926/14W

L49-123 NE
Mineral Claims, M2, M3, M4,
M5, M2-4 Fr.
Giant Mines and Metals Ltd.(N.P.L.
Allen, Alfred R., Engineer.

0004

Alfred R. Allen

GEOLOGICAL ENGINEER

707 Credit Foncier Bldg.,
850 West Hastings St.,
Vancouver, B. C.,
July 29, 1947.

Mr. W.R.Wheeler,
President, Giant Mines & Metals Ltd., (N.P.L.),
707-850 West Hastings Street,
Vancouver, B. C.

Dear Sir:-

Herewith is my report entitled "The Geology of The Mineral Claims M-2, M-3, M-4, M-5 and M-2-4 Fractional, Vancouver Mining Division, British Columbia".

Accompanied by Mr. T. Taylor, prospector, I left Vancouver July 9 and returned July 21st. I hired Mr. F. Downer of Squamish, B.C. to assist in the work and we were on the property eleven days. Trails and Pykett Creek were surveyed by chain and Brunton compass, and pace, compass, and anneroid traverses were made over the remainder of the area included in the five mineral claims abovementioned. A detailed chain and compass survey was made at the junction of Pykett Creek with the Ashlu River where the Pykett Creek vein and associated diabasic dyke pass under overburden and talus on the Ashlu River bank.

Maps, sections, and an itemized expense account of the survey accompany this report.

Yours very truly,

ARA/RA

Alfred R. Allen

Alfred R. Allen

GEOLOGICAL ENGINEER

707 Credit Foncier Bldg.,
850 West Hastings St.,
Vancouver, B. C.
July 29, 1947.

Mr. W. R. Wheeler,
President, Giant Mines & Metals Ltd., (N.P.L.),
707-850 West Hastings Street,
Vancouver, B. C.

Dear Sir:-

The following is an itemized account of the cost of the geological survey of the Mineral Claims M-2, M-3, M-4, M-5 and M-2-4 Fractional:-

Alfred R. Allen	- Fees	$300.00
T. Taylor	- Wages	96.00
F. Downer	- Wages	72.00
Workmen's Compensation Board ($450.00 @ 4.5%)		20.25
Food		32.94
Hotel (Allen and Taylor in Squamish)		4.50
Return fare, Allen and Taylor, Vancouver to Squamish		5.10
Return fare, Allen, Taylor and Downer, Squamish to Upper Squamish		16.00
Report and maps		10.00
	Total	$556.79

Yours very truly,

Alfred R. Allen.

ARA/RA

THE GEOLOGY OF THE MINERAL CLAIMS

M-2, M-3, M-4, M-5
and
M-2-4 FRACTIONAL

VANCOUVER MINING DIVISION

BRITISH COLUMBIA

Report By

Alfred R. Allen

July 1947

TABLE OF CONTENTS

Outline

#1 - Geology of Mineral Claims
111-2, 111-3, 1174, 1115 + 117-2-4 Fr.

#2 - " do "

#3 - 8 Sections - Dykes & Quartz Veins

THE GEOLOGY OF THE MINERAL CLAIMS

M-2, M-3, M-4, M-5
and
M-2-4 FRACTIONAL

VANCOUVER MINING DIVISION

BRITISH COLUMBIA

A. INTRODUCTION

The geological survey was planned with the following objectives:-

(1) To construct a preliminary topographical and geological maps of the area surrounding the quartz vein exposed on the Ashlu River and Pykett Creek.

(2) To examine and map separately the portion of the quartz vein and associated diabasic dyke exposed at the confluence of Pykett Creek and Ashlu River.

(3) To search in particular for and map any quartz veins and, or, diabasic dykes exposed within the area.

(4) To acquire as much geological data as available pertaining to the genesis of the igneous rocks, dykes, and veins within the area.

The survey was made by the writer with the able assistance of Mr. T. Taylor of Vancouver and Mr. F. Downer of Squamish.

The fieldwork was started July 10th and finished July 20th. 1947.

B. LOCATION

The five mineral claims are located in the Vancouver Mining Division, about thirty miles northwest from Squamish, British Columbia. The claims include about 215 acres on the Ashlu River drainage about eight miles northwest from the Squamish River. The claims are from 1200 to 2600 feet above sea level.

C. GEOLOGY

The five mineral claims are located in the Coast Range batholith and the "country rocks" are chiefly granite and granodiorite along the dykes of pegmatitic, and diabasic rocks. On the M-2, M-4 and M-5 mineral claims a massive white quartz vein occupies a shear zone closely associated with a diabasic dyke. The quartz vein contains pyrite, chalcopyrite, a telluride, gold and silver, and the granitic and diabasic wall rocks are in places impregnated with pyrite and chalcopyrite.

1. Igneous Rocks, Dykes, and Quartz Vein.

(a) Granitic Rock

A light grey, medium-grained granitic rock outcrops over a large part of the area. This is composed of light colored, well formed, feldspar which appears to be orthoclase, and a small amount of light grey feldspar along with abundant clear glassy quartz grains and a small proportion of biotite mica and hornblende. The appearance of the feldspar, and the abundance of

From the junction of Pykett Creek
and the Ashlu River -
looking south towards the portal
of the Coin Tunnel.

quartz suggests that this rock may be provisionally termed granite. It contains numerous inclusions of dark grey fine-grained rock. This granite, in small dykes and veinlets, cuts a darker, finer-grained granodioritic rock, and is therefor considered the younger.

(b) Granodioritic Rock

Most of the remainder of the area is underlain by a grey fine-to medium-grained granodioritic rock. This is composed of cream to grey glassy feldspars zoned and twinned, along with some quartz and considerable biotite mica. The relatively small proportion of visible quartz and the appearance of the feldspars suggest that the rock may be provisionally considered granodiorite. It contains, particularly near the Ashlu quartz vein, numerous inclusions of dark grey, five-grained, dioritic rock.

(c) Pegmatitic Rock

The granite and granodiorite are cut by pegmatitic dykes up to two feet thick. The pegmatitic rock is coarse-grained and composed chiefly of light grey to cream feldspar finer-grained quartz and feldspar in graphitic structure, and a few large flakes of biotite.

(d) Hornblendite (?) Dykes

A half mile south of the map area occur a few outcrops of what appears to be a large dyke of hornblendite. This rock is composed of over 90% dark green coarsely crystaline hornblende and and scattered fine-grained feldspar and specks of a sulphide mineral, probably pyrite or chalchopyrite.

(e) Diabasic Dykes

Dark green to black, fine-grained diabasic rock in dykes a fraction of an inch to eighteen feet thick cut the igneous rocks of the area. The rock is not entirely uniform in grain size and composition, and the following three types have been observed within a few hundred feet along the same dyke:-

(1) Very fine-grained dark green rock composed largely of a green micaceous mineral-probably chlorite, and epidote.

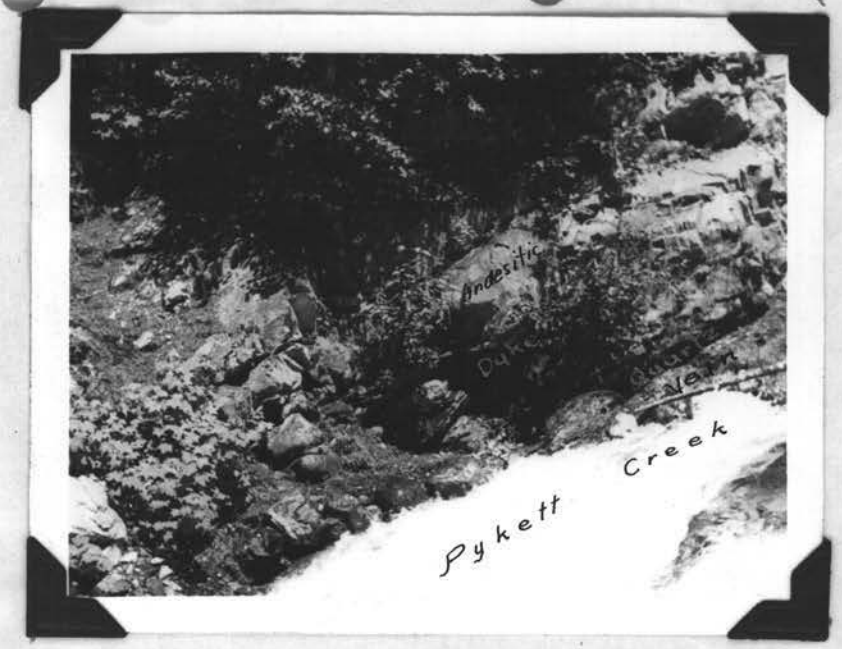
(11) Fine-grained dark green rock composed of a green micaceous mineral, epidote, and scattered very small crystals of feldspar.

(111) Dark green to black, fine-grained rock composed of micaceous material, well formed dark green hornblende crystals, a few small feldspar crystals, and very fine-grained epidote.

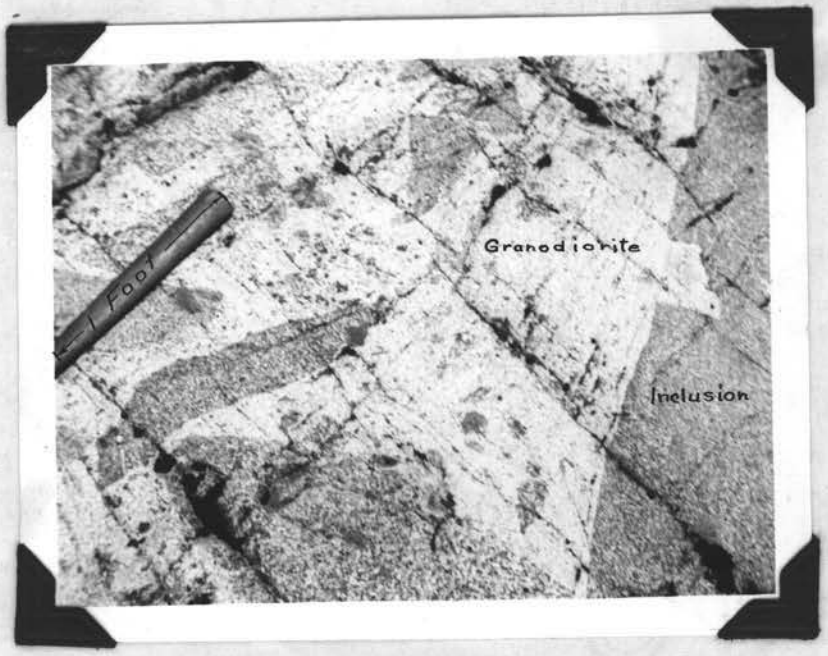
No chilled borders in the dykes and no alteration of the granite or granodiorite at the contacts was observed, except along many of the contacts the host rock is noticeably sheared. This shearing was also observed continuous where some of the smaller dykes pinch out and hence is considered older than the dykes.

(f) Quartz Vein

A vein of massive white quartz up to twelve feet thick cuts the granitic, pegmatitic and diabasic rocks. It occupies a strong shear zone closely associated with a diabasic dyke. Gold and silver occur with pyrite, chalcopyrite and telluride mineral in the quartz, and the metamorphosed igneous wall rocks adjacent



From station No. 6 looking northerly across Pykett Creek. Quartz vein passes under overburden.



Inclusions of Dioritic rock in Granodiorite. Pykett Creek.

to the vein contain impregnations of pyrite and chalcopyrite.

(2) Structure

(a) Inclusions

Small to large inclusions of dark grey dioritic rock occur throughout the granite and granodiorite. The inclusions are mostly angular. They are composed of feldspars and an abundance of hornblende and biotite and locally epidote. In places, such as below the Coin Tunnel portal on the Ashlu River and on Pykett Creek near the upper tunnel, the inclusions make up more than 50% of the rock volume.

(b) Shear Zones

Numerous shear zones occur within the area and all are adjacent to, within, or near the diabasic dykes. The shear of principal economic interest is that along the footwall of the diabasic dyke and in part occupied by the quartz vein from Anderson Creek on the M-2 and M-3 mineral claims to Pykett Creek on the M-5 mineral claim. Where occupied by the quartz vein there is a thin layer of grey-green gouge material on one or both walls, and where not occupied by the vein the gouge is a few inches to several feet thick. Along the shear zone the granitic wall-rocks are altered and weather rusty brown to yellow, and the diabasic rock appears to be somewhat silicified and weather brown to dark red. A large shear zone striking north-westerly is exposed at the inner end of the Coin Tunnel where the granodiorite and included dioritic rocks have been altered to soft grey-green micaceous rock. On Pykett Creek between the 2000

and 2200 elevations a shear zone along the footwall of a diabasic dyke shows similar characteristics to that at the mouth of the creek, but associated with it are cross shears filled with diabasic material or quartz and epidote. About 500 feet up the Ashlu River from the mouth of Pykett Creek a nearly flat shear zone along the footwall of a diabasic dyke contains gouge material and epidote, and the underlying granodiorite is highly altered and contains impregnations of pyrite and chalcopyrite.

(c) Dykes

Dark Green to black diabasic dykes are exposed on the Ashlu River, Anderson Creek and Pykett Creek. These are shown in section A-B. None were observed elsewhere within the area of the five mineral claims. The best exposed of these is that with which the la rge quartz vein is associated, and it extends from Anderson Creek over 2500 feet northerly to the bend in Pykett Creek. It is sheared chiefly along the footwall, and the shear zone is largely quartz-filled. Also in some places branch shears cut obliquely across the dyke, and many of these are occupied by quartz, resulting in what has been termed a "horsetail structure". The dyke is fairly uniform in attitude and thickness, but in several locations such as above the upper tunnel on Pykett Creek, it appears to "pinch" from ten feet thick to a few inches and widen abruptly again to ten feet all within a distance of about 100 feet. A diabasic dyke is exposed for over 1000 feet along the northwest bank of Pykett Creek between 2000 and 2200 feet elevation, along

with several six inch to one foot dykes of similar composition. On the northeast corner of the M-2-4 fractional mineral claim an eighteen foot diabasic dyke is exposed in Pykett Creek. It strikes north fifty degrees east and appears to dip vertical. Although there is little or no shearing or wall-rock alteration evident where the dyke is exposed, a small nearby creek contains much iron oxide and there is a good possibility that the iron is derived from pyritized country rock or an iron-rich quartz vein. About 500 feet up the Ashlu River from Pykett Creek a diabasic dyke is exposed on the north bank. This dyke strikes north twenty degrees east and dips ten degrees northwesterly. It is six inches to over four feet thick. A zone of shearing on the footwall is filled with very fine-grained epidote, and the granodiorite footwall is altered and contains pyrite in small bunches and sparse impregnations. The dyke passes under heavy overburden to the west and appears to pinch out along the inaccessible cliffs above the Ashlu River to the east.

(d) Quartz Vein

The Ashlu quartz vein, closely associated with the diabasic dyke, is located between Anderson Creek in the southwest corner of the M-3 mineral claim and the sharp bend in Pykett Creek near the 1600 foot elevation on the M-5 mineral claim. From the Coin Tunnel the projected trace of the vein passes under the Ashlu River, but is exposed on the northwest bank of Pykett Creek. In the Coin Tunnel workings it is two to

twelve feet thick, and on Pykett Creek a few inches to seven feet thick. It lies along the footwall of the diabasic dyke on Pykett Creek, but in the Coin Tunnel workings it reportedly occurs on the footwall and within the dyke. Small quartz stringers from the vein project into fractures and shears in the dyke on Pykett Creek. Included in the vein, particularly near the mouth of Pykett Creek, are numerous inclusions of altered granodiorite rock most of which contain impregnations of sulphides. Gold and silver are directly associated with pyrite, chalcopyrite and a telluride mineral. The sulphides and telluride occur in shoots, bunches, large irregular zones and impregnations in the quartz and wall-rock. The vein strikes north-south to about eight degrees east of north and dips twenty degrees to thirty degrees westerly. The lowest workings on the vein are in the Coin Tunnel below 1150 feet elevation, and the highest exposure is on Pykett Creek at approximately 1550 feet elevation.

D. SUMMARY AND CONCLUSIONS

Mineral claims M-2, M-3, M-4, M-5 and M-2-4 Fractional are located within the Coast Range Batholith of British Columbia. Granite, granodiorite, and numerous inclusions of dark grey dioritic rock constitute all but a small fraction of the rocks within the area of the five claims. No sedimentary rocks outcrop on the five mineral claims. Gold and silver occur with pyrite, chalcopyrite, and a telluride in a quartz vein which is exposed intermittently over a length of more than 2000 feet horizontally and 600 feet vertically. The quartz vein occurs in a shear zone

along the footwall of and within a diabasic dyke.

So far as observed from the numerous outcrops within the map-area the Ashlu quartz vein is the only one of importance exposed to date. Three diabasic dykes occur within the map-area, however, any or all of which may have unexposed quartz veins associated with them, since all show altered footwall contacts with impregnations of pyrite similar in appearance to the wall-rocks of the Ashlu quartz vein.

E. THEORETICAL CONSIDERATIONS

1. Distribution and Association of the Gold.

The gold mined and indicated from sampling to date occurs with the sulphides and telluride in the quartz vein. It is conceivable that the mineral constituents of the diabasic dyke acted chemically upon the solutions containing the gold and were instrumental in the deposition of it within the vein. Off the map-area, preliminary sampling from a quartz vein not closely associated with a diabasic dyke, indicates that pyrite and chalcopyrite within the vein do not carry appreciable gold. If this hypothesis is substantiated by further work, prospecting within the district may well be directed to locating and following diabasic dykes in search for associated quartz veins and contained sulphides and telluride minerals.

2. The Possibility of Roof Pendants.

No sedimentary rocks are known to occur within the map-area, and none have been found in the Ashlu River district by the writer. There are, however red-weathering ridges and peaks, estimated about one and a half miles distances from the camp, and

5000 feet higher. These red outcrops are not the usual granitic rocks common for many square miles of the Ashlu River drainage area and may be a sedimentary or volcanic roof pendant.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4 MAP #1

LEGEND

1. Granite & Granodiorite Containing numerous xenoliths of dioritic rock
2. Quartz Vein Sulphides, Telluride, Gold
3. Diabasic Dykes

M-5 M.C.

M-2-4 Fr. M.C.

M-4 M.C.

M-2 M.C.

M-3 M.C.

Pyrrett Creek

Ashlu River

Camp #

Coffer Tunnel

Trail

Trail From Squamish River To Camp of Giant Mines & Metals

Anderson Creek

1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2600

True N

500 400 300 200 100 0 500 1000
Scale in Feet

REPORT #4
MAP #1

GIANT MINES & METALS
LTD. N.P.L.

GEOLOGY
OF
MINERAL CLAIMS
M-2: M-3: M-4: M-5
AND M-2-4-FR.

July 1947

Alfred R. Allen

A. R. ALLEN
PROFESSIONAL ENGINEER
GEOLOGICAL
PROVINCE OF BRITISH COLUMBIA

LEGEND

1. GRANITE & GRANODIORITE Containing numerous xenoliths of dioritic rock
2. QUARTZ VEIN Sulphides, Telluride, Gold
3. DIABASIC DYKES

M-5 M.C.

M-2-4 FR. M.C.

M-4 M.C.

M-2 M.C.

M-3 M.C.

BYKETT CREEK

ASHLU RIVER

ANDERSON CREEK

Trail From Squamish River To Camp. (Giant Mines & Metals)

Camp

Adit

Tunnel

TRUE N

SCALE IN FEET

500 400 300 200 100 0 500 1000

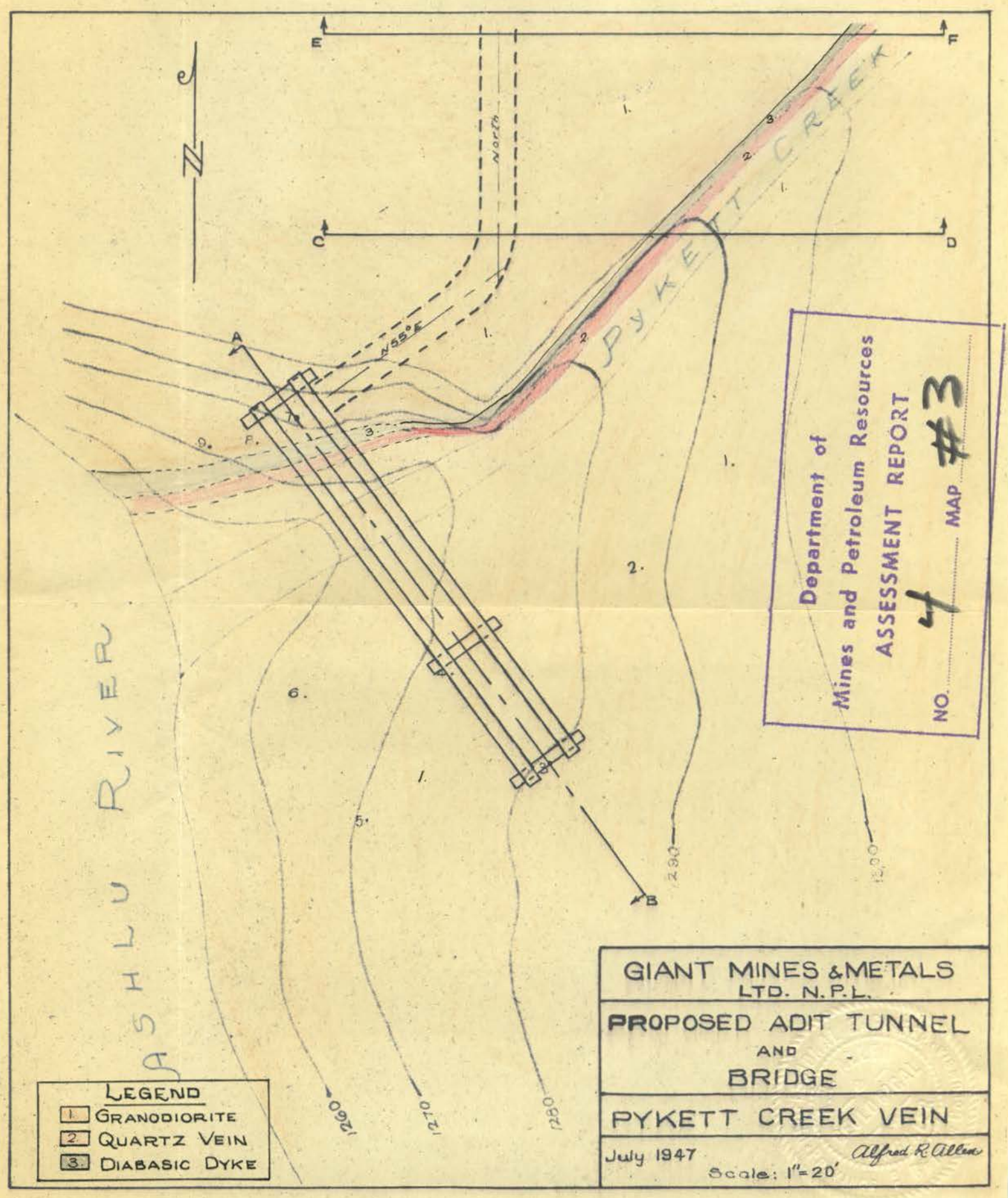
REPORT #4
MAP #2

GIANT MINES & METALS LTD. N.P.L.

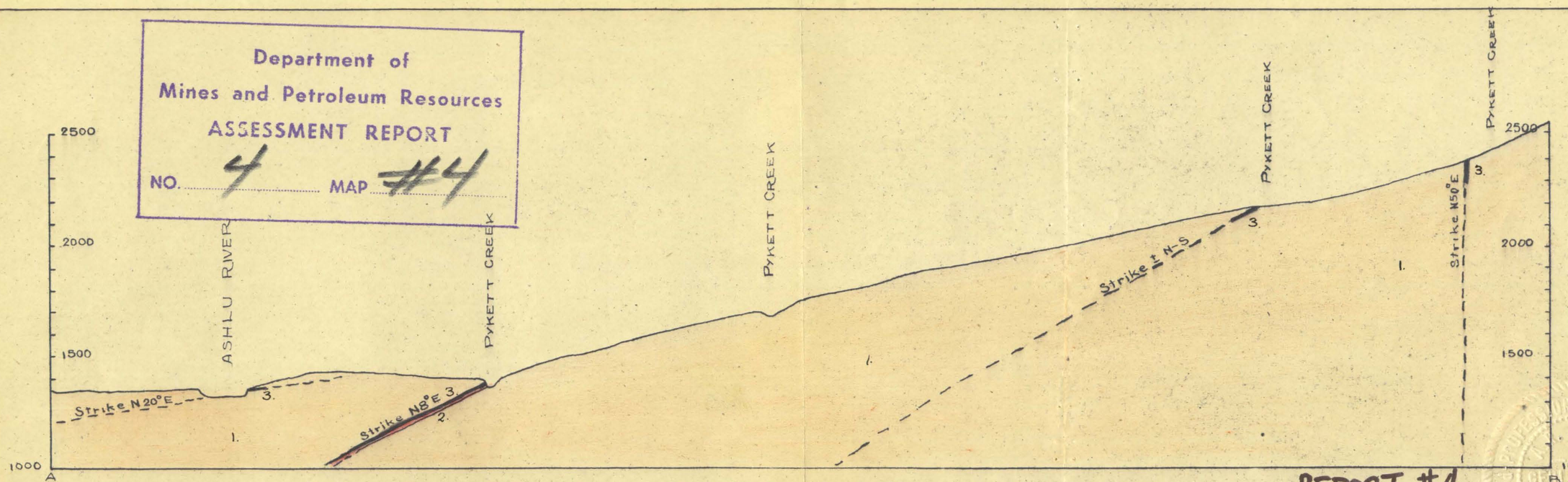
GEOLOGY OF MINERAL CLAIMS M-2: M-3: M-4: M-5 AND M-2-4-FR.

July 1947

Alfred R. Allen


E
F
C
D
N
North
N55°E
A
B
PYKETT CREEK
ASHLU RIVER
1.
2.
3.
5.
6.
9.
F.
1290
1270
1250
1290
1300
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4 MAP #3
LEGEND
1. GRANODIORITE
2. QUARTZ VEIN
3. DIABASIC DYKE
GIANT MINES & METALS
LTD. N.P.L.
PROPOSED ADIT TUNNEL
AND
BRIDGE
PYKETT CREEK VEIN
July 1947
Alfred R. Allen
Scale: 1"=20'

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4 MAP #4

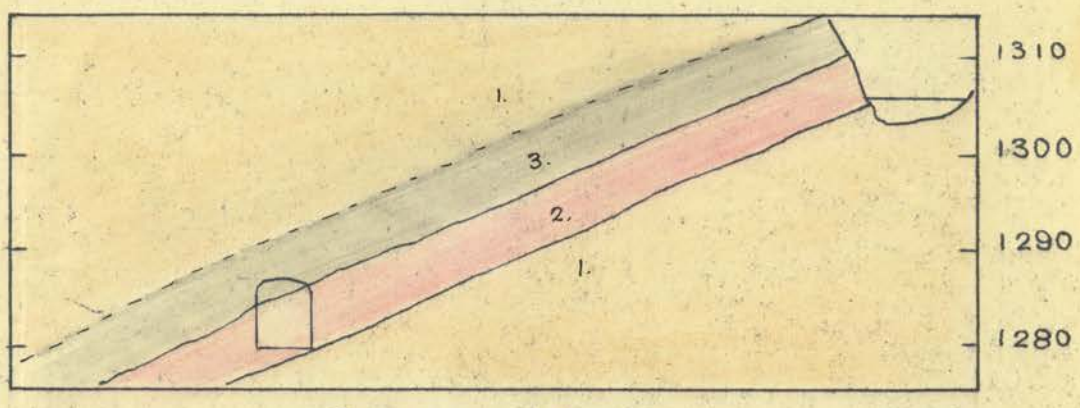


SECTION A-B
SHOWING
DIABASIC DYKES

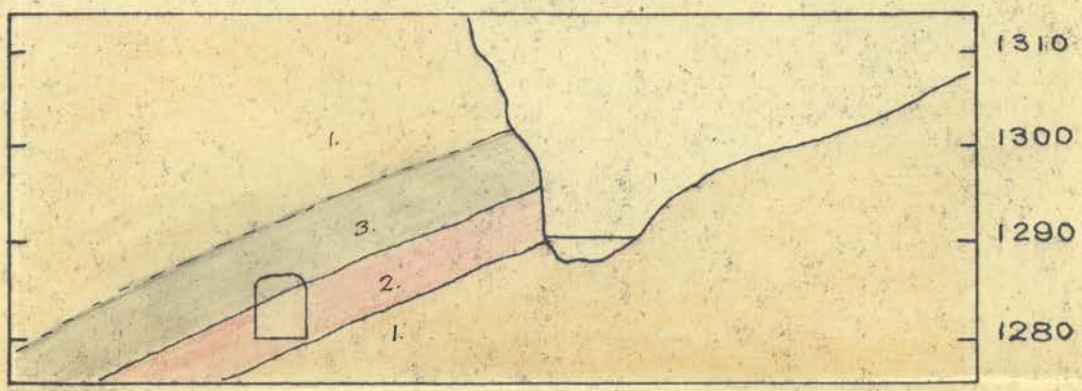
REPORT #4
MAP #4

GIANT MINES & METALS LTD N.P.L.

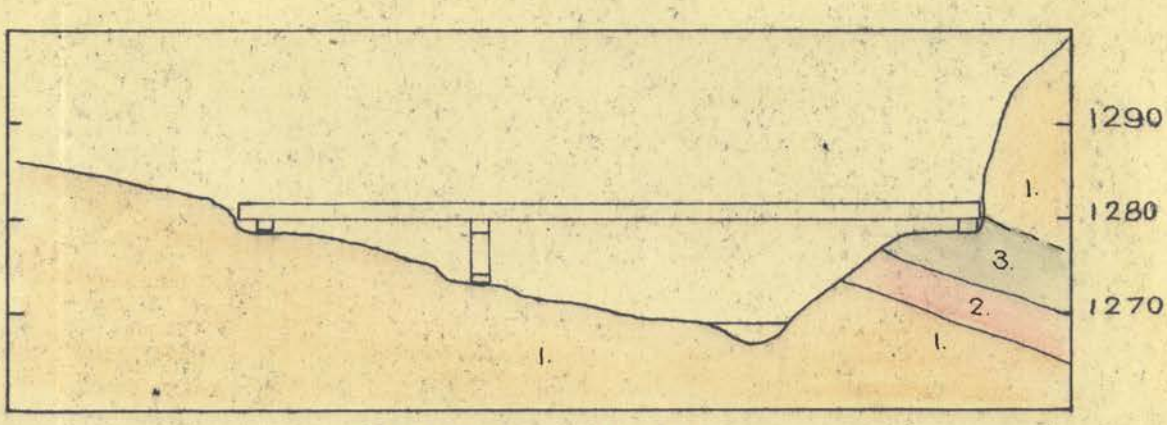
To Accompany Report & Map By Alfred R. Allen July 1947



SECTION E-F



SECTION C-D



SECTION A-B

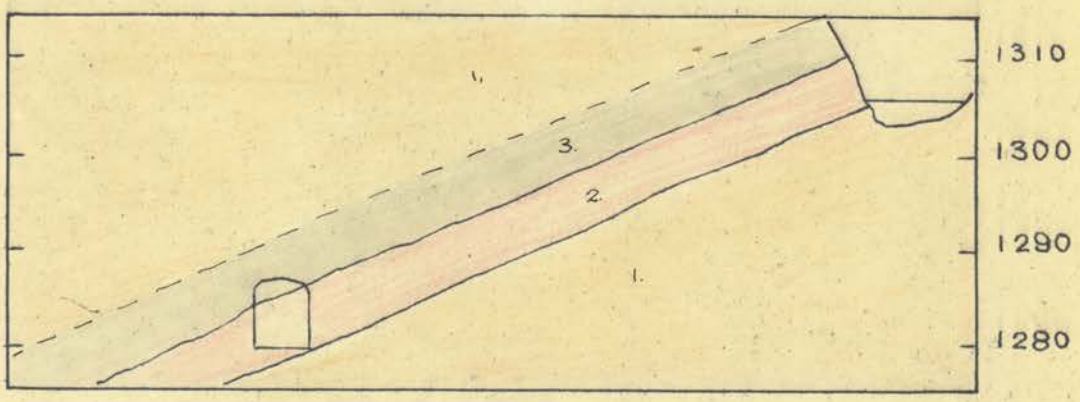
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4 MAP #5

GIANT MINES & METALS
LTD N.P.L.

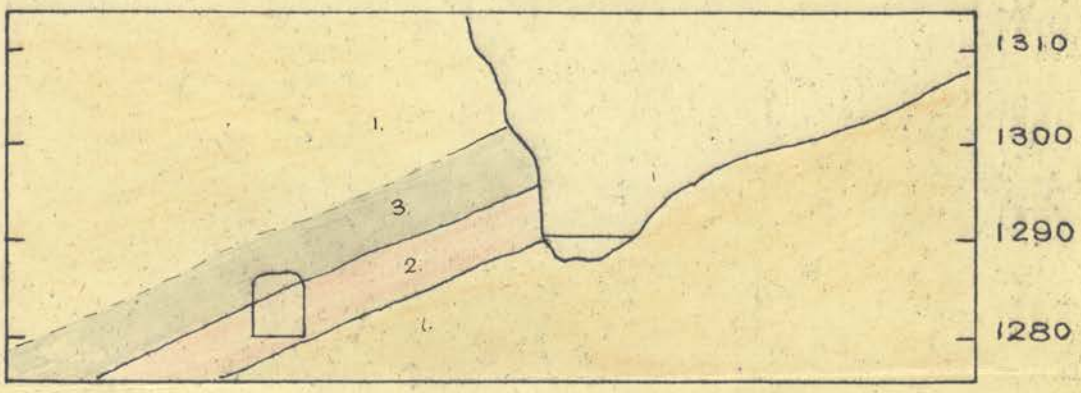
SECTIONS

PROPOSED ADIT TUNNEL
AND BRIDGE

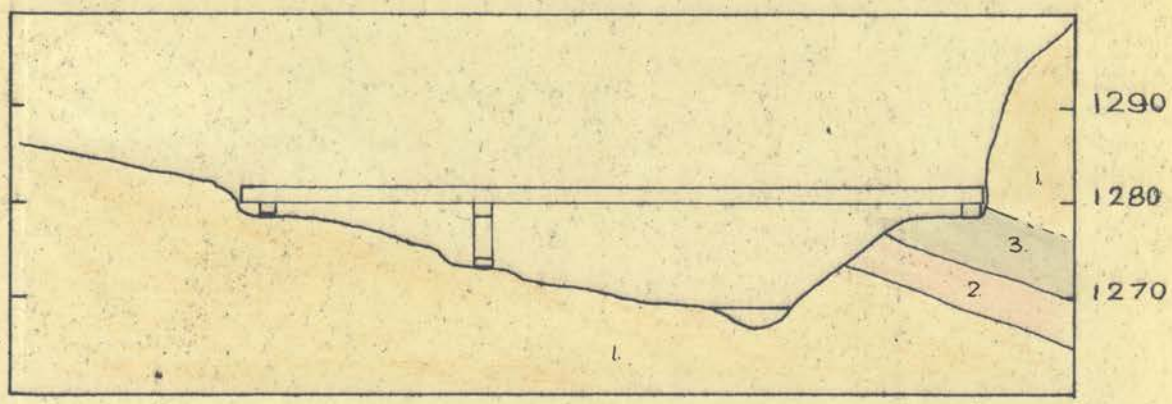
July 1947 Scale 1"=20' Alfred R. Allen



SECTION E-F



SECTION C-D



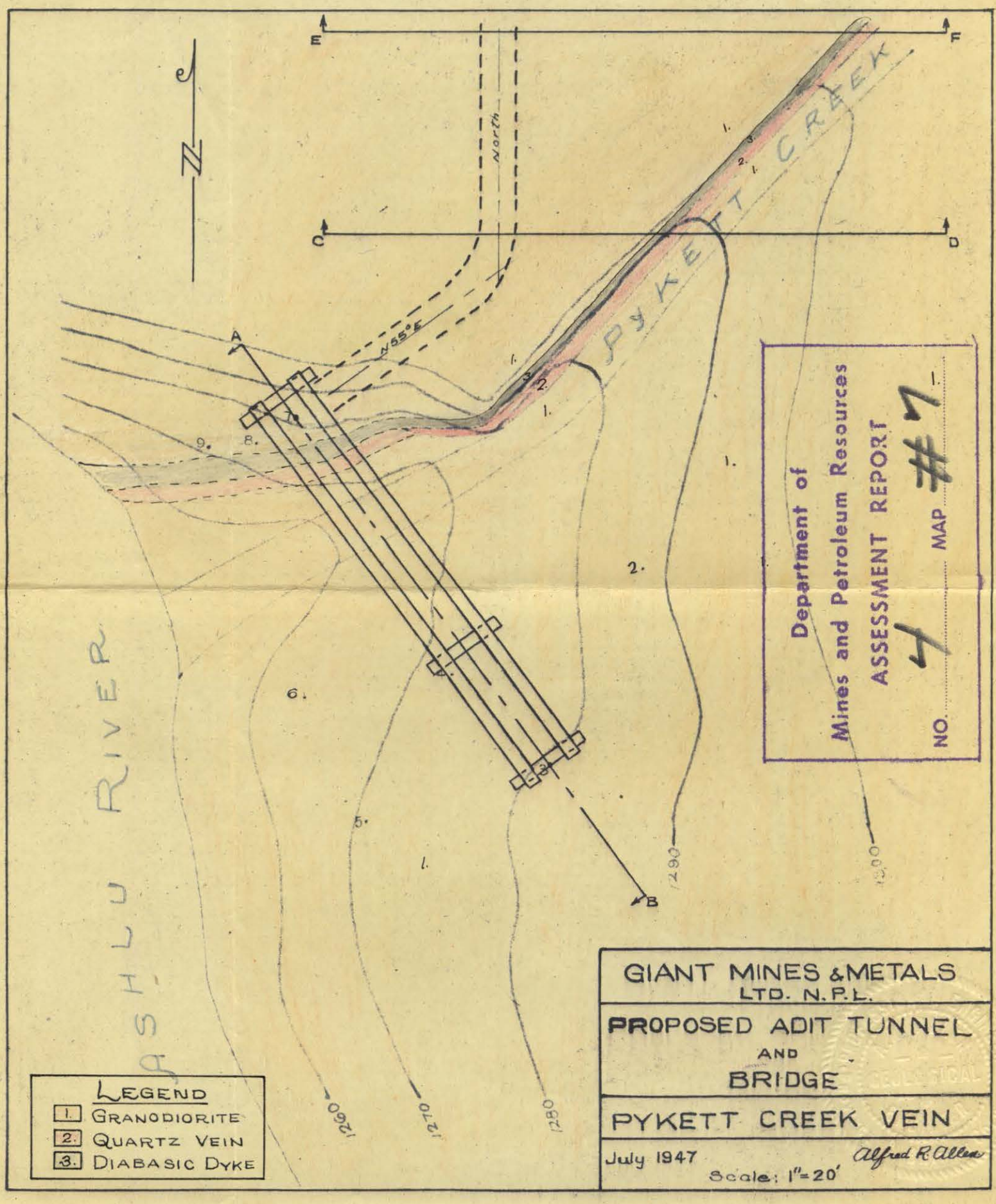
SECTION A-B

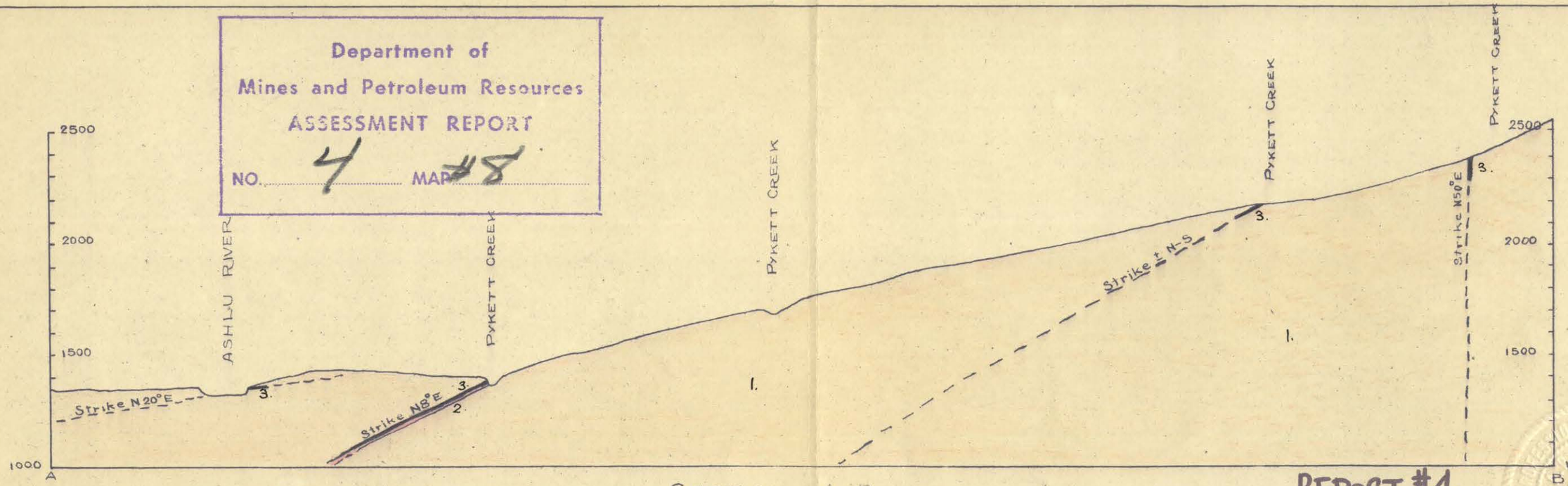
GIANT MINES & METALS
LTD N.P.L.

SECTIONS

PROPOSED ADIT TUNNEL
AND BRIDGE

July 1947 Scale 1"=20' Alfred R. Thomas


E
F
C
D
North
N55°E
A
B
PYKETT CREEK
ASHLU RIVER
1.
2.
3.
5.
6.
8.
9.
1260
1270
1280
1290
1300
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
MAP #7
NO.
LEGEND
1. GRANODIORITE
2. QUARTZ VEIN
3. DIABASIC DYKE
GIANT MINES & METALS
LTD. N.P.L.
PROPOSED ADIT TUNNEL
AND
BRIDGE
PYKETT CREEK VEIN
July 1947
Alfred R. Allen
Scale: 1"=20'



SECTION A-B
SHOWING
DIABASIC DYKES

REPORT #4
MAP #8 GIANT MINES & METALS LTD N.P.L.
To Accompany Report & Map By Alfred R. Allen July 1947