, geological and geophysical surveys in this area South of Pine Hill and Commonwealth Hill during the 1969-70 year, two diamond drill holes, S283 and S284 (See Drawings 4 and 5) were drilled in the area.

The result of this drilling combined with other drilling results in Pine and Commonwealth Hills area, whilst not being immediately encouraging, suggest that further work in the general region is warranted.

3.3.1. Geology, Geophysics and Geochemistry:

Under these headings the area is best thought of in conjunction with the Pine and Commonwealth Hills area (lying within the Renison Mining Lease) because of geological similarities.

The geology of the area (See Drawing 2) consists essentially of a sequence of Lower and Middle Cambrian sediments and volcanics, intruded and probably structurally deformed in the Upper Cambrian by a series of gabbroic and ultra-basic rocks.

The sequence was even more severely disturbed during a Devonian orogeny which was accompanied by the intrusion of the Pine Hill quartz porphyry mass. These disturbances resulted in the serpentinization of many of the small ultra-basic bodies present and the sometimes complete alteration of some of the sedimentary beds present as evidenced by the development of actinolite and tremolite rich rocks.

Mineralisation of a varying nature intruded along zones of structural weakness, such as the Kapi Creek fault zone. Sulphide mineralisation is widespread in the intruded rocks surrounding the quartz porphyry.

In general the are appears geologically favourable for the formation of sulphide

ore bodies.

An I.P. survey conducted in the area during the 1970 summer outlined many anomalous zones, two of which were drilled on S.P.L. 27 on the basis of supporting geochemical and magnetometric information.

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3.3.2. Drilling:

The first hole S283 (See Drawing 4) was drilled to test a geophysical and geochemical anomaly. The hole collared in serpentinite but passed into a wide altered contact zone at about 85 - 95 ft. before passing into argillite which carried varying but very low grade disseminated sulphide. The only intersection of any interest was 85 ft - 95 ft. which carried 0.15% Sn but less than 0.1% Cu and As, in a quartz tourmaline alteration zone.

The second hole, S284 (Drawing 5), also collared in serpentinite and was designed to test a combined geophysical and geochemical anomaly. The hole was completed in argillite at a depth of 788 ft.. The serpentinite - argillite contact was unmineralized but sparse sulphide mineralisation occurred throughout the hole. The only significant result was 380 ft. - 385 ft. which assayed 1.52% Sn, 25% S. The interval 335 ft. - 388 ft. averaged 0.19% S and 4.8% S. Alteration associated with quartz - tourmaline mineralisation was widespread throughout the hole.

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4. RECOMMENDATIONS AND CONCLUSIONS:

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Work during the 1971-72 year is recommended only in Razorback and Argent - Kapi areas, both of which are regarded as still of economic interest. No further work has been planned for the Serpentine Hill area during 1971-72.

4.1. Razorback Area:

No work is recommended pending receipt from Canada of the test results being conducted on the selected sections of drill core.

Should these results be encouraging then a sizeable programme of clearing, costeaning, shallow hole close spaced BQ drilling and fibre mapping is recommended.

If the testing is not encouraging, then before abandoning the area, a few more well placed short holes, say 50 ft. long, using Longyear double tube swivel type wireline core barrels for greater and less disturbed core recovery, are recommended.

No further drilling of the Serpentinite margins is recommended.

4.2. Argent - Kapi Area:

This area should be considered jointly with the Pine and Commonwealth Hills area. Further work is recommended on that area between these two hills in the North and the Kapi Creek workings in the South.

4.2.1. Geological, Geophysical and Geochemical Work:

The up-dating of the currently widely used geological map of the area is the first job recommended. This map is quite inaccurate both geologically and geographically. It is recommended that data be presented on a scale of 1" = 200' for this area in future, paying particular attention to the accurate location of grids, drill holes, roads etc.

It is further recommended that geological mappings (No. A) geochemical sampling and ground magnetometric surveys be extended South to cover the Kapi Creek area.

4.2.2. Track Cutting

To enable the above recommendations to be completed, the existing Pine Hill grid will have to be extended south. Because of the dense bush in the area, professional cutters are recommended or the job.

4.2.3. Drilling

It is possible that work may have progressed satisfactorily to such a stage by the second half of the 1971-72 year that drilling may be warranted.

If this is the case, then a drilling programme co-ordinated with one on the Razorback ultra basic seems logical.

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5 cm

NORTH WESTERN TASMANIA
LOCALITY PLAN
OF

SCALE: 1:500,000.

C. Grim
ROBBINS ISLAND
Stanley
Smithton
Rocky Cape
Marrawah
Table Cape
Wynyard
BURNIE
Penguin
ULVERSTONE
DEVONPORT
ARTHUR RIVER
NELSON BAY
Balfour
KENNETH BAY
Sandy Cape
A.C.I. OPERATIONS P/L.
E.L. 49/70
232 S.M.
PIEMAN JOINT VENTURE
Waratah
Savage River
E.L. 8/65
Mainoa
63 S.M.
Cradle Mt.
Corinna
Pieman Heads
Conical Rock
E.L. 48/70
228 S.M.
PIEMAN RIVER
Tullah
Rosebery
Renison Bell
Granville Harbour
S.P.L.27
E.L. 9/66
66 S.M.
Zeehan
Trial Harbour
E.L. 10/69 (1)
23 S.M.
E.L. 10/69 (2)
45 S.M.
Queenstown
Strahan
S.P.L. 94
KING RIVER
C. Sorell
Derwent Bridge
TO HOBART

M1-784

1431

1432

RENISON LTD.
CONSOLIDATED MINING LEASE

COMMONWEALTH HILL
PINE HILL
CONFIDENCE SADDLE
BLACK HILL
CARBINE HILL
DUNDAS TOWN SITE
MT. RAZORBACK
SERPENTINE HILL
QUARRY
Argent Creek
EMU BAY RAILWAY
MELBA CREEK
KAPI CREEK
PINE HILL TRACK
N.E. DUNDAS TRAM
WELLESLEY TRAM (Disused)
MURCHISON HIGHWAY
To Murchison Highway
To Renison Bell Mine

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15

Petrance Workings
Madam Melba Workings
Kapi Ck. Workings
Old Lyell Copper Deposit Workings

Ela Emb Dqp Eug Emg Euc Emt Emp Ems Eus

102M/66 40 W.J. Hodge
25M/52 20 W.J. Hodge
29M/51 20 W.J. Hodge BRAND PRIZE MINE
2M/40 GIPPSLAND MINERALS N.L.
3M/40 20 RAZORBACK MINE GIPPSLAND MINERALS N.L.
21M/66 18
38M/50 GIPPSLAND MINERALS N.L.
48M/39 5 GIPPSLAND MINERALS N.L.

—INDEX—

DEVONIAN — Dqp — Pine Hill Quartz-Porphyry
UPPER CAMBRIAN — DUNDAS GROUP — Eus — Shales and Siltstones; Euc — Conglomerates; Eug — Siltstones, Grits and Cherts
MID-UPPER CAMBRIAN — ULTRA BASIC SEQUENCE — Ems — Melba Spilites; Emt — Tremolite Rock; Emg — Layered Gabbros; Emp — Layered Pyroxenites & Pyroxenite-Norites; Ema — Serpentinite with Relict Igneous Textures; Emb — Serpentinite
LOWER-MID CAMBRIAN — Ela — CRIMSON CREEK FORMATION : Argillites
38N — Grid Lines (Cut Walking Tracks)
Geological Boundary — known
Geological Boundary — inferred
Faults — known
Faults — inferred
Drivable Roads
Walking Tracks
Strike and dip of Bedding & Layering
Lease Boundaries
Abandoned Mines
$300 — Diamond Drill Hole Locations
A1 — Axes of Polarizable Bodies
I.P. Anomalous Zone

GRID TRUE MAG.

856016 (2.)

RENISON LTD.
S.P.L. 27 1432
SURFACE GEOLOGY
SCALE: 1"=400' DRAWN BY L.A.Thornley DATE: JUNE 1971

5 cm

41-7814

SERPENTINE HILL

S 277

71-784

SELF POLARIZATION RESULTS.

-100

+100

2500N 2000N 1500N

INDUCED POLARIZATION RESULTS.

44 46 48 43

40 30 20 10

2500N 2000N 1500N

GEOCHEMICAL SAMPLING RESULTS.

700 1000 1000 1600 4000 1000

ppm.Ni.
ppm.Cu.
X ppm.Sn.

500 400 300 200 100

2500N 2000N 1500N

VERTICAL MAGNETIC INTENSITY (GAMMAS).

-7495 -5795 -6395

-2500 -2000 -1500 -1000 -500 0 +500

2500N 2000N 1500N

CROSS SECTION. (HEIGHTS ABOVE SEA LEVEL).

S 277

1200 1100 1000 900 800 700 600

V Serpentine.
Sheared serpentine and shale.
Graphitic shales.
Shear

1700N 1800N 1900N 2000N 2100N 2200N 2300N 2400N 2500N 2600N 2700N 2800N

Traverse 73.W.

S 277

PLAN OF DRILL SITE.

5 cm

856017

71-784

1433

ARGENT-KAPI

S 283

700 ft North along traverse 3300 WEST

SELF POLARIZATION RESULTS

-50
0
+50

0 1000N 2000N 3000N

INDUCED POLARIZATION RESULTS

56 47 51 102

40
30
20
10

0 1000N 2000N 3000N

GEOCHEMICAL SAMPLING RESULTS

950 900 750 1400 1800 620 580 3340

500
400
300
200
100

X. ppm.Sn
O ppm. Cu.
■ ppm.Ni

0 1000N 2000N 3000N

VERTICAL MAGNETIC INTENSITY (GAMMAS)

900 465

-3000
-2000
-1000

0 1000N 2000N 3000N

CROSS SECTION (HEIGHTS ABOVE SEA LEVEL)

1600
1400
1200
1000
800
600
400
200

S283
Serpentinite
contact Zone
Grades Sulphides Generally Low
Argillite
Serpentinite
Argillite
E/H 597'
Ela
Emb
Emt

Ela – Argillite
Emb – Serpentinite
Emt – Tremolite (Alteration) Rock

0 1000N 2000N 3000N

ARGENT-KAPI S283 : COLLAR : LINE 3800W, 700'N.

856018 (4)

5 cm

MI-784 1434

ARGENT-KAPI.

S 284

SELF POLARIZATION RESULTS.

INDUCED POLARIZATION RESULTS.

286

GEOCHEMICAL SAMPLING RESULTS

2000 22502300

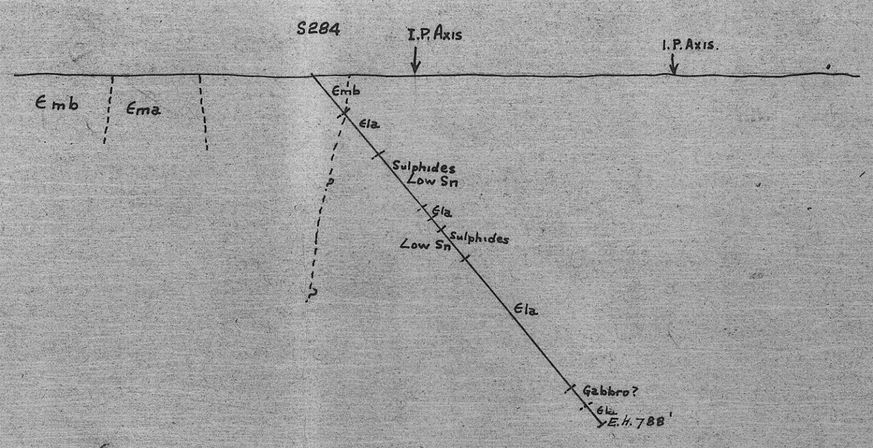
ppm. Ni.
ppm. Cu.
ppm. Sn.

−5380 − 6030

VERTICAL MAGNETIC INTENSITY (GAMMAS)

−20

CROSS SECTION (HEIGHTS ABOVE SEA LEVEL)



Ema – Serpentinite with Relict Igneous Textures
Emb – Serpentinites
Ela – Argillites

ARGENT-KAPI S284 : COLLAR LINE 4100W ; 700'N

856019

5 cm

(5)

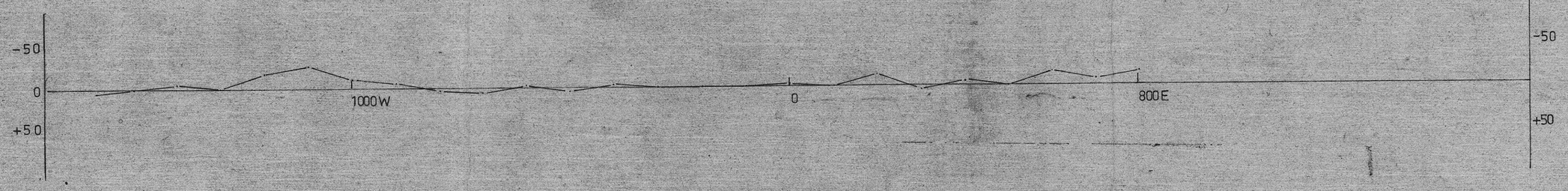
M1-784 1435

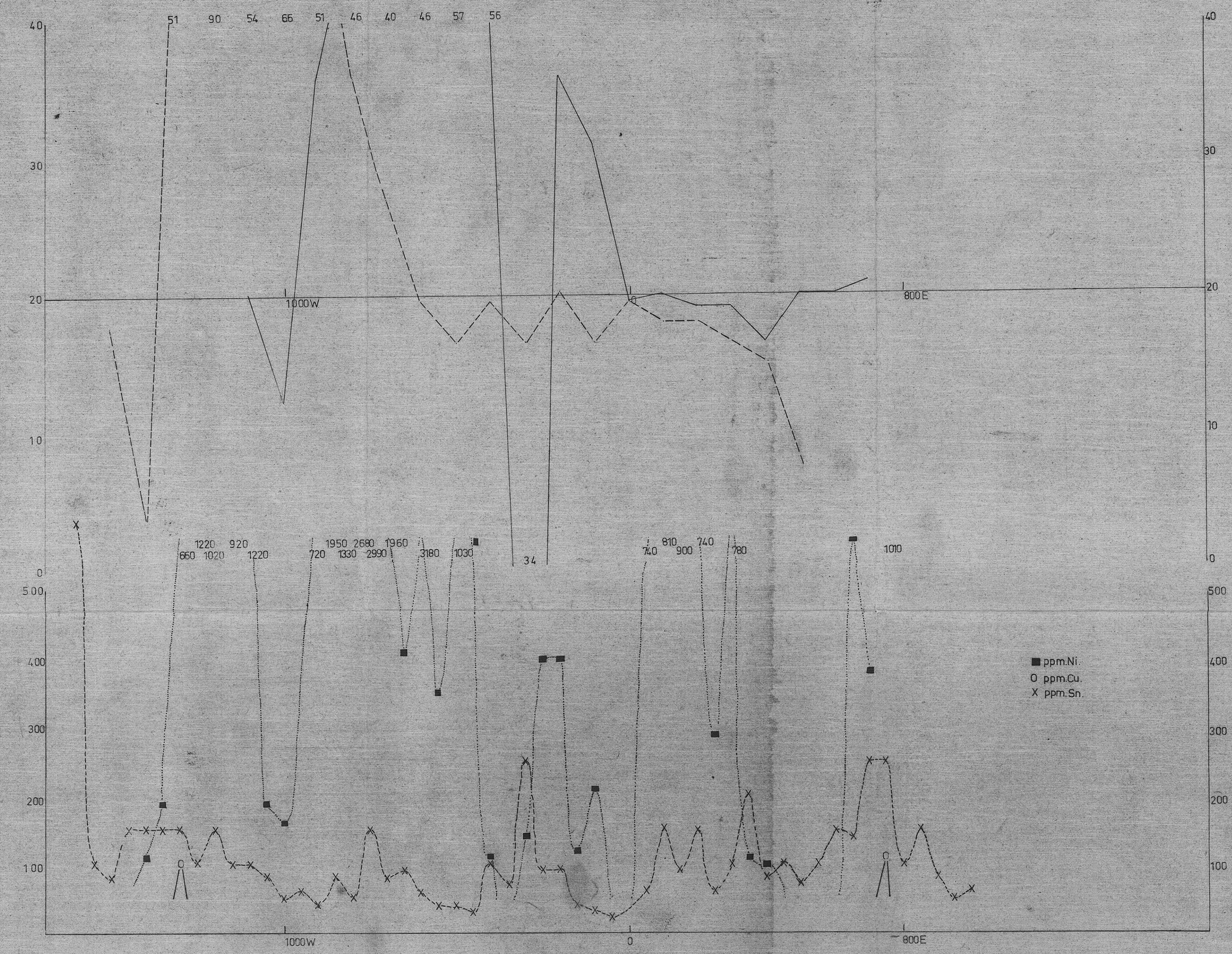
RAZORBACK

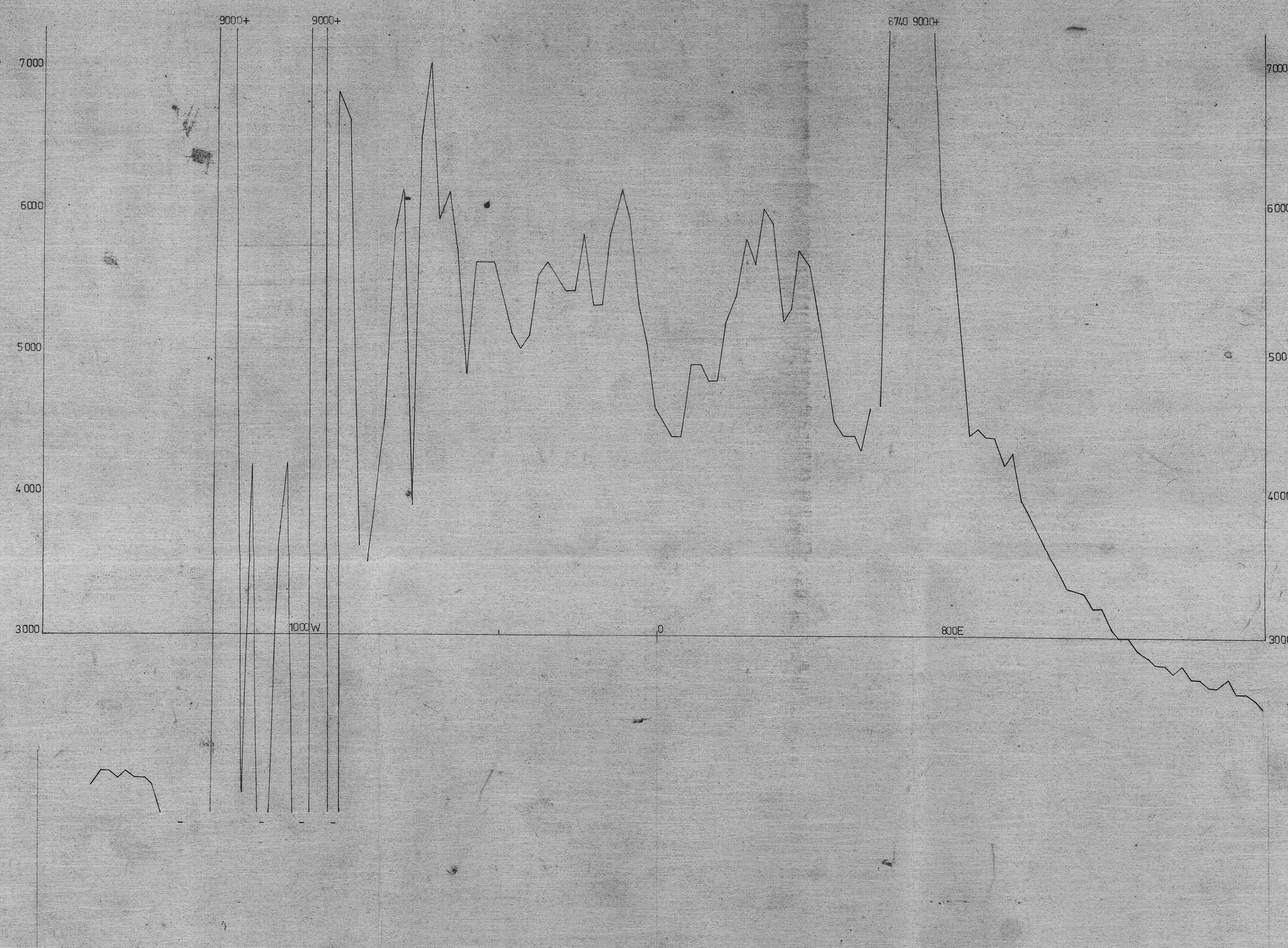
S 282 (6)

856020

RAZORBACK – S282 LINE 4360N, 150W







Euc = Dundas Group Conglomerates

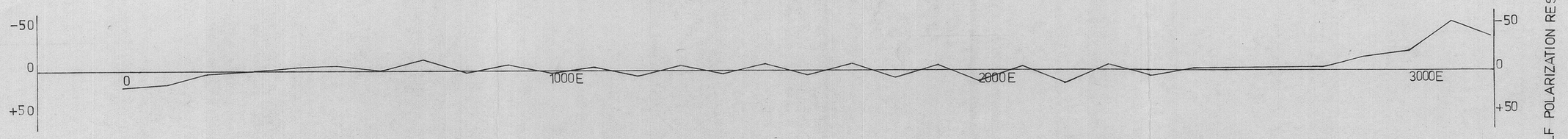
Emb = Razorback Serpentinite

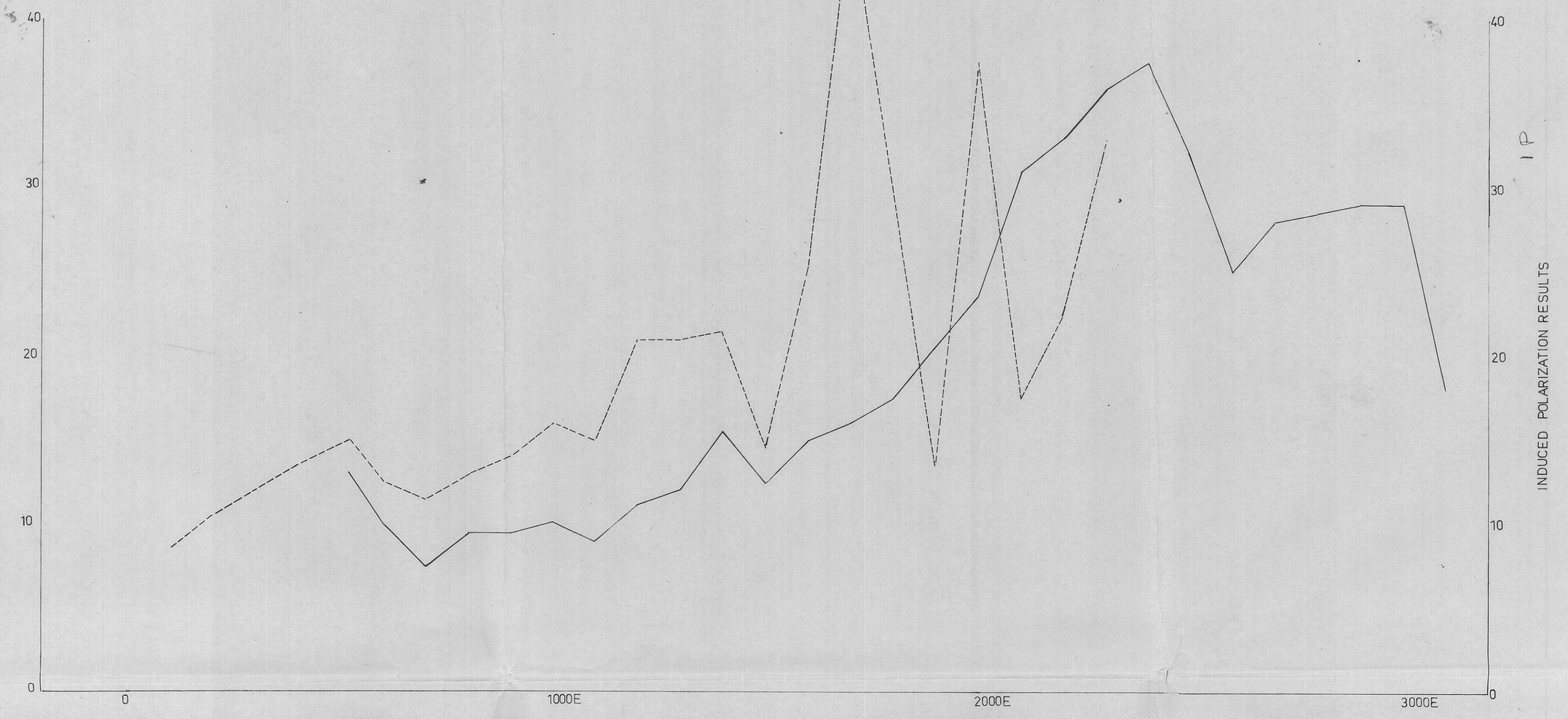
5 cm

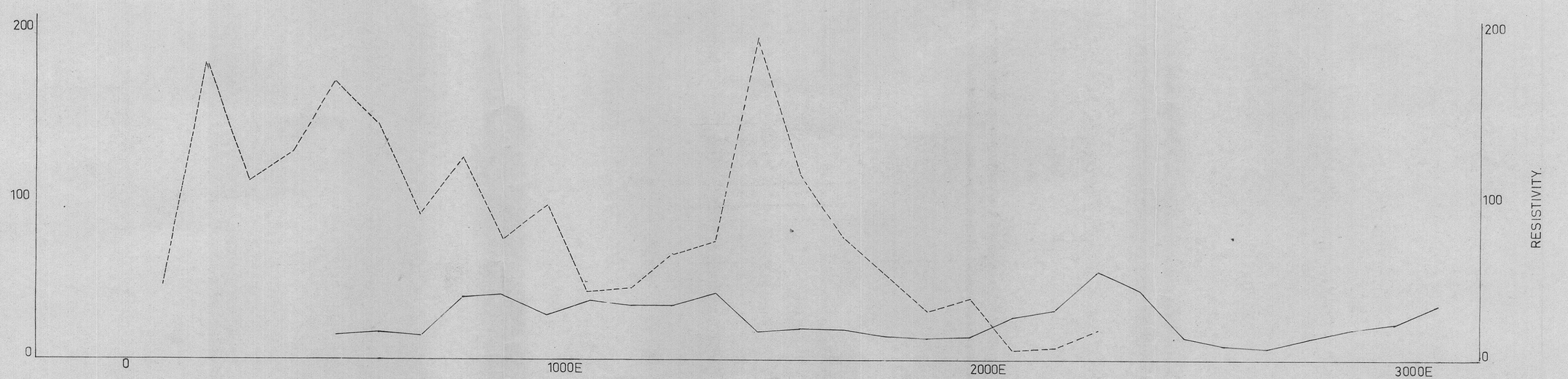
71-78k 1436

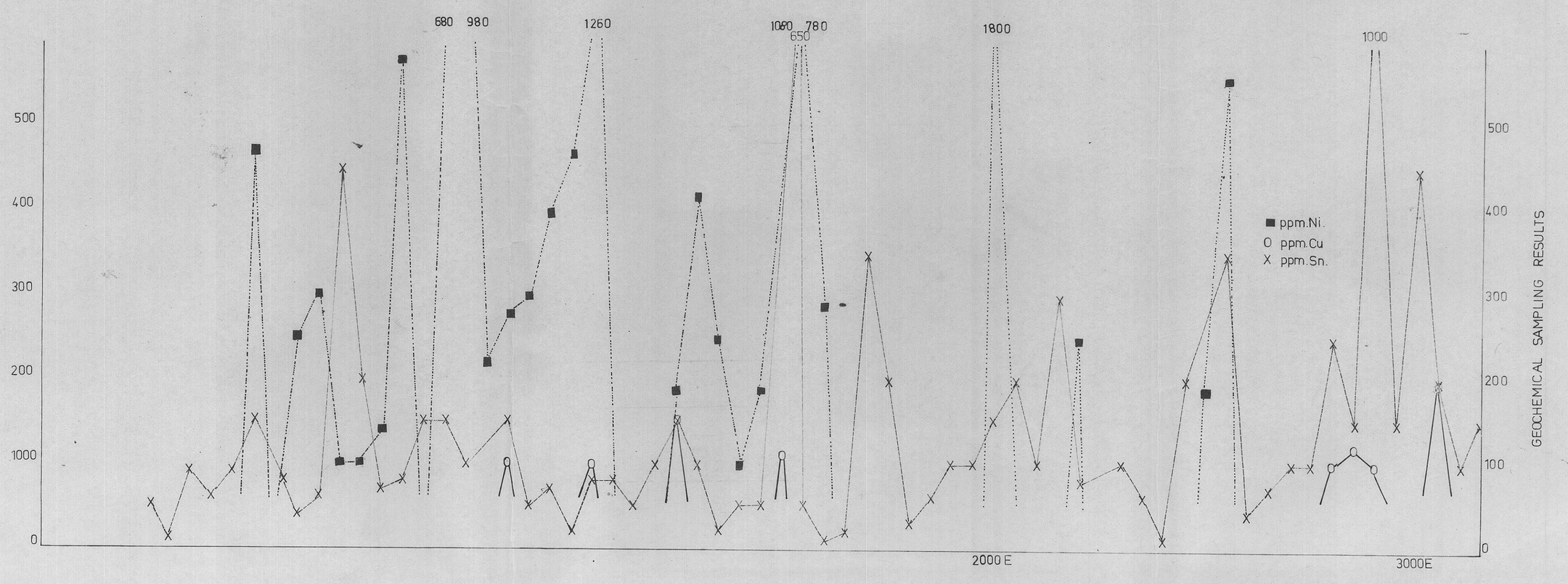
RAZORBACK. ANOMALY. Z1.

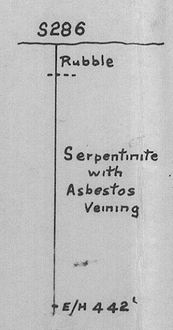
D.D.H:S 286 – LINE 416N, 2300'E, RAZORBACK GRID











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5 cm

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