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PROJECT NAME:

COMSTAFF PROPRIETARY LIMITED

TITLE:

SOCK CREEK

PROSPECT REVIEW

DKSG

MICROFILMED

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PLAN NOS:

TABLE NOS:

APPENDICES:

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AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

SOCK CREEK - PROSPECT REVIEWSUMMARY

The Sock Creek prospect area was developed from an original regional reconnaissance stream sediment sampling programme. Follow up gridding of a lead/zinc stream anomaly in Sock Creek, with geological mapping, soil sampling, and costeaning, indicated the presence of zinc and lead sulphides. Diamond drilling intersected low grade Zn mineralization, associated with quartz veined quartz felspar porphyry and contact sediments. The mineralization is interpreted as being due to late-stage hydrothermal fluids finding a suitable host in a net-vein fractured porphyry.

STREAM GEOCHEMISTRY

Original sampling at 500 feet (150m) interval, and analysis of the -80# fraction for Cu, Pb and Zn indicated weakly anomalous Pb/Zn values in Sock Creek. Follow up sampling at 100 feet (30m) intervals, produced consistent low to middle order anomalies, with a maximum of 440 ppm Pb and 320 ppm Zn, (Plan TAS-2-1283).

SOIL GEOCHEMISTRY

A 500 feet square grid was cut over the area, and "B" horizon samples taken at 50 feet (15m) intervals. Samples were analysed by AAS for Cu, Pb and Zn. A significant zone of anomalous lead and zinc values were present along the west bank of Sock Creek, elongated in a NNE-SSW direction. Other less well-defined, low-order anomalies were present on the grid. (Plan TAS-2-1277).

COSTEANING

A costean was excavated on line 10N across the main part of the geochemical anomaly referred to above. It exposed a series of siltstones, and grey to black shales. A sheared horizon is evident in the costean, associated with brecciation of the shales. Minor amounts of sphalerite and galena were visible in the shales at the eastern end of the costean, and channel sampling confirmed this, with a maximum of 0.42% Pb and 2% Zn. The black shales are very pyritic.

Subsequent costeaning based on a recent metric grid, exposed the shale horizon, and a major fault zone. No data are available for this costean, apparently mapping of the costeans and drafting of the results were never done.

DRILLING

A total of 14 diamond drill holes were completed in the area, based on a recent metric grid, with cross-lines 80m apart. The location of the holes is shown on Plan TAS-2-819, and geological sections of each line drilled are on Plan TAS-2-914 to TAS-2-922. The holes were logged by various geologists attached to the Comstaff project and relogged by Hapwood (1977) in the course of a Brief Assessment of the area.

REGIONAL GEOLOGY

The Sock Creek area is interpreted as occurring within the Cambrian Mt. Read Volcanics. It is unclear whether the subdivision of the Volcanics into the Primrose Pyroclastics and Mt. Block Volcanics can be made in this area.

The geology of the area is essentially a subaqueous sedimentary-volcanic sequence, intruded by massive quartz felspar porphyries, and significantly faulted. Substantial thicknesses of grey and black shales and siltstones are exposed in many areas, particularly along the Murchison Highway, various tracks off the Highway, at DAB grid, and in the Sock Creek grid. These deeper, quiet water sediments are interbedded with sandstones, banded cherts, acid tuffs, and probably acid extrusive rocks.

The overall dip of the rocks is to the west and northwest, with some local folding giving east facings and dips, e.g. at the Que River crossing.

The black shales are very pyritic wherever they are exposed, e.g. Que River crossing, DAB costeans, Sock Creek costeans. But base metal values are only background, e.g. DAB Costean 5120N, Cu 24-50 ppm, Pb 36-56 ppm, and Zn 40-104 ppm, from channel sampling.

It appears that the rocks in the Bulgobac-Sock Creek area belong to the later phase of volcanism that produced the Mt. Read Volcanics, with a change from essentially extrusive, subaqueous and subaerial lavas, and associated pyroclastic rocks, to a sedimentary facies, with lesser amounts of fine pyroclastic material, and a final phase of selective emplacement, possibly fault controlled, of felspar and quartz-felspar porphyries.

DETAILED GEOLOGY

The geology of the gridded area is interpreted from costean and drilling results, and can be subdivided into four units:

1. a series of pyritic black argillites (shales) and grey siltstones,
2. fine grained lithic lapilli crystal tuffs,
3. intrusive porphyry,
4. fault zone.

1. The argillites and siltstones are finely laminated, and often pyritic, (<5%), as fine disseminated pyrite, occasionally segregated into nodules. The argillites often contain small scale soft sediment deformation structures. A fine cleavage is well developed in many places, often at a high angle to the bedding, indicating proximity to a major fold hinge.

These sediments occur in the north west part of the metric grid.

2. The tuffaceous rocks occur on the east side of the fault zone, and consist of altered (sericitised) fine lithic crystal tuffs and volcanoclastic rocks. These rocks are bounded by porphyry, and have an irregular outline in plan
3. The porphyry is essentially an homogeneous mass of quartz felspar porphyry, which gives the impression of different units, but the variation in texture and mineralogy is due to varying alteration effects. The most common style of alteration is silicification, which is particularly common as net-vein fracture filling and as a fine dense matrix alteration in the porphyry.
4. The fault zone trends just east of magnetic north, and has an easterly dip of 50 to 70°. The width of the fault zone varies from about 2m to 20m, and is composed of black shale and porphyry fragments in a clayey matrix. The fault separates the black shales to the west and the tuffs and porphyries to the east.

Net vein fracturing is ubiquitous throughout the area, particularly related to the major north south fault. This hydraulic fracturing has created a series of intersecting fracture planes, which develop a breccia like appearance. Alteration adjacent to these fractures varies in intensity up to complete destruction of the fabric of the rock. Detailed descriptions of the alteration and fracturing are given in Hopwood (1977).

MINERALIZATION

The main economic mineral present at Sock Creek is sphalerite, with minor galena and chalcopyrite. The mineralization is structurally controlled, and forms within a zone of net-vein fracturing developed about the porphyry-sediment contact zone. It is strongly developed within the porphyry near black argillite contacts; and is less well developed within the black argillite at the contact. The mineralization decreases rapidly with distance from the contact, although the net-vein fracturing continues and becomes filled with chlorite quartz and some carbonate. The mineralized fractures are often zoned from yellow, iron-poor, sphalerite in the core, through darker, iron-rich, sphalerite to quartz rich margins.

Hopwood (1977) considered that the quartz felspar porphyry was intruded as an elongate body along the active north-south fault zone, and the net-vein fracturing was caused by rapid boiling of the water in the sediments. The mineralization is a function of this boiling, with the sediments providing the sulphur, the connate waters providing the metals, and the porphyry as the thermal source.

An alternative hypothesis presented here is that the porphyry was intruded prior to the major faulting episodes, although there may have been some structural control of the emplacement. A later tectonic episode produced the major fault zone in the area, and provided a suitable conduit for the weakly mineralized hydrothermal fluids, which precipitated in the net-vein fracturing system, and caused the intense alteration of the porphyry adjacent to the fault zone, particularly at the porphyry-sediment contact.

This style of mineralization may be similar to that at Silver Falls, north of Pinnacles, where galena, with minor sphalerite and chalcopyrite is present in quartz filled fractures in a silicified acid volcanic host rock (Aberfoyle, pers. comm).

CONCLUSIONS AND RECOMMENDATIONS

The exploration programme was carried out in a logical, well-managed, manner, being a classic case of detailed follow-up work on an anomaly discovered during a regional stream sediment sampling programme. The soil sampling programme demonstrated a markedly anomalous zone adjacent to Sock Creek. Costeaming of the anomaly exposed base metal sulphides in a black shale host rock, which was diamond drilled.

The first hole (SKI) intersected sphalerite and galena associated with a quartz vein stockwork in porphyry. Subsequent follow-up costeaming and diamond drilling proved that this style of mineralization was the only one present. No bedded sulphides associated with the shales were intersected, and no massive sulphides were discovered within the porphyry intrusive.

It is concluded that the mineralization does not represent a major prospect, as it only occurs as fracture fill adjacent to a major fault zone. The sulphides are probably of hydrothermal origin, related to the final phase of volcanism in the region.

No further work can be recommended on the project.



D. B. Hall

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162006

LIST OF MAPS

<u>CATEGORY</u>	<u>PLAN NO.</u>	<u>TITLE</u>	<u>SCALE</u>
GEOCHEMISTRY	TAS/2/1283	Regional Geochemistry Ag, Cu, Zn, Pb, Hg	1:10 000
"	TAS/2/1277	Grid Geochemistry Cu, Pb, Zn	1:2 000
LOCATION	TAS/2/819	Prospect Map	1:2 500
DRILLING	TAS/2/914	Section 680N DDH SK7	1:1 000
"	TAS/2/915	Section 760N DDH SK4	1:1 000
"	TAS/2/916	Section 840N, DDH's SK3 and 12	1:1 000
"	TAS/2/917	Section 920N DDH's SK2, 10, 11 and 13	1:1 000
"	TAS/2/918	Section 1000N, DDH's SK1 and 14	1:1 000
"	TAS/2/919	Section 1080N, DDH SK5	1:1 000
"	TAS/2/920	Section 1160N, DDH SK6	1:1 000
"	TAS/2/921	Section 1240N, DDH SK8	1:1 000
"	TAS/2/922	Section 1320N, DDH SK9	1:1 000

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162007

REFERENCES

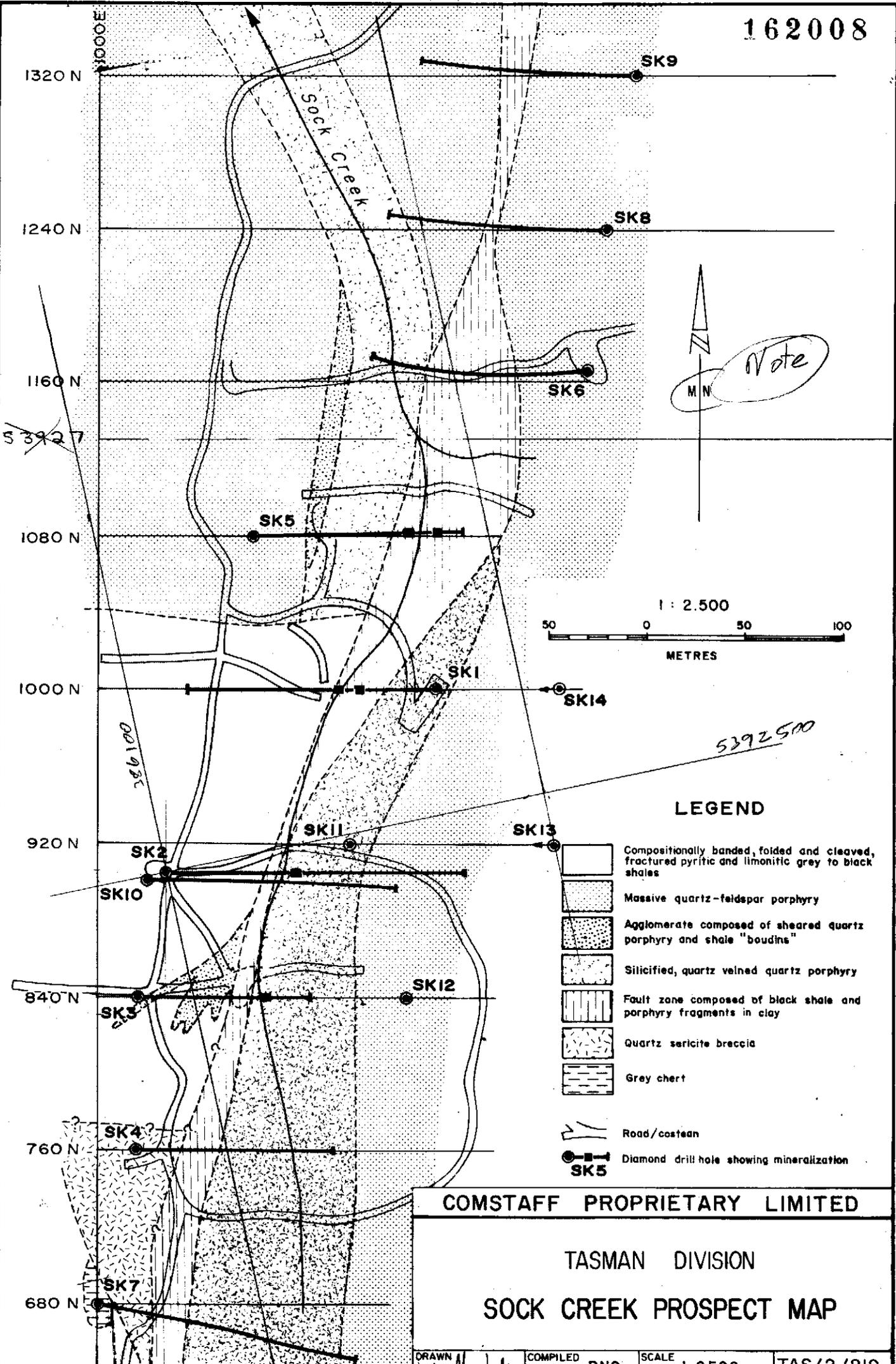
Chisholm, T, 1971, 1971 Winter Field Season Report,
Comstaff Pty. Ltd.

Hopwood, Dr. T, 1977, A Brief Assessment of the Sock Creek
and Chester Pinnacles Prospects.

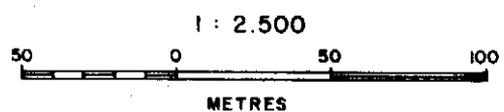
Various, 1974-1976, AAA Document, C 3727, Drill Logs and Assay
Results, Diamond Drill Holes SK-1 to SK-14.

007

162008



Note



LEGEND

- Compositionally banded, folded and cleaved, fractured pyritic and limonitic grey to black shales
- Massive quartz-feldspar porphyry
- Agglomerate composed of sheared quartz porphyry and shale "boudins"
- Silicified, quartz veined quartz porphyry
- Fault zone composed of black shale and porphyry fragments in clay
- Quartz sericite breccia
- Grey chert
- Road/costean
- Diamond drill hole showing mineralization
SK5

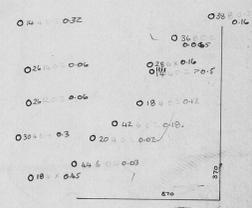
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TASMAN DIVISION

SOCK CREEK PROSPECT MAP



320 117
526605



0 1/4 1/2 3/4 1 MILE
SCALE
± 1:100,000
TAS-2-1283 001
162009

79-1358

TAS-2-1277

UNSURVEYED VERSION.

CONTOUR CUT LINES SHOWN BY THICKER BLACK LINE WITH SAME TAGS AS:  THE LIGHT ONE UNIT

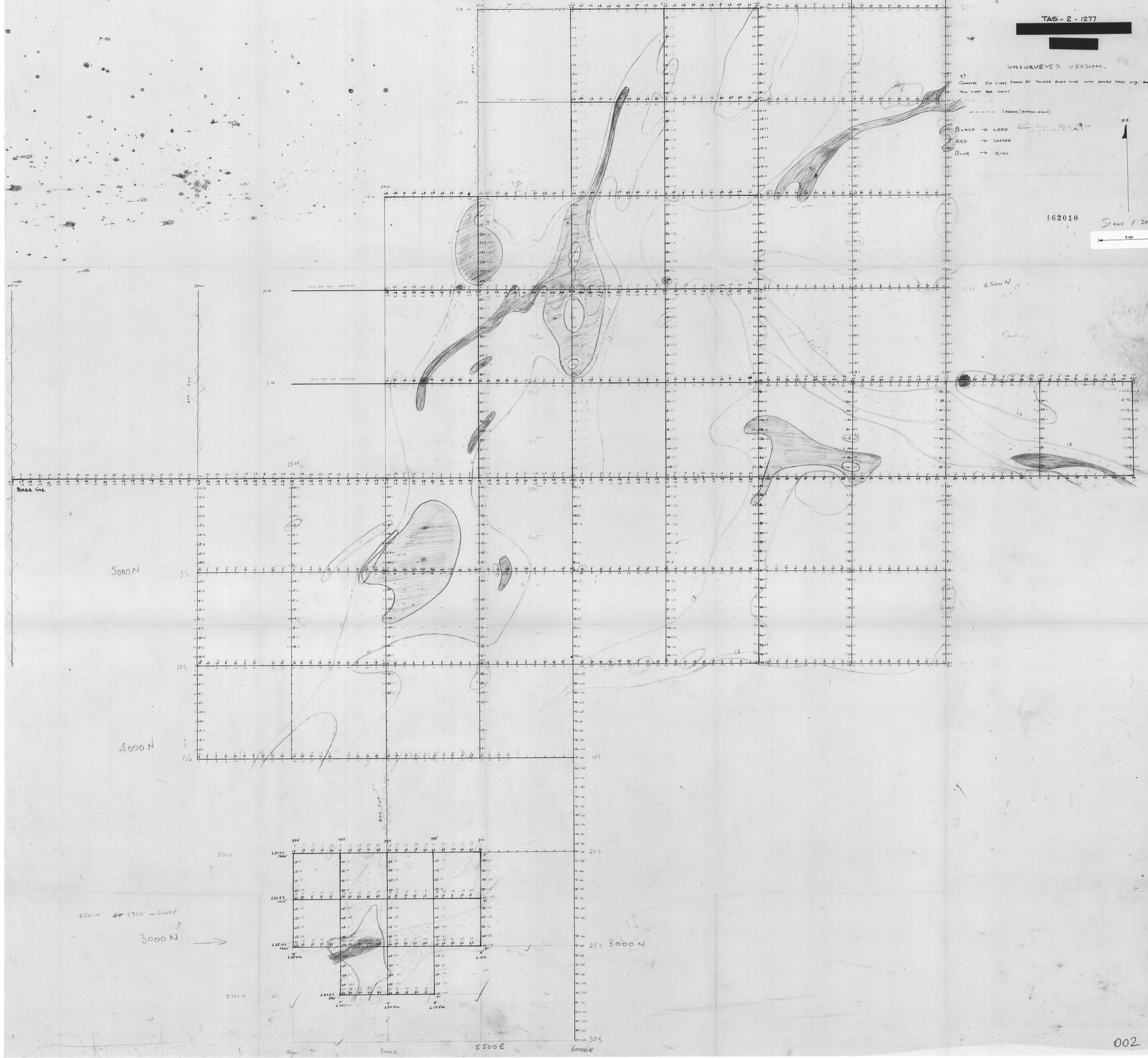
--- CREEKS (APPROX ONLY)

BLACK -> LEAD
RED -> COPPER
BLUE -> ZINC



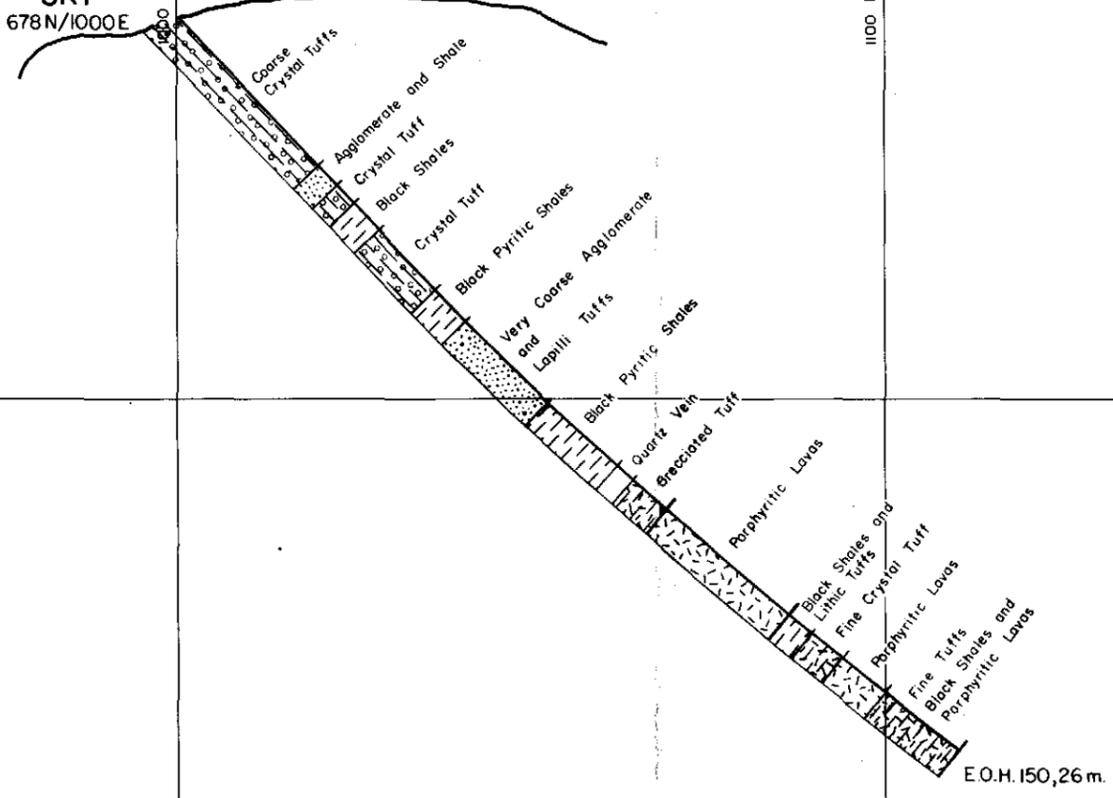
162010

Scale 1:2000

SK7
678 N/1000 E

553.90 R.L.



500.00m R.L.

162011

79-1358

	Non-Porphyrific Lavas		Shales	Mineralisation
	Porphyritic Lavas			
	Agglomerate			
	Bedded Tuff			
	Lapilli Tuff			
	Crystal Tuff			

5 cm

REVISIONS			
By	Description	Date	Drawn

COMSTAFF PROPRIETARY LIMITED

SOCK CREEK PROSPECT

SECTION 680 N

D.D.H. SK7 003

DRAWN NOV '76	O.A.S.	COMPILED G.F.P.	SCALE 1:1000	TAS/2/914
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1000 E

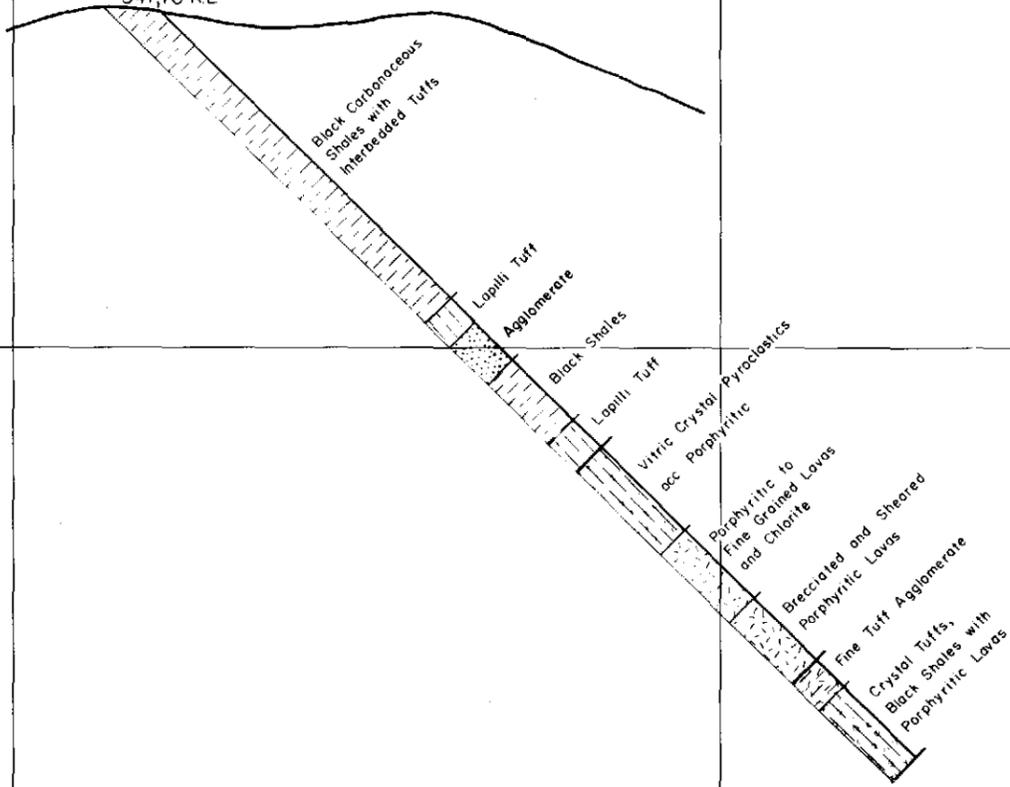
SK4

760N/1021 E
547,70 R.L.

1100 E

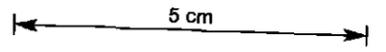
1200 E

500,00m R.L.



E.O.H. 149,05 m.

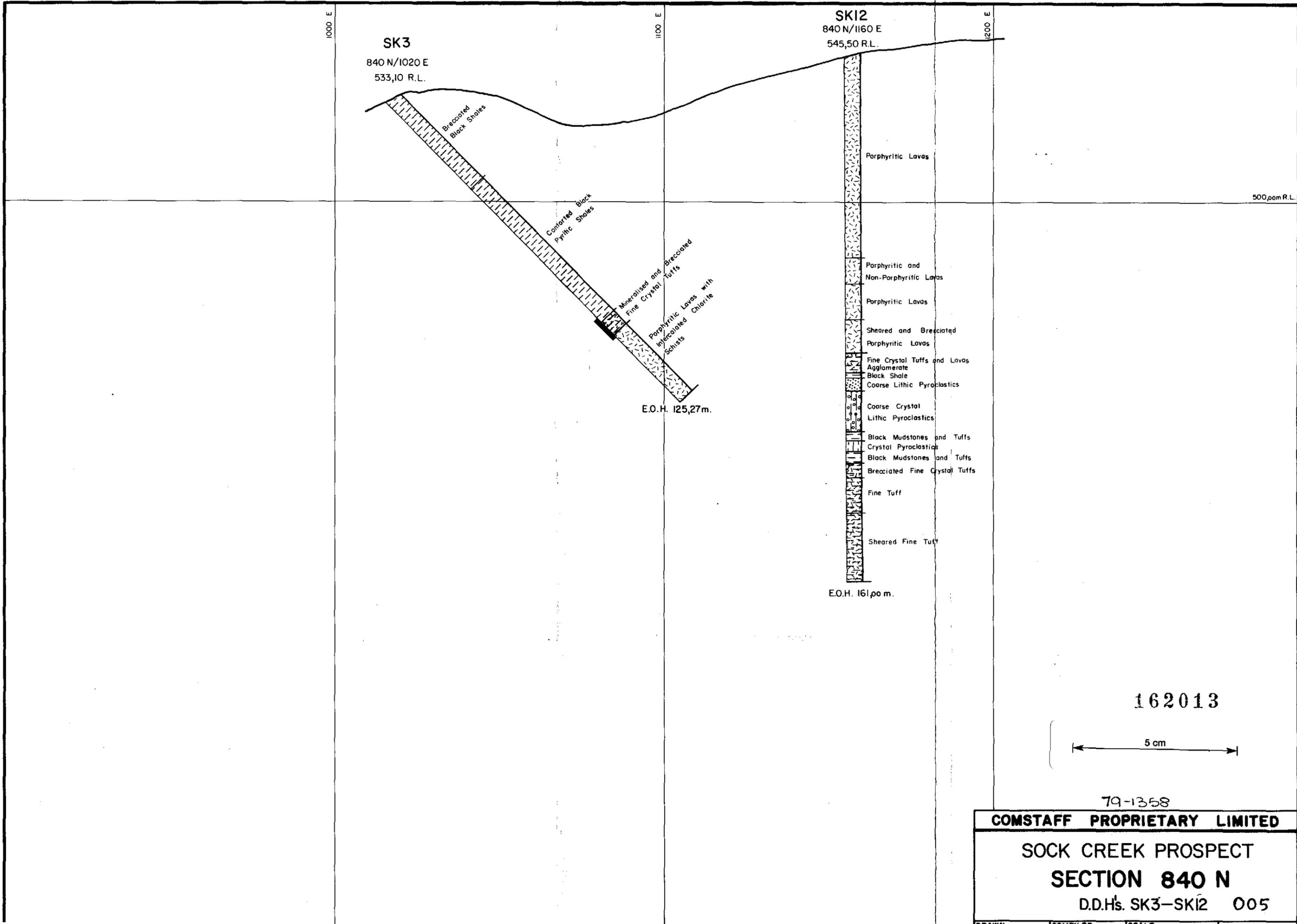
102012



79-1358

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SOCK CREEK PROSPECT
SECTION 760 N
 D.D.H. SK4 004



SK3
840 N/1020 E
533,10 R.L.

SK12
840 N/1160 E
545,50 R.L.

Brecciated
Black Shales

Concreted Black
Pyritic Shales

Mineralised and Brecciated
Fine Crystal Tuffs

Porphyritic Lavas with
Intercalated Chlorite
Schists

E.O.H. 125,27m.

Porphyritic Lavas

Porphyritic and
Non-Porphyritic Lavas

Porphyritic Lavas

Sheared and Brecciated
Porphyritic Lavas

Fine Crystal Tuffs and Lavas
Agglomerate

Black Shale

Coarse Lithic Pyroclastics

Coarse Crystal
Lithic Pyroclastics

Black Mudstones and Tuffs
Crystal Pyroclastics

Black Mudstones and Tuffs

Brecciated Fine Crystal Tuffs

Fine Tuff

Sheared Fine Tuff

E.O.H. 161,00 m.

500,00m R.L.

162013

5 cm

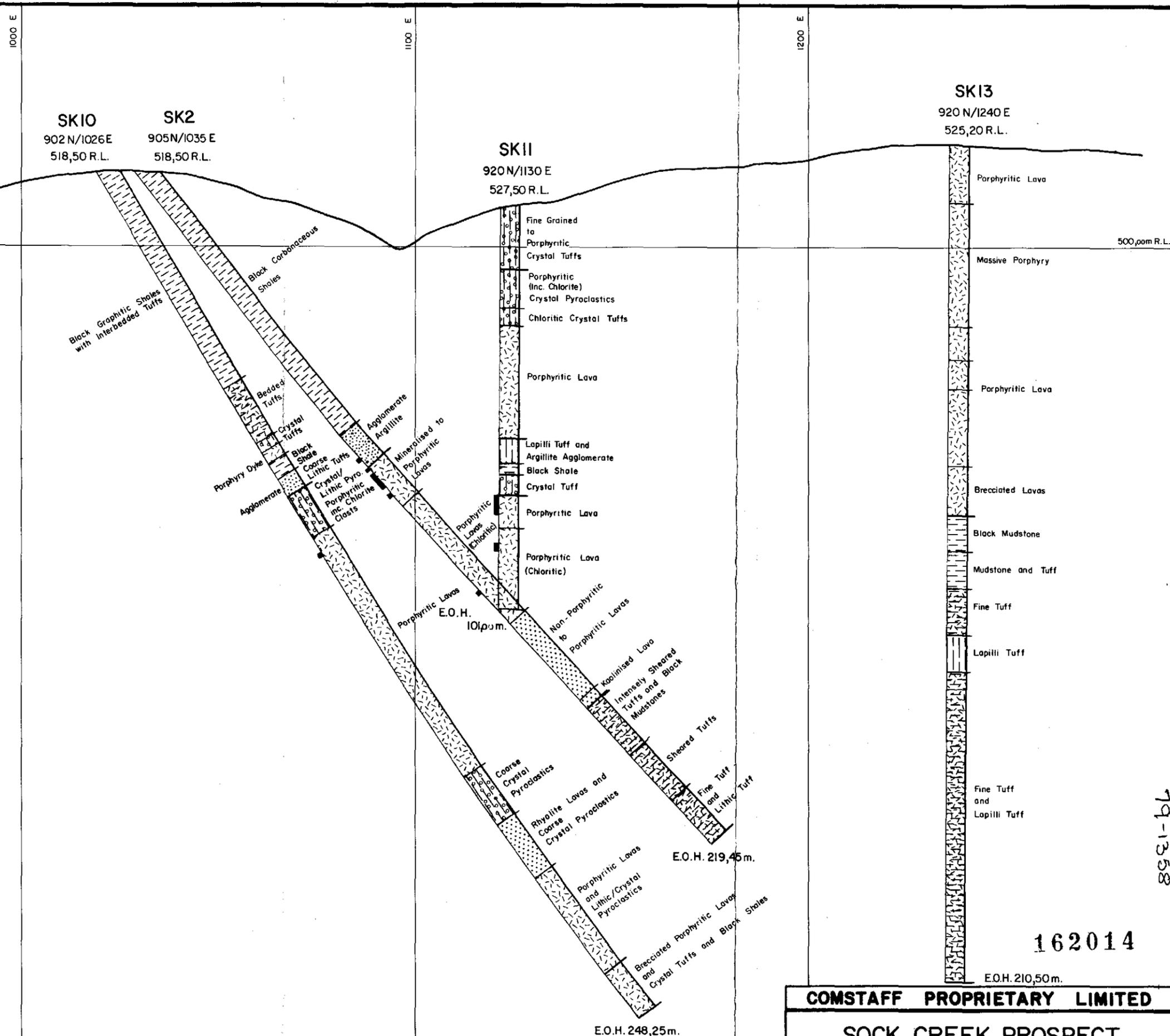
79-1358

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SOCK CREEK PROSPECT

SECTION 840 N

D.D.H's. SK3-SK12 005



79-1358

162014

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SOCK CREEK PROSPECT			
SECTION 920 N 006			
D.D.H's. SK2-SK10- SK11 and SK13			
DRAWN NOV '76	O.A.S.	COMPILED G.F.P.	SCALE 1: 1000
			TAS/2/917

1000 E

1100 E

1200 E

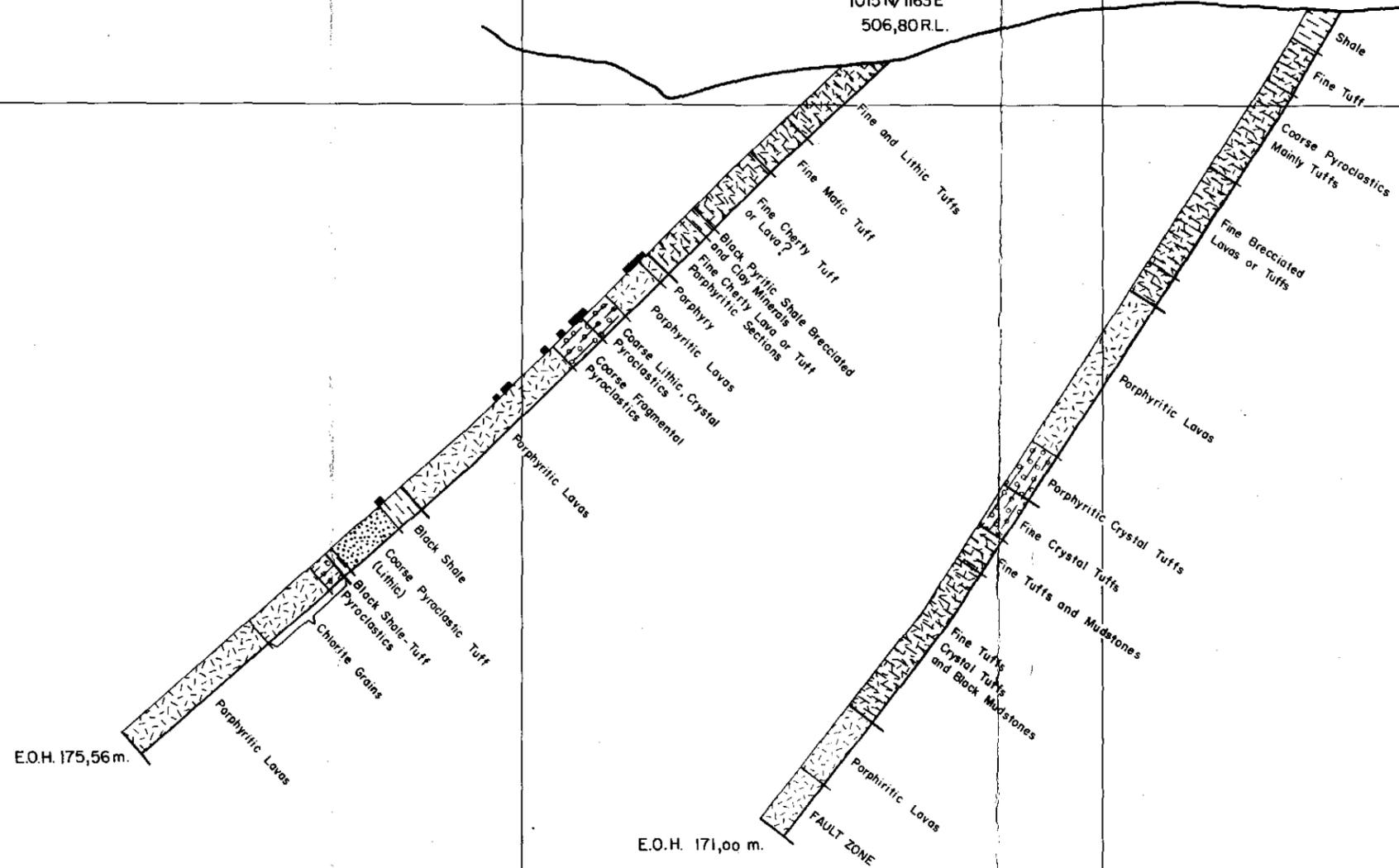
SKI
1015 N/1163 E
506,80 R.L.

SKI4
1000 N/1240 E
511,20 R.L.

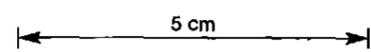
500,00m R.L.

E.O.H. 175,56m.

E.O.H. 171,00 m.



162015



79-1358

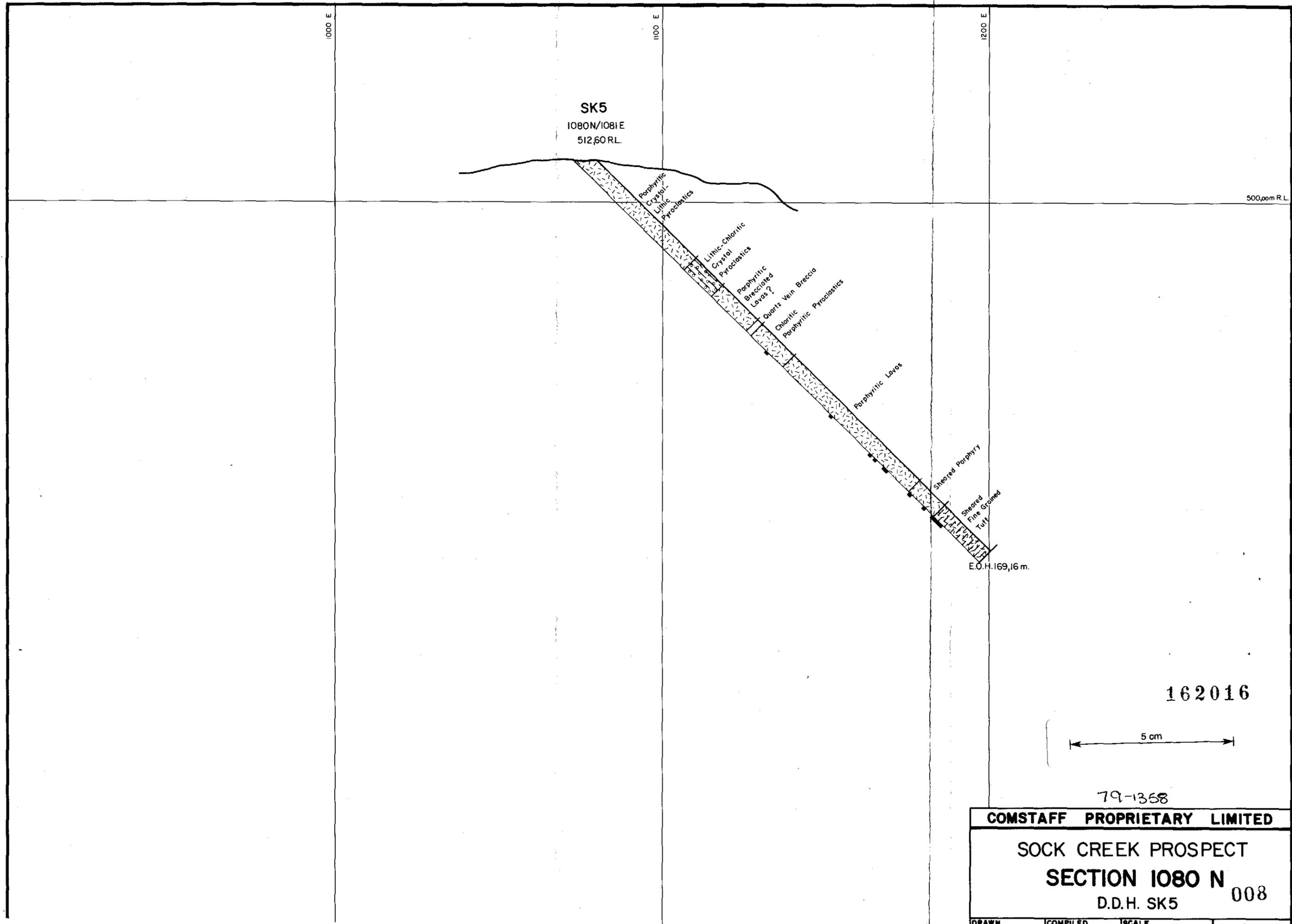
COMSTAFF PROPRIETARY LIMITED

SOCK CREEK PROSPECT

SECTION 1000 N

D.D.H's SKI-SKI4

007



SK5
1080N/1081E
512.60 R.L.

500.00m R.L.

E.O.H. 169.16 m.

162016

5 cm

79-1358

COMSTAFF PROPRIETARY LIMITED
SOCK CREEK PROSPECT
SECTION 1080 N
D.D.H. SK5 008

DRAWN NOV 76 O.A.S. COMPILED G.F.P. SCALE 1:1000 TAS/2/919

1000 E

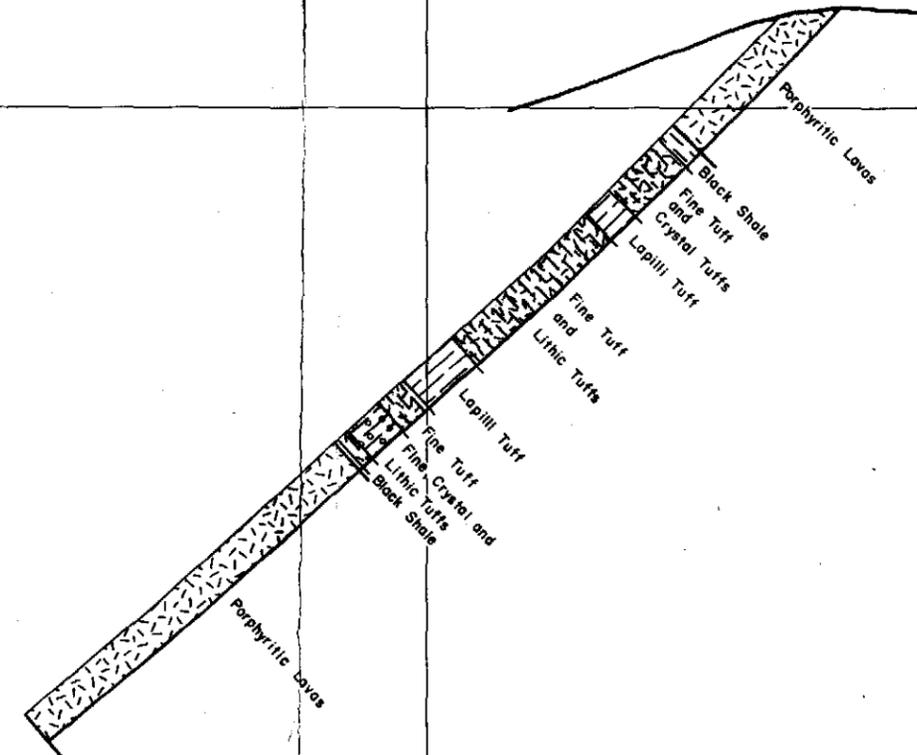
1100 E

1200 E

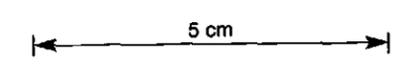
SK6
1164 N / 1259 E
513,70 R.L.

500,00m R.L.

E.O.H. 150,00 m.



162017



79-1358°

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SOCK CREEK PROSPECT
SECTION 1160 N
D.D.H. SK6 009

DRAWN NOV '76 OAS COMPILED GFP SCALE 1:1000 TAS/2/920

1000 E

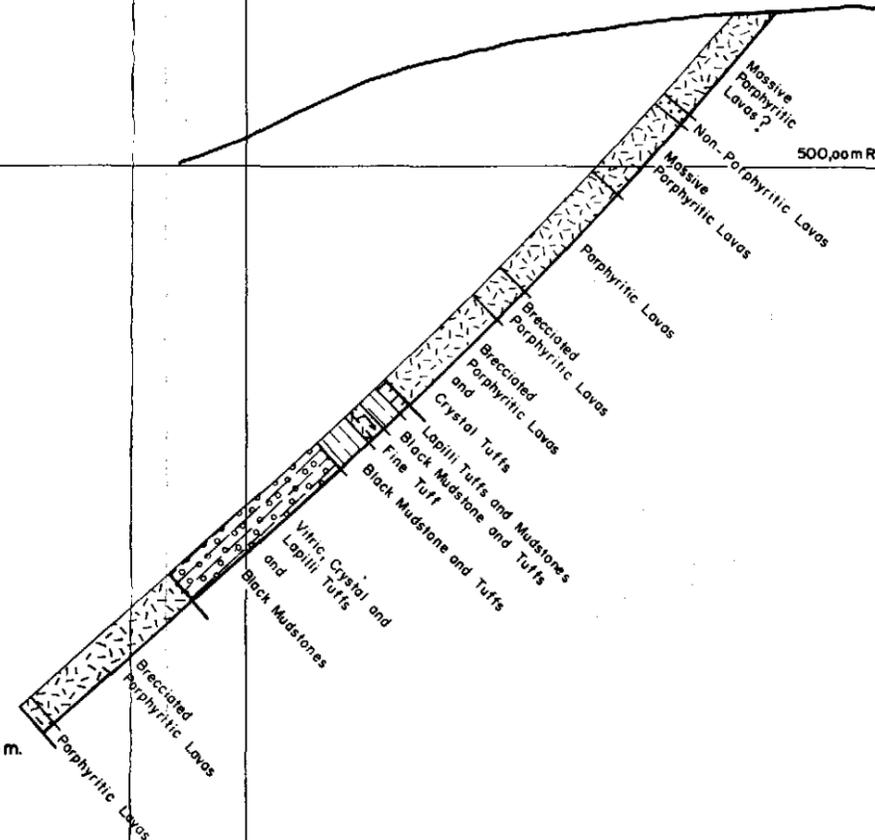
1100 E

1200 E

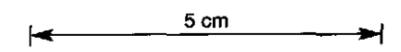
SK9
1320 N / 1277 E
521,80 R.L.

500,00m R.L.

E.Q.H. 146,00m.



162019



79-1358

COMSTAFF PROPRIETARY LIMITED

SOCK CREEK PROSPECT
SECTION 1320 N
D.D.H. SK9 011

DRAWN NOV '76	O.A.S.	COMPILED G.F.P.	SCALE 1:1000	TAS/2/922
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