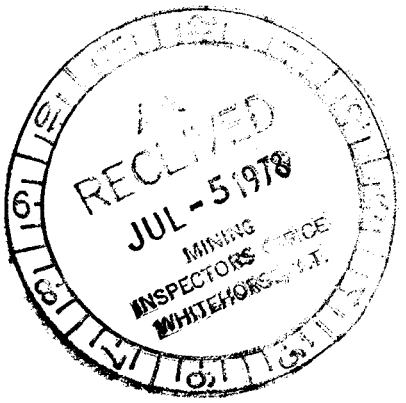
WELCOME NORTH MINES LTD. (N.P.L.)
1027-470 Granville St., Vancouver, B.C. V6C 1V5 Telephone (604) 687-1658

REPORT ON

A GEOLOGICAL, GEOCHEMICAL AND TRENCHING PROGRAMME

ON THE ANGIE MINERAL CLAIMS



WATSON LAKE MINING DISTRICT

YUKON TERRITORY

N.T.S. 105F-15, 105F-16

Latitude 61°50'N Longitude 132°30'W

Work Performed June to October, 1977

Vancouver, B.C.
May 5, 1978

Graham H. Scott

090337

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FIGURES

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INTRODUCTION

In June, 1977 Welcome North Mines Ltd., under the Woodside Joint Venture with Getty Mining Pacific Ltd., staked 320 mineral claims in the ANGIE group in Watson Lake Mining District. The claims were staked over outcroppings of zinc-silver mineralization located by Welcome North prospectors.

Later in the season a picket line grid was established over the ANGIE showing, and geological and geochemical surveys were carried out together with some hand trenching. This report summarizes the work completed during the 1977 field season and outlines the planned future work.

MINERAL CLAIMS

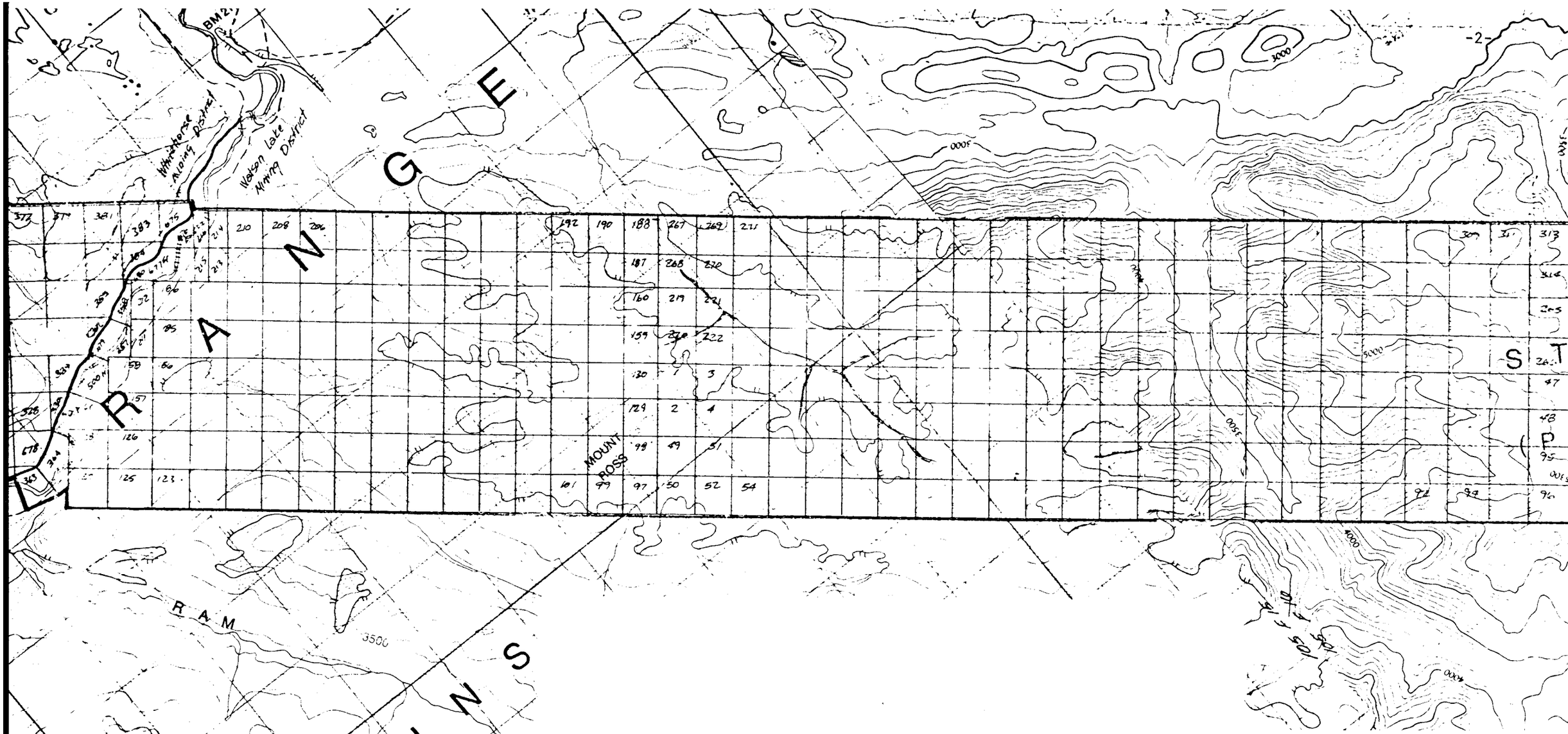
The ANGIE Group comprises 320 mineral claims as below:

CLAIM	RECORD NUMBER	RECORDING DATE
ANGIE 1-216	YA20427-YA20642	June 29, 1977
219-314	YA20643-YA20738	June 29, 1977
357,358	YA20739-YA20740	June 29, 1977
363,364	YA20741-YA20742	June 29, 1977
500,501	YA20743-YA20744	June 29, 1977
676,677	YA20745-YA20746	June 29, 1977

The claims are located on claim maps 105F-15, and 105F-16 (Fig. 1).

LOCATION AND ACCESS

The ANGIE Group is located approximately ten air miles southwest of Ross River in the front ran ge of the St. Cyr Range. The Lapie River and the South Canol Road lie along the northwestern boundary of the claim block (Fig. 2).



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GETTY MINING PACIFIC LTD

ANGIE CLAIMS
WATSON LAKE M.D.
[claims 217, 218 not used]

Scale: 1:50 000	Date: JNE 1 78	NTS 105F/15,16
Revised:	By: GHS	Fig. 1

VANGORDA PROJECT AREA

WOODSIDE PROJECT AREA

Irene
Bev
Eva
Mabel
Alice
Anvil
Wynne
Raz
Dot
Ruth
Grum
Vangorda
Rachel
Dy
Mn
Swim
SB
Sea
Jackie
Linda
Tar
Dev
Wet
Mag
Lou
May
Sir J.A.
Wayne
Sunset
Piglet
P M J Trend
G.K.
ANGIE ST. Trend
Pim
Angie
CYR
RANGE
PELLY RIVER
DRURY LAKE
ROBERT CAMPBELL HIGHWAY
LITTLE SALMON LAKE
MAGUNDY RIVER
FARO
CANOL ROAD
ROSS RIVER
LAPIE RIVER

134°30' 134°00' 133°30' 133°00' 132°30' 132°00' 131°30'
62°30' 62°15' 62°00' 61°45' 61°30'
L8 K5 K6 K7 J4
L1 K4 K3 K2 K1
F13 F14 F15 F16 G13
F12 F11 F10 F9 G12

LEGEND

- Massive Sulphide Deposit ★
- Mineral Occurrence ●
- River, Creek
- Highway
- Claims:
  - Getty Mining Pacific – Welcome North Mines
  - Cyprus Anvil Mining [1]
  - Du Pont of Canada [2]
  - Utah Mines [3]
  - Cominco [4]
  - Amax Potash [5]
  - Kerr Addison Mines [6]
  - St. Joseph Exploration [7]
  - Brendex Resources [8]
  - Misc. Other

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PROJECT AREA & PROPERTY LOCATIONS

Scale: 1" : 8 miles	Date: Feb. 1978	N.T.S. 105
Revised:	By:	Fig. 2

RECOMMENDATIONS

Based on the results obtained from exploration carried out on the ANGIE Grid in 1977, the following programme is proposed:

a) Linecutting to extend the ANGIE Grid in preparation for further geochemical surveys and detailed geological mapping;

b) 28 line miles soil sampling surveys on the above-mentioned grid on 400-foot line spacing and 100-foot station intervals to be conducted for the purpose of closing off the limits of presently defined and 'open' zinc and silver geochemical anomalies;

c) 20 line miles of soil sampling on a 200 by 800 foot grid over the Pyrite showing and its along-strike projections;

d) geological mapping of new and proposed grid areas to specifically define the position of the ANGIE host unit;

e) geological mapping and prospecting of areas outside the grid areas in order to define the exact boundaries of SDsq, and to establish the presence of the shale limestone mineral host elsewhere in the unit, and to determine the geological relationship of the Pyrite showing to the ANGIE showing;

f) hand trenching of the Pyrite showing and continued trenching of the ANGIE showing in order to expose mineralized bedrock so that:

   i) at the Pyrite showing the presence of any lead or zinc mineralization can be established;

   ii) at the ANGIE showing the present exposures of mineralization can be extended along strike and an exact thickness established;

g) sampling and assaying will be dictated by results of trenching at both the Pyrite showing and the ANGIE showing.

PREVIOUS WORK

The first recorded work in the area of the ANGIE Grid was in May, 1928 when local prospectors staked claims to cover gold and copper mineralization in small quartz veins near the Lapie River immediately northwest of Mt. Ross. Work done by the Geological Survey of Canada in 1944 located several other similar occurrences in the area, as well as a lead-silver bearing quartz vein cutting shales exposed in the Lapie River.

In 1974 Archer, Cathro and Associates conducted a follow-up prospecting program around Mt. Ross as a result of anomalous zinc values obtained in regional stream sediment sampling surveys. The source of the zinc anomaly was not found.

GEOLOGY

General

The rocks underlying the ANGIE claim group are part of a thick northwest-trending sequence of shales, limestones, siltstones and argillites which was deposited along the margins of the Pelly-Cassiar Platform, a major carbonate shelf during Cambrian to Devonian time. Overlying these platformal rocks are cherts, argillites, limestones and shales of Upper Devonian to Upper Triassic age.

Detailed geological mapping of the ANGIE grid has distinguished six major units:

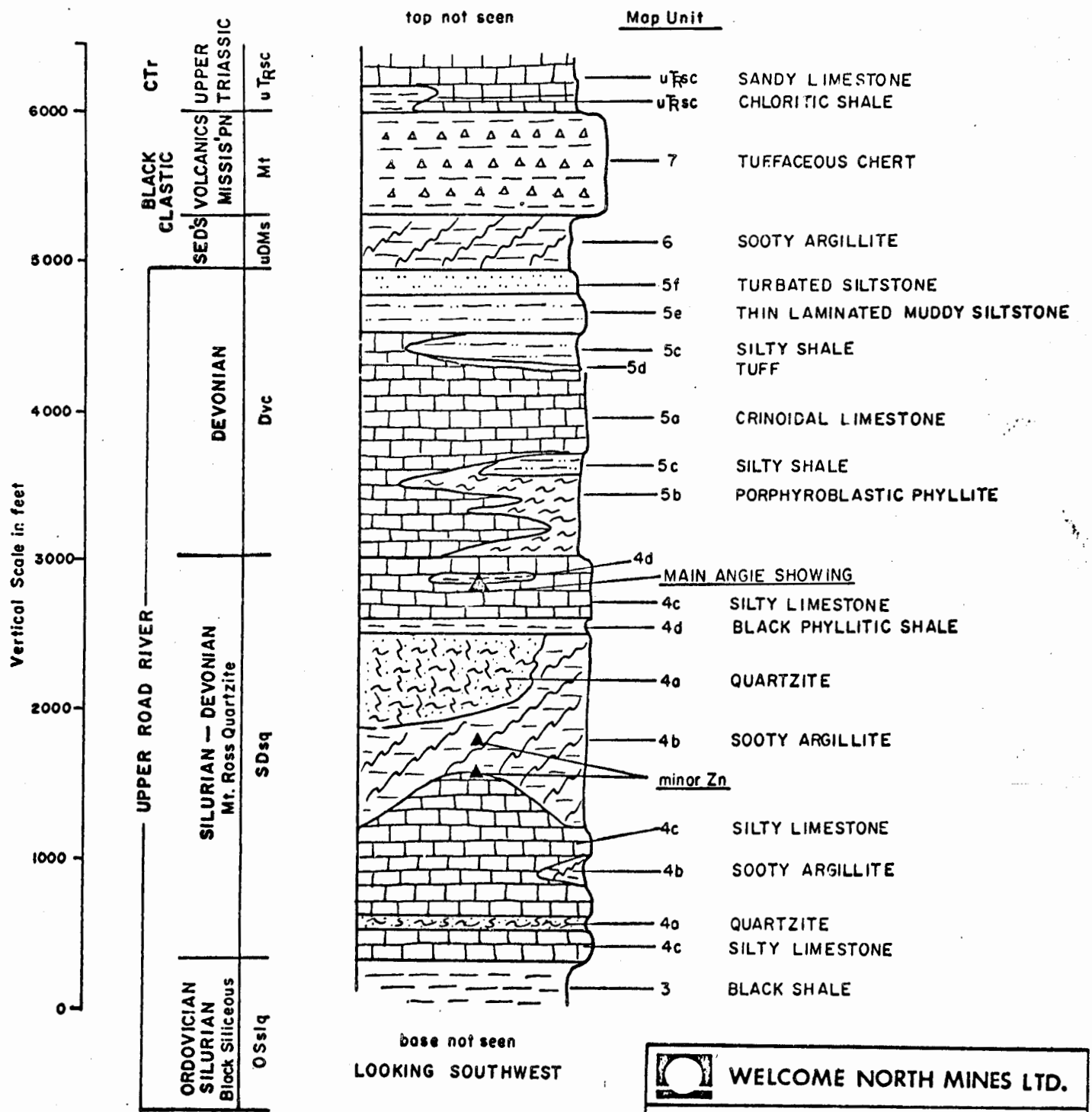
uTrsc	-	limestone
Mt	-	chert
uDMs	-	shale
Dvc	-	limestone, siltstone, tuff, shale
SDsq	-	quartzite, limestone, shale
OSslq	-	shale and phyllite

Where possible these units were further subdivided according to lithologies as shown in the detailed stratigraphic column of the ANGIE grid, Fig. 3. Plate 1 shows the distribution of lithologies on the grid and Fig. 4 illustrates a geological cross-section as located on that plate. For geology in the areas immediately surrounding the grid, refer to Fig. 5.

Stratigraphy

a) Ordovician-Silurian (OSslq - Unit 3) Black Siliceous

The Black Siliceous unit, named for its siliceous content, is composed of black weathering, strongly fissile, graphitic, siliceous and pyritic shales, slates and phyllites. These rocks occur as a thick band to the northeast of the ANGIE grid area, intersecting the grid in the northeast



NOTE: THIS STRATIGRAPHIC COLUMN SHOWS THE VARIATION IN LITHOLOGY AND THICKNESS WITHIN THE VARIOUS UNITS ACROSS THE ANGIE GRID AREA. NO HORIZONTAL SCALE IS IMPLIED.

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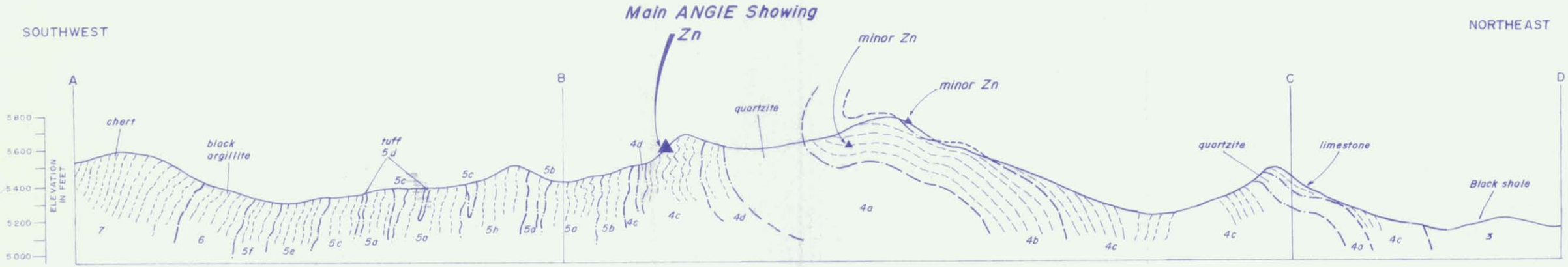
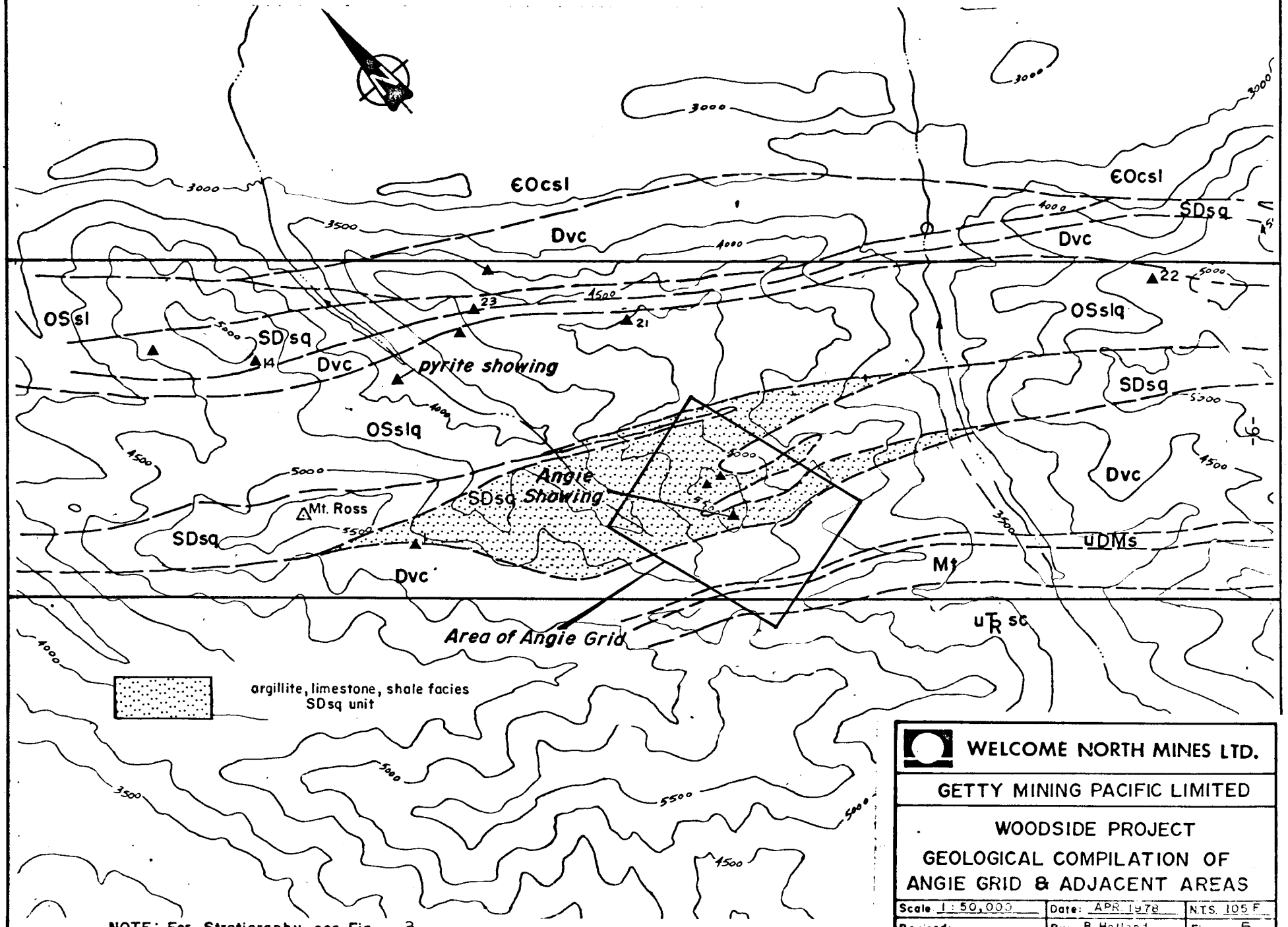
WOODSIDE PROJECT
ANGIE TREND: ANGIE GRID
DETAILED STRATIGRAPHIC COLUMN

Scale: 1" = 1000' Vert.	Date: APRIL 1978	NTS. 105 F/15
Revised:	By: B. Holland	Fig. 3



Note: See Plate 1 for location and legend

WELCOME NORTH MINES LTD.	
GETTY MINING PACIFIC LTD.	
WOODSIDE PROJECT ANGIE TREND: ANGIE GRID CROSS SECTION A B C D	
Scale: 1" = 500'	Date: APR 1978
Revised:	By: B. Holland
NTS 105 F/G	Fig 4



NOTE: For Stratigraphy, see Fig. 3

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WOODSIDE PROJECT

GEOLOGICAL COMPILATION OF

ANGIE GRID & ADJACENT AREAS

Scale 1 : 50,000	Date: APR 1978	N.T.S. 105 F
Revised:	By: B. Holland	Fig. 5

corner. Fig. 5 shows the location of the band with respect to the ANGIE grid.

b) Silurian-Devonian (SDsq - Unit 4) Mt. Ross Quartzite

SDsq conformably overlies OSslq and is estimated to be approximately 3000 feet thick, however some of this thickness may be due in part to structural repetition. Within the grid area SDsq is composed of four interbedded lithologic units - quartzite, sooty argillite, silty limestone , and shale. Each of these lithologies is described in more detail below.

Sub-unit 4a: Quartzite

The quartzite, composed of quartz grains in a calcareous matrix, is fine to medium grained and weathers to a distinctive reddish orange. Within the grid area it forms two bands, 80 and 450 feet thick respectively. The thicker, more southerly main band appears to shale out to the northwest in the vicinity of grid coordinates 40+00N, 8+00W (Plate 1). At this point the quartzite contains abundant thin interbeds of sooty argillite and grades into intermixed seqeucnes of argillite, shale and limestone.

Sub-unit 4b: Sooty Argillite

Sub-unit 4b is composed mainly of fine-grained, non-calcareous sooty black argillite with faint but well developed thin laminations. In places the argillite grades into a distinctly laminated, silty non-sooty, weakly calcareous phase which contains pods and beds of quartz-veined limestone.

The argillite unit is variable in thickness, being restricted to a section of SDsq bounded by the quartzite bands. The silty phase of the argillite is most commonly found stratigraphically just below the main quartzite horizon, where it is interbedded and interfingered with argillite, and limestones of sub-unit 4c. Minor amounts of zinc have been found on this horizon.

Sub-unit 4c: Silty Limestone

The most common lithology within SDsq is a light grey to buff weathering, fine-grained, dark grey to black silty limestone. This rock is poorly fissile, and massive to locally thin laminated. Pods of grey, quartz-veined limestone, similar to those found within the silty phases of sub-unit 4b are also found in this unit.

Sub-unit 4c occurs throughout the SDsq, forming resistant ridges and knobs which are commonly shrouded with talus cover. Contacts with adjacent lithologies are usually sharp and conformable except those with the silty argillite phase which is locally gradational. Significant zinc mineralization, to be discussed in following sections, was found within the upper 400 feet of sub-unit 4c.

Sub-unit 4d: Shales

Unit 4d consists of strongly fissile, recessively weathering, non-calcareous black shales and phyllitic shales which in places are thinly interlaminated with limestone. The shales near the top of SDsq, above the main quartzite horizon, are interbedded with silty limestones of sub-unit 4c.

Shales were found in one location to be on apparent line of strike with the quartzite horizon (ANGIE Grid 42+00N, 9+00W, Plate 1). Overburden and the locally complex structure largely mask the relationship, however it is suggested that the shale may be within a displaced fault block.

c) Devonian (Dvc - Unit 5)

Conformably overlying SDsq is approximately 2000 feet of calcareous Devonian rock sequences comprised of seven lithologic memebrs which include limestones, shales, siltstones, and minor tuffs. Numerous small pods of massive grey, siliceous limestone similar to those found in SDsq also occur throughout the sequence. These lithologies are discussed in more detail in the following sections.

Sub-unit 5a: Limestone

The most prominent unit in Dvc is a grey to buff weathering, massive to faintly laminated, dark grey silty limestone and calcareous siltstone. This sub-unit is readily distinguished by the abundant pods of coarsely crystallized limestone and crinoidal limestone.

Also included in sub-unit 5a is a rusty weathering, strongly fissile, thin laminated, grey calcareous siltstone which appears to be restricted to the lower 400 feet of the Devonian. No crinoids or recrystallized limestone were noted in this section.

Sub-unit 5b: Phyllite

Interbedded with the limestone in the lower half of the Devonian is a strongly fissile, silvery grey to black weathering, grey to black phyllite distinguished by well developed rusted euhedral porphyroblasts up to 3/8 inch in size. These porphyroblasts, which as yet have not been identified, are equant and rounded in shape and can form up to 10 percent of the rock mass. Associated with the phyllite is a similar but non-porphyroblastic black phyllitic shale. This rock is similar to the black phyllitic shale of sub-unit 4d.

Sub-unit 5c: Silty Shale

Sub-unit 5c consists of fissile, fine-grained, weakly calcareous, dark grey silty shale which occurs interbedded with sub-unit 5a limestone throughout most of Dvc. The appearance of the shale, both in fresh and in weathered surfaces, is often very similar to limestone and may represent carbonate-poor phases of that rock.

Sub-unit 5d: Tuffaceous Siltstone

Sub-unit 5d consists of two thin bands or lenses of fissile, rusty weathering, calcareous siltstone which contain abundant small rounded green clasts (volcanic fragments?), larger silty clasts, and fine disseminated rusty specks, probably pseudomorphs of pyrite. This rock tends to be slightly dolomitic. Reported within this member is a pink weathering flaky white tuff containing green clasts.

Sub-unit 5e: Thin Laminated Muddy Siltstone

The upper 400 feet of Dvc contain almost no limestone and appears to represent the close of the platformal environment of this sequence. The lower 250 feet of the 400-foot section is comprised of fine-grained, finely laminated, weakly calcareous muddy siltstone (sub-unit 5e). This rock is buff to grey weathering, strongly fissile, and often rusty along laminations. The laminations are generally less than 1 mm thick (often less than 1/10 mm thick) and consist of alternating bands of dark grey mudstone and lighter grey siltstone.

Sub-unit 5f: Siltstone

Conformably overlying sub-unit 5e is 150 feet of brownish weathering non-calcareous, bluish-grey siltstone. This rock where observed is strongly turbated and contains very fine dark grey hair-like wisps of what appears to be mudstone interstitial to the disrupted fragments. These mudstone wisps give the rock a poor but distinct cleavage and lamination. Minor amounts of black chert were noted along the contact between sub-units 5e and 5f.

d) Upper Devonian-Mississippian (uDMs - Unit 6) Sooty Argillite

uDMs is represented by 300 feet of rusty black weathering, fine-grained, sooty black argillite, very similar to that described in sub-unit 4b. Associated with this argillite are minor amounts of black chert.

e) Mississippian (Mt - Unit 7) Tuffaceous Chert

Mt consists mainly of rusty brown to pale greenish weathering flakey, pale green-grey tuffaceous chert which forms a resistant ridge across the southwest corner of the grid. Also included in Mt is a dark green, poorly fissile chert which occurs locally throughout the unit. Bedding within the Mississippian rocks is generally indistinct, but where visible it seems to parallel a well developed, steeply dipping, wavy cleavage. The undulations of this cleavage are on a scale of inches to feet, occasionally tightening into minor folds. A second cleavage, probably an axial plane cleavage, is also locally developed. A total thickness of 500 feet is estimated for this unit.

f) Upper Triassic (uTrsc) Limestone

uTrsc is predominantly a massive, dark grey, fine to medium-grained sandy and bioclastic limestone, cut by abundant thin quartz stringers. Within the lower section of uTrsc, interfingered with the limestone, is a fissile, rusty black weathering, greenish black chloritic shale. The thickness of the shaley member is less than 300 feet. The top of the Upper Triassic was not observed.

Structure

Rocks in the vicinity of the ANGIE grid have undergone at least two

generations of deformation. Complex structures, internal deformation and rapid facies changes have to date made mapping and interpretation of fold structures a difficult task.

First generation folding occurs about northwesterly-trending axes and generally dip uniformly to the southwest (Fig. 4). Brittle Mt cherts and more ductile Dvc carbonates have undergone intense kink folding (fold amplitudes of several feet).

SDsq is severly deformed by first generation deformation. The main quartzite horizon of SDsq outlines an overturned (to the southwest) antiform which places older SDsq limestone and argillite over the younger, above mentioned SDsq quartzite horizon. Internal deformation within the SDsq limestones and shales enveloping the more competent quartzite accounts for markedly inconsistent bedding attitudes and abundant parasitic folds recognized in strongly laminated phases of these incompetent rocks.

Second generation folding occurs about northeasterly-trending axes creating a "porpoising effect" in first generation fold axes such that plunges of these F_1 axes vary from 25°/NW to 25°/SE.

No major faults have yet been recognized within the limits of the ANGIE grid, however major strike-slip and dip-slip faults, the Tintina and St. Cyr Faults occur northeast and southwest of the grid area. Minor faults were located on the grid near 42+00N, 10+00W (Plate 1) but are presumed to be only local features.

MINERALIZATION

General

Significant zinc-silver mineralization (ANGIE showing) occurs on the

ANGIE grid near the top of SDsq in a limestone-shale facies (Fig. 6). Two other minor zinc occurrences were discovered lower in SDsq but are not considered important. Outside the grid area ten mineral occurrences have been located in Dvc, SDsq, and OSslq (Fig. 5). Of those examined only one, the Pyrite showing, appears to be of importance, and is described below along with those showings located in the grid area.

ANGIE Showing

Sphalerite and native silver mineralization occur in silty limestones and calcareous siltstones of sub-unit 4c near the top of SDsq at the ANGIE showing. The siltstone is often sooty weathering with abundant graphitic slips and varies in carbonate content. Petrographic work by Brereton, 1978[1] indicates the host rock to be "... a finely clastic aggregate of interlocking ... quartz grains and similar sized carbonate (calcite) euhedra in a matrix of very fine cherty silica and finely disseminated carbonate. Total carbonate content is about 20%."

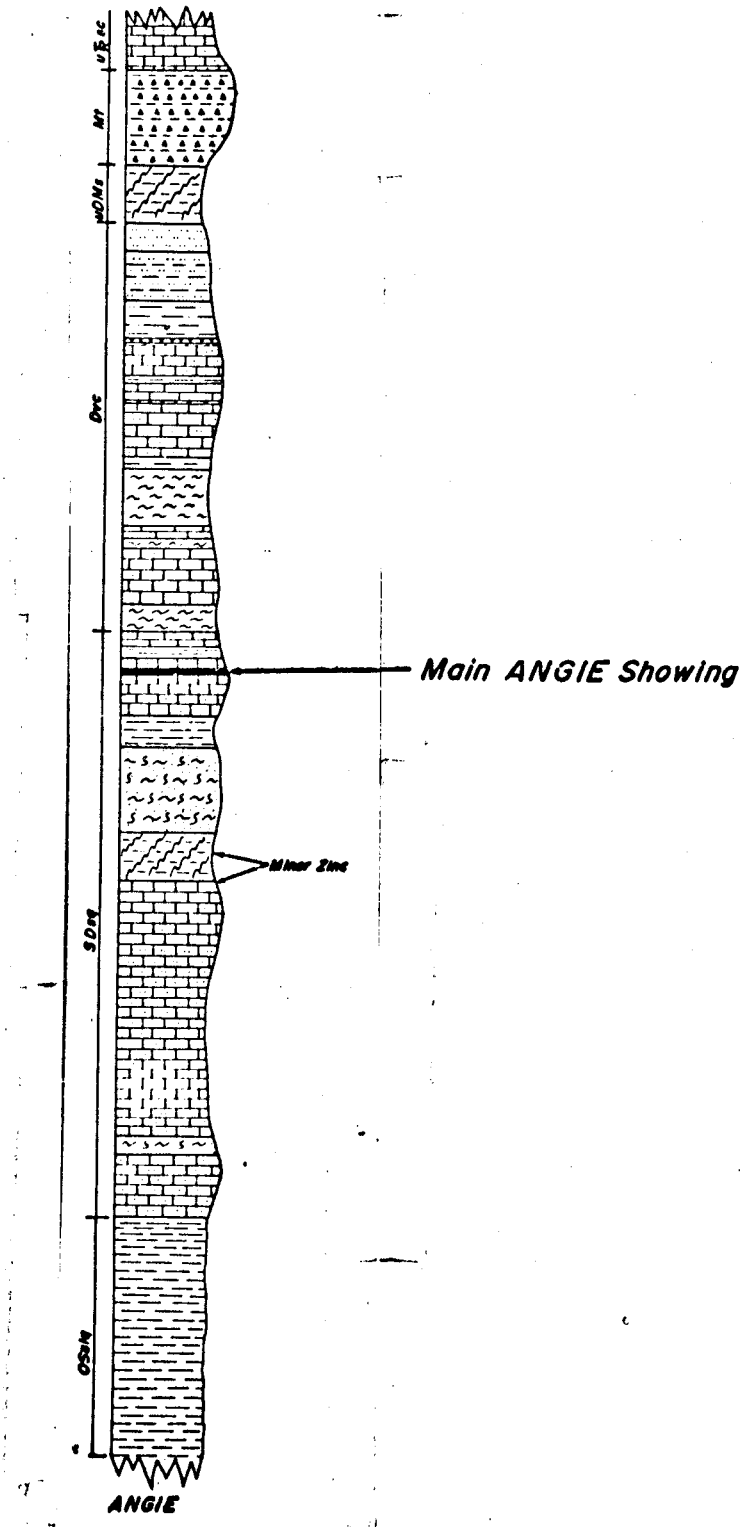
Quartz-carbonate stringers and sweats sometimes containing drusy barite crystals are evident in mineralized talus of this calcareous siltstone.

Mineralization occurs as:

1) smithsonite and sphalerite and native silver in finely disseminated leached "oolitic" appearing cavities;

2) disseminated sphalerite and native silver along stringers and lenses of remobilized quartz-carbonate material.

[1] Brereton, W.D.: Petrography of Some Samples from the Sunset, Angie, and G-5 Showings; March, 1978.



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WOODSIDE PROJECT

ANGIE TREND : ANGIE GRID

MINERALIZATION

Scale: vert. 1": 1000'	Date: FEB. 1978	NTS. 104
Revised:	By: F. FOSTER	FIG 2 6

Type 1 mineralization, as described below (Fig. 7), is the most prevalent. This mineralization is found disseminated uniformly throughout the host rock and tends to concentrate in more carbonate-rich beds in the siltstone. Polished section analysis of this type of mineralization (Brereton, 1978) revealed the presence of "... pyrite, sphalerite and native silver. Minor pyrite (0.5% or less) forms very tiny disseminated grains, often pitted and corroded, and may be the latest sulphide ... Sphalerite occurs ... as equant red-brown grains ... 0.25 to 1 mm (in size). The native silver ... occurs mainly as tiny grains on the rims of sphalerite crystals, sometimes enclosing (and replacing?) portions of the sphalerite. The silver is thus clearly later than the sphalerite. Much of the sphalerite has been leached out leaving tiny Ag grains in the voids."

Type 2 mineralization tends to be much coarser grained than that previously described. Patches of honey-brown remobilized sphalerite up to 1 inch across can occur in quartz carbonate sweats. The sphalerite can also occur as uniform, but coarser (.2 inches) disseminations throughout quartz-carbonate veined portions of the host rock. Because of the higher silica content in this type of rock weathering has been less penetrative and the zinc sulphides are not leached.

PYRITE Showing

The PYRITE showing is situated 3 miles northwest of the ANGIE grid area in a gossanous creek bed (Fig. 5). Black rusty weathering argillite and shale presently mapped as OSslq host 10 to 20% pyrite occurring as nodules, laminations and distinct and separate crystals. The gossanous section of the creek extends over a strike length of 1200 feet and cuts through an estimated 300 feet of section. Within this area of the creek bed, banks of red caleche and limonitic ooze are

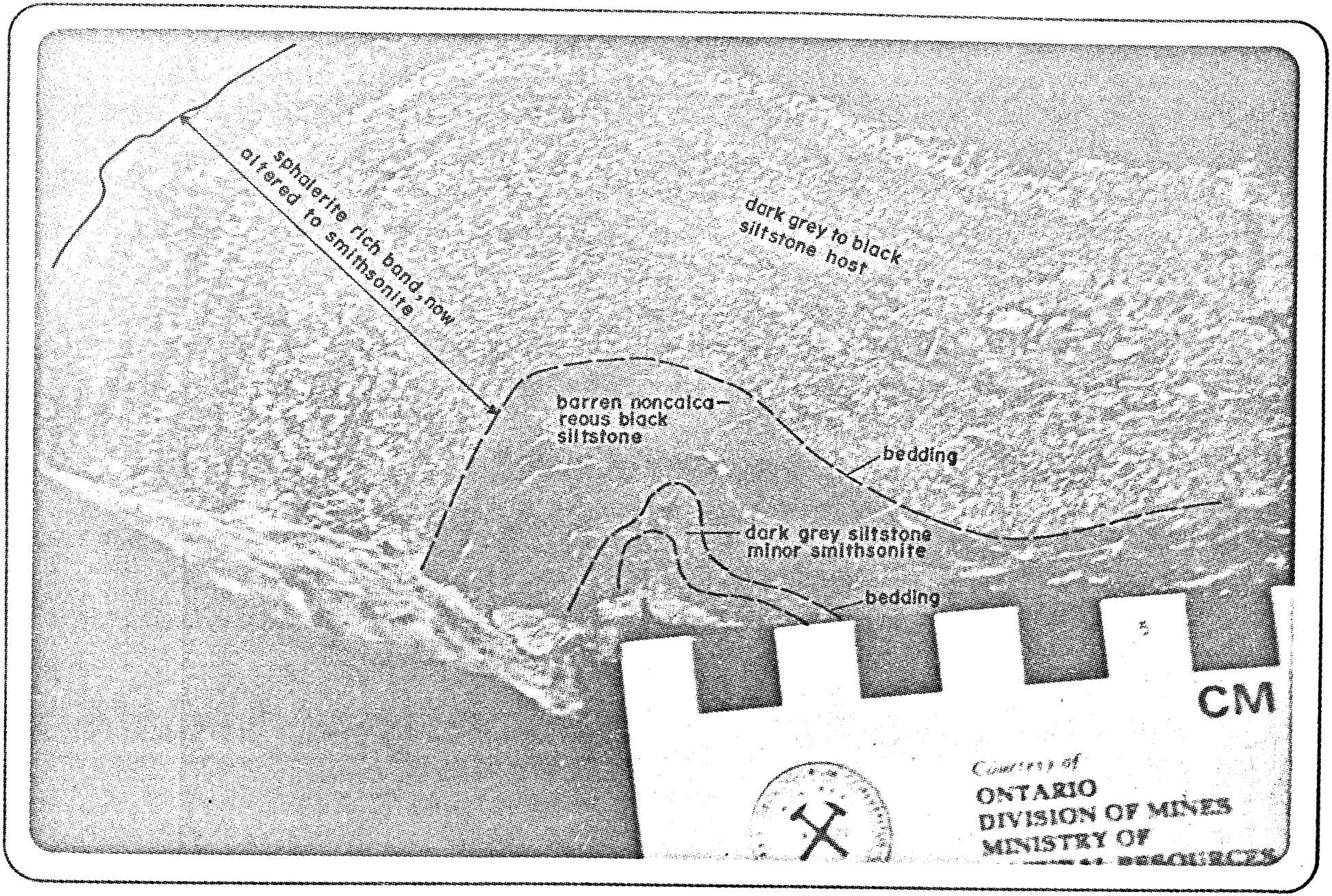


Fig. 7 Mineralized Specimen from Angie Showing

formed in overburden where there has been abundant groundwater seepage. At several localities yellow staining identified as plumbojarosite forms coatings along fracture planes. One sample containing such material assayed 3500 ppm lead and 2200 ppm zinc.

Other Occurrences

The two minor zinc horizons (Fig. 6), occur below the main quartzite band in sooty argillites of SDsq. The host rock is a thin laminated, weak to moderately calcareous siltstone which is locally interbedded with argillite. The mineralization occurs as erratic discontinuous zinc-rich zones which strongly react to zinc test solution. Bluish hydrozincite stain is common on weathered surfaces, but so far no other visible zinc mineralization has been found.

Genesis

Insufficient work has been done to determine the genesis of mineralization, however petrographic work by Brereton, 1978 has suggested that the sphalerite mineralization is syngenetic and that silver is epigenetic. The formation of smithsonite is due to surface leaching of the sphalerite.

TRENCHING AND SAMPLING

The ANGIE showing is located on a small resistant knob centered on grid coordinates 3;+00N, 9+50W. Plate 1 shows an enlargement of the showing area with the location of outcrop, mineralized float, and hand trenches. The limestone talus apron which covers the south and east flanks of the knob contains abundant mineralized debris forming a broad crescent-shaped band over 500 feet long and 160 feet wide. As no mineralization could be found in place within the main ANGIE showing area, a limited hand trenching program was carried out. This work successfully exposed significant sections of

zinc and silver mineralization in three of four trenches (Plate 2) with only minor zinc mineralization found in the fourth trench.

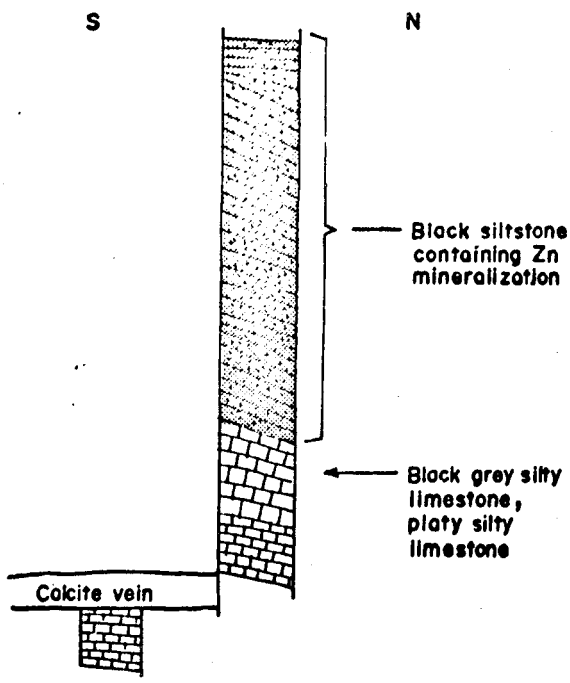
Results of assays of 5-foot chip samples taken in these trenches are listed below. Cross-sections of each of the trenches are shown in Fig. 8, 9, 10, 11.

Trench	Footage	Lead %	Zinc %	Silver Oz./ton
No. 1	0- 5	.01	.29	.07
	5-10	.01	1.64	.58
	10-15	.01	8.90	3.07
	15-20	-	8.65	2.92
	20-25	-	7.65	3.48
No. 2	0- 4	.01	6.30	1.95
No. 3	0- 6	-	6.00	.85
	6-11	-	0.60	.15
No. 4	0- 5	0.02	0.13	-

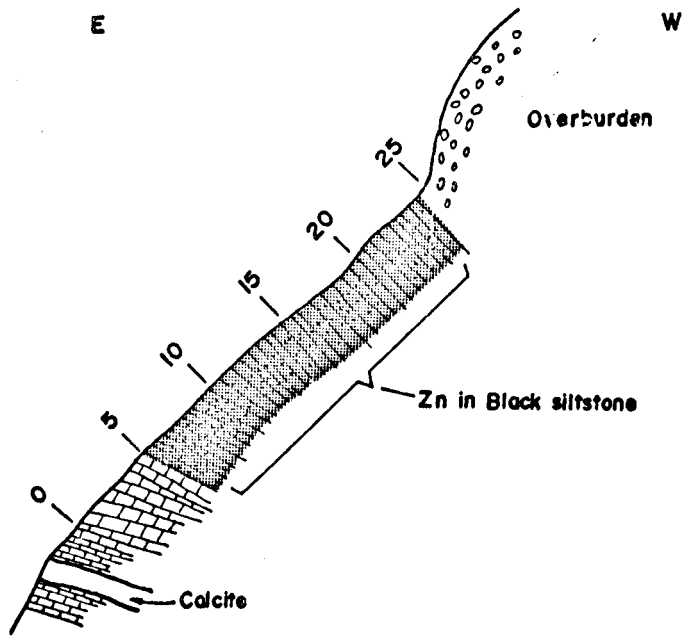
Results of the trenching indicate that mineralization exposed to date extends at least 400 feet of strike length and attains thicknesses greater than 20 feet.

Trenches No. 1 and No. 2 exposed a portion of the same mineralized band. These trenches established the footwall to the mineralization but failed to establish the hanging wall due to thick overburden cover. True stratigraphic thickness of the mineralization exposed thus far is 20 feet (Fig. 8). Fifteen feet of this section assayed 8.4% zinc and 3.16 oz./ton silver.

Trenches No. 3 and 4 (Plate 1) exposed mineralization such as seen in trenches No. 1 and 2.



PLAN



CROSS-SECTION

ASSAYS

Footage	% Pb	% Zn	oz Ag
0-5	.01	.29	.07
5-10	.01	1.64	.58
10-15	.01	8.90	3.07
15-20	—	8.65	2.92
20-25	—	7.65	3.48

Sampled By F. Foster

NOTE: For location, see Plate 2

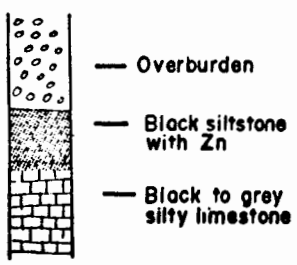
WELCOME NORTH MINES LTD.

GETTY MINING PACIFIC LTD.

WOODSIDE PROJECT
ANGIE TREND - ANGIE Grid
TRENCH No. 1

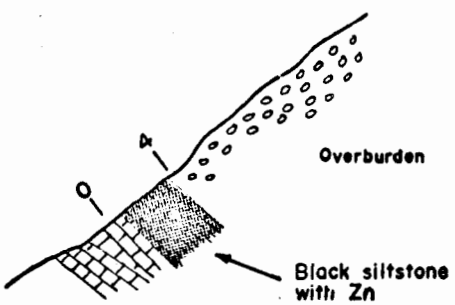
Scale: 1" : 10'	Date: OCT. 1977	N.T.S. 105F/16
Revised:	By: F. F.	Fig. 8

S N



PLAN

E W



CROSS-SECTION

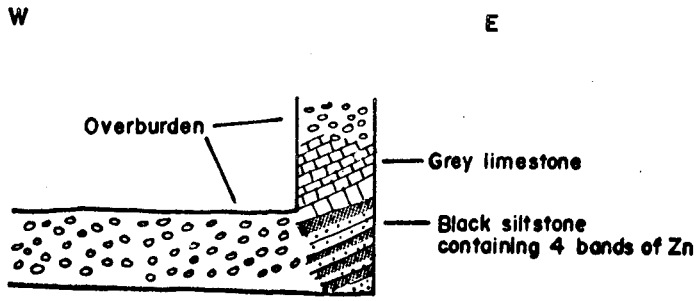
ASSAYS

Footage	% Pb	% Zn	% Ag
0-4	.01	6.30	1.95

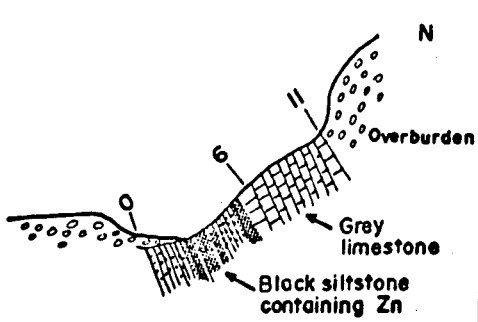
Sampled By F. Foster

NOTE: For location, see Plate 2

WELCOME NORTH MINES LTD.		
GETTY MINING PACIFIC LTD.		
WOODSIDE PROJECT ANGIE TREND-ANGIE Grid TRENCH No. 2		
Scale: 1" : 10'	Date: OCT. 1977	N.T.S. 105F/16
Revised:	By: F. F.	Fig. 9



PLAN



CROSS-SECTION

ASSAYS

Footage	% Pb	% Zn	% Ag
0-6	—	6.00	.85
6-11	—	0.60	.15

Sampled By F. Foster

NOTE: For location, see Plate 2

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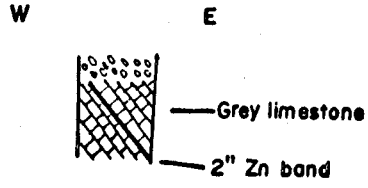
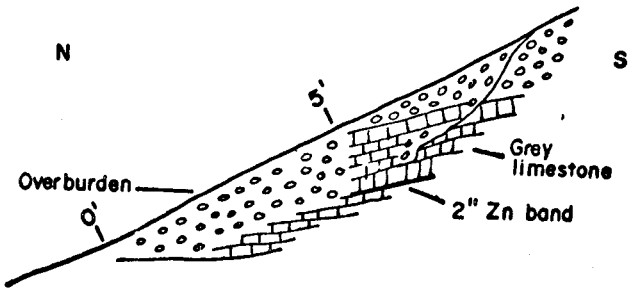
WOODSIDE PROJECT
ANGIE TREND - ANGIE Grid
TRENCH No. 3

Scale: 1" : 10'	Date: OCT. 1977	N.T.S. 105 F/16
Revised:	By: F. F.	Fig. 10



PLAN



CROSS-SECTION

ASSAYS

Footage	% Pb	% Zn	oz Ag
0 - 5	0.02	0.13	—

Sampled By B.Holland

NOTE: For location, see Plate 2

WELCOME NORTH MINES LTD.

GETTY MINING PACIFIC LTD.

WOODSIDE PROJECT
ANGIE TREND - ANGIE Grid

TRENCH No. 4

Scale: 1" : 10'	Date: OCT. 1977	N.T.S. 105F/16
Revised:	By: R. H.	Fig. 11

Selected hand specimens collected at the showing assayed for zinc and silver as follows:

Sample No.	Zinc %	Silver Oz./ton
3772	3.94	1.81
3773	0.20	0.11
3774	26.50	1.33
3775	8.14	6.53
3776	3.07	6.49
3777	5.24	10.52
3778	1.48	1.98
3779	2.96	1.69
3781	5.44	0.32
3782	5.57	5.92
3806	1.68	1.56
7777	15.3	0.22

GEOCHEMISTRY

Method of Survey, Analysis and Treatment of Data

Soil samples were collected with a prospectors grub hoe at 100-foot station intervals on lines of 400-foot spacing on the ANGIE grid. The geochemical survey was carried out as an aid to defining the extent of known mineralization found in place within the ANGIE grid area. In areas of extensive talus outcrop, where no soil was available, rock chip samples were taken instead of soil samples. All samples were collected in Kraft brown paper bags and dried prior to shipment for analysis.

Samples were analyzed by Acme Analytical Labs in Burnaby, B.C. As the samples were received, each was dried while in its Kraft bag, then screened to 80 mesh, weighed out to 0.5 grams and digested in hot aqua regia. Rock samples were crushed and pulverized before undergoing

this process. Samples were then diluted, clarified for 20 hours and tested for lead, zinc, and silver content on an atomic absorption spectrophotometer. Accuracy of the instrument ideally is 1 percent of the amount of metal present. Silver assays are only accurate to $\pm$ 1 ppm. Individual cathode lamps were used for each element determination, a direct readout being given in parts per million of the element being tested.

Geochemical results were plotted on field maps kept by the party chief to aid in carrying out preliminary follow up of anomalous areas while still in the field. Rock chip samples were distinguished from soils on all maps presented with this report by a capital "R" prefix.

A partitioning procedure (see A.J. Sinclair, 1973) was used to separate two and sometimes three populations, one being anomalous and the others being background. The overlap of these populations was determined and thresholds chosen arbitrarily to isolate priority populations such that contour intervals could be chosen for values maps of each element.

Separate maps were prepared, using a scale of 1" = 500', showing values obtained for lead, zinc, and silver (Plates 3, 4, 5). Values were contoured and colour coded by population to distinguish anomalous areas. The maps are included in the pocket of this report.

Interpretation of Results

a) Lead

Only two lead anomalies were found in the grid area, both of which are insignificant in size and magnitude and do not appear related to any known mineralization. Of minor interest however is the

with a similar sized and shaped zinc anomaly, within the Devonian limestone. No mineralization was reported in this area, however the intensity of the silver values compared with those over the known silver occurrences could indicate mineral close to the surface.

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LEGEND

BLACK CLASTIC SEDIMENTS — UPPER ROAD RIVER — SELWYN BASIN

CTr

UPPER TRIASSIC

UT_{Rsc}

UT_{Rsc} — MASSIVE DARK GREY BIOCLASTICS AND SANDY LIMESTONES; GREENISH BLACK CHLORITIC SHALE

Volcanics

MISSISSIPPIAN

Mt

7 — MASSIVE TO THIN FAINTLY LAMINATED GREENISH GREY CHERT & CHERTY TUFF.

Sediments

UPPER DEVONIAN–MISSISSIPPIAN

uDMs

6 — MASSIVE TO FAINTLY LAMINATED NON-CALCAREOUS "SOOTY" BLACK ARGILLITE.

DEVONIAN

Dvc

5f — LIGHT GREY NON-CALCAREOUS TURBATED SILTSTONE.

5e — FISSILE, FINELY LAMINATED WEAKLY CALCAREOUS MUDDY SILTSTONE.

5d — PINKISH WEATHERING FLAKY WHITE TUFF WITH GREENISH CLASTS; FINE GRAINED CALCAREOUS SILTSTONE CONGL.

5c — FISSILE, WEAKLY CALCAREOUS DARK GREY SILTY SHALE.

5b — SILVERY GREY TO BLACK WEATHERING PORPHYROBLASTIC GREY TO BLACK PHYLLITIC SHALE.

5a — MASSIVE TO FAINTLY LAMINATED, DARK GREY TO BLACK SILTY LIMESTONE & CALCAREOUS SILTSTONE. CRINOIDAL & RECRYSTALIZED LIMESTONE COMMON

SILURIAN – DEVONIAN

SDsq — Mt. Ross Quartzite

4d — FISSILE, NON-CALCAREOUS, BLACK PHYLLITIC SHALE; LOCALLY THINLY INTERBEDDED WITH LIMESTONE.

4c — MASSIVE TO THIN BEDDED, DARK GREY TO BLACK, SILTY LIMESTONE AND CALCAREOUS SILTSTONE.

4b — BLACK WEATHERING FAINTLY THIN LAMINATED NON-CALCAREOUS "SOOTY" BLACK ARGILLITE; LOCALLY THINLY INTERBEDDED WITH SILTSTONE OR SILTY LIMESTONE.

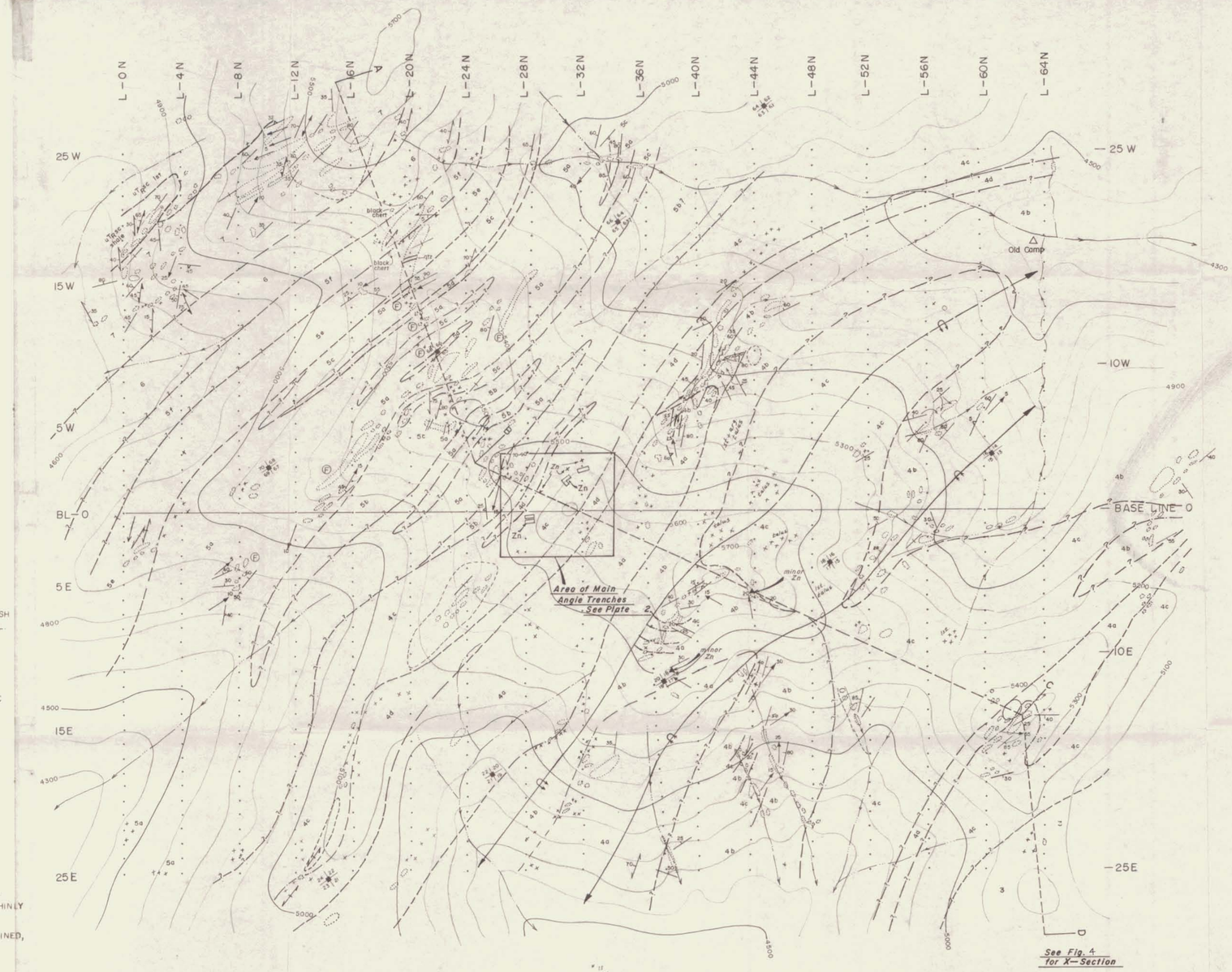
4a — ORANGE WEATHERING MASSIVE, FINE TO COARSE GRAINED, WEAKLY CALCAREOUS GREY QUARTZITE.

ORDOVICIAN – SILURIAN

OSsIq — Black Siliceous

3 — BLACK TO RUSTY WEATHERING, GRAPHITIC, SILICIOUS & PYRITIC SHALES & PHYLLITES.

By B. Holland



SYMBOLS

- CLAIM POST
- CREEK
- OUTCROP
- LIMIT OF BROKEN OUTCROP & SUBOUTCROP
- CONTACT (DEFINED, INFERRED, APPROXIMATE)
- lst — LIMESTONE
- arg — ARGILLITE
- qtz — QUARTZ VEIN
- AXIAL PLANE
- MINOR FOLD AXIS
- LINEATION
- CLEAVAGE (POSSIBLY PARALLEL TO COMPOSITIONAL LAYERING)
- CROSS CLEAVAGE
- COMPOSITIONAL LAYERING
- Zn — ZINC MINERALIZATION
- HAND TRENCHES
- FLOAT & TALUS
- FOSSIL (CRINOIDS)
- OVERTURNED ANTICLINE, SYNCLINE
- FOLD AXIS (DEFINED, ASSUMED)
- MINERAL OCCURRENCE

WELCOME NORTH MINES LTD.

GETTY MINING PACIFIC LIMITED

WOODSIDE PROJECT
ANGIE TREND: ANGIE GRID
GEOLOGY

SCALE 1" = 500'	DATE OCT. 3, 1977	NTS 105 F/15
BY B. Holland DRAWN P. Pecek	REVISED Oct 23, 1977 Apr. 23, 1978	PLATE 1

400 W —

300 W —

200 W —

100 W —

BASE LINE 0

100E —

200E —

300E —

L-28 N

L-32 N

5500

5550

5600

5650

5700

TRENCH No.1

TRENCH No.2

TRENCH No.3

TRENCH No.4

Calcite Vein

29 N

30 N

31 N

70-90

4a

4c

4d

5b

LEGEND

4a	MASSIVE, FINE TO COARSE GRAINED GREY QUARTZITE.
4c	MASSIVE TO THIN BEDDED FINE GRAINED BLACK SILTY LIMESTONE & CALCAREOUS SILTSTONE.
4d	STRONGLY FISSILE, NON CALCAREOUS, BLACK PHYLLITIC SHALE.
5b	STRONGLY FISSILE, PORPHYROBLASTIC GREY TO BLACK PHYLLITIC SHALE.

- LIMIT OF TALUS
- OUTCROP
- APPROXIMATE LIMIT OF OUTCROP
- GEOLOGICAL CONTACT (APPROXIMATE, INFERRED)
- MINERALIZED FLOAT
- MINOR FOLD AXIS
- 65 COMPOSITIONAL LAYERING

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WOODSIDE PROJECT

ANGIE TREND: ANGIE GRID

PLAN SHOWING TRENCHES

Scale: 1" = 50 FEET	Date: OCT. 1977	N.T.S. 105 F/16
Revised:	By:	Plate 2

L-0N L-4N L-8N L-12N L-16N L-20N L-24N L-28N L-32N L-36N L-40N L-44N L-48N L-52N L-56N L-60N L-64N

25 W — 25 W

15 W — 10W

5 W

BL-0 — BASE LINE 0

5E — 10E

15E

25E — 25E

Area of Angie Showing
See Plate: 2

4500

5000

5500

SYMBOLS

- CREEK
- CLAIM POST
- ▲ MINERAL OCCURRENCE
- R ROCK CHIPS

	> 132	ANOMALOUS POPULATION
	51 – 132	THRESHOLD "
	6.5 – 50	HIGH BACKGROUND POPULATION
	< 6.5	LOW " "

(VALUES IN ppm)

WELCOME NORTH MINES LTD.

GETTY MINING PACIFIC LTD.

WOODSIDE PROJECT
ANGIE TREND - ANGIE GRID
LEAD GEOCHEMISTRY

SCALE 1" = 500'	DATE OCT. 3, 1977	NTS 105 F/16
DRAWN P. PECEK	REVISED	PLATE 3

L-0 N | L-4 N | L-8 N | L-12 N | L-16 N | L-20 N | L-24 N | L-28 N | L-32 N | L-36 N | L-40 N | L-44 N | L-48 N | L-52 N | L-56 N | L-60 N | L-64 N

25 W — 15 W — 5 W — BL-0 — 5 E — 15E — 25E

— 25 W — 10W — BASE LINE 0 — 10E — 25E

Area of Angie Showing, See Pl. 2

N

SYMBOLS

- CREEK
- CLAIM POST
- MINERAL OCCURRENCE
- R ROCK CHIPS

	> 1060	ANOMALOUS POPULATION
	440 — 1060	HIGH THRESHOLD POPULATION
	99 — 439	LOW —"— —"—
	46 — 98	BACKGROUND POPULATION
	< 46	LOW BACKGROUND POPULATION

(VALUES IN ppm)

WELCOME NORTH MINES LTD.

GETTY MINING PACIFIC LTD.

WOODSIDE PROJECT
ANGIE TREND — ANGIE GRID
ZINC GEOCHEMISTRY

SCALE 1" = 500'	DATE OCT. 3, 1977	NTS 105 F/16
DRAWN P. PECEK	REVISED	PLATE 4

L-0N L-4N L-8N L-12N L-16N L-20N L-24N L-28N L-32N L-36N L-40N L-44N L-48N L-52N L-56N L-60N L-64N

25W 15W 5W BL-0 5E 15E 25E

— 25W — 10W — BASE LINE 0 — 10E — 25E

Area of Angie Showing See Plate 2

SYMBOLS

CREEK

CLAIM POST

MINERAL OCCURRENCE

R ROCK CHIPS

	> 8.0 HIGHLY ANOMALOUS POPULATION
	2.1 – 8.0 ANOMALOUS POPULATION
	0.76 – 2.0 HIGH THRESHOLD POPULATION
	0.35 – 0.75 LOW " "
	< 0.35 BACKGROUND POPULATION

(VALUES IN ppm)

WELCOME NORTH MINES LTD.

GETTY MINING PACIFIC LTD.

WOODSIDE PROJECT
ANGIE TREND – ANGIE GRID
SILVER GEOCHEMISTRY

SCALE 1" = 500'	DATE OCT. 3, 1977	NTS 105 F/16
BY B. Holland DRAWN P. Pecek	REVISED	PLATE 5