

PACIFIC
WATERPROOF

Mining Transit Book

FILED ER No. 321

018626

Mike Fretwell
Belle, Prsg.

July 15 →

DY6F 832 →

105
G M 1 G-5
5# 732-753

Bl. SHALE



alt acid rock
& pep. chd

105 - G-5
G 2 E side of Canyon
754 - 766

- Bl. Shale half way

105 G 5 Bl. shale

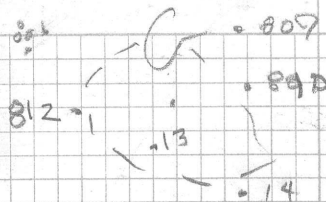
G 3
P.M.
L.M.S.T.
767

767 - 779

Bay 2
772

779

805



105-65

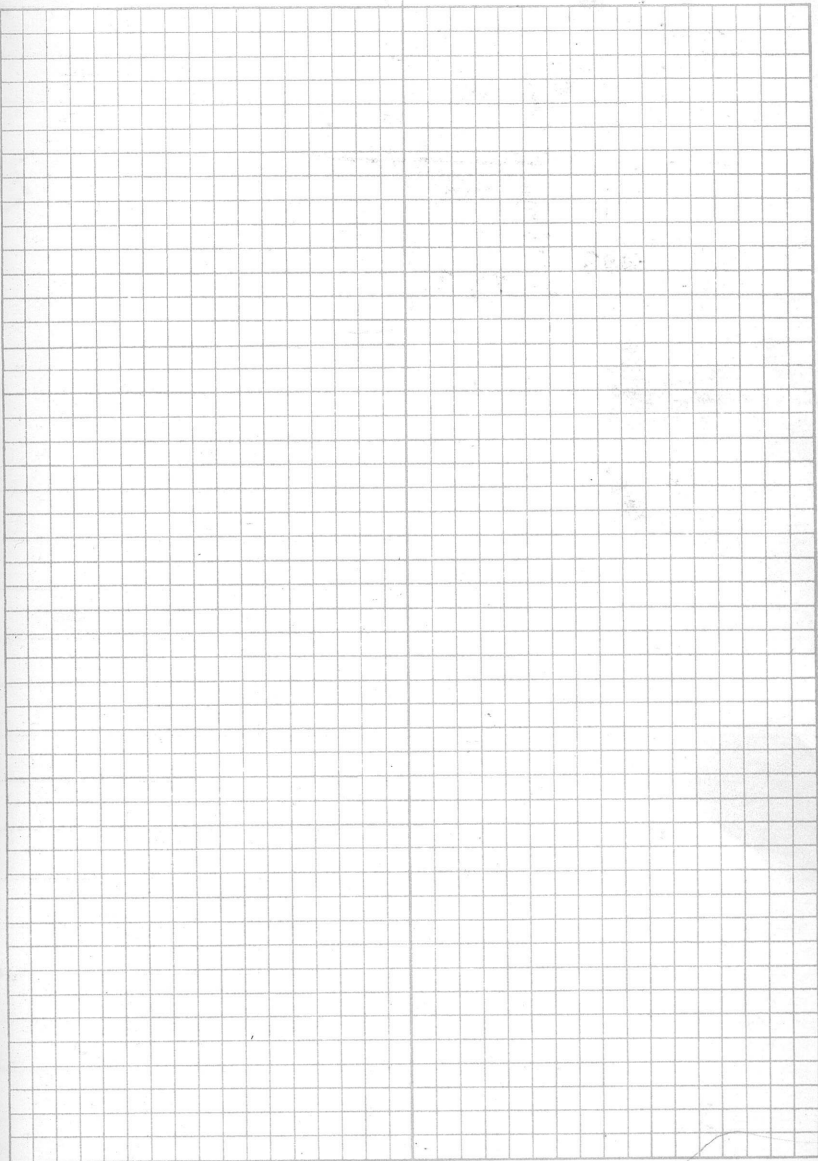
Ci 4

787 790

794

793

792



Pass Peak July 21

$\Delta 1$ 10 LMST - Massive

70
excellent
62/10

$\Delta 2$ Grey Shale.

50
100
general
lens very deformed



$\Delta 3$ 15 ex Interbedded, arg & shaled
55/ lining sole. (R)

45/

815 just above
816 below

Δ4 Pb, Zn, in QUARTZ - carb
veins?
5# 817 in flt.
- occasional Ba
- probably coming from LMST

Δ5 at 714 F & 903 T
- shale OCR along
web.
- LMST + quartz-carb
in flt + chert (R)
Pb & Zn in QUARTZ-CARB

Δ6 at 949 T
Zn rap quartz flt.

Δ7 at 950 T
Pb in QUARTZ flt.

5# 818 S side of pass
1/2 way up

819 - 821 200' above
T 949

July 22/26

CPA claim

822

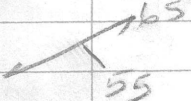
23

24 - 11 6.5

25 7.5

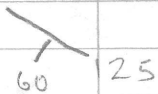
Δ3 Tranching

Δ4 Def. vol. - pyrites in place
 50 yd above showing
 - in creek
 - very graphitic

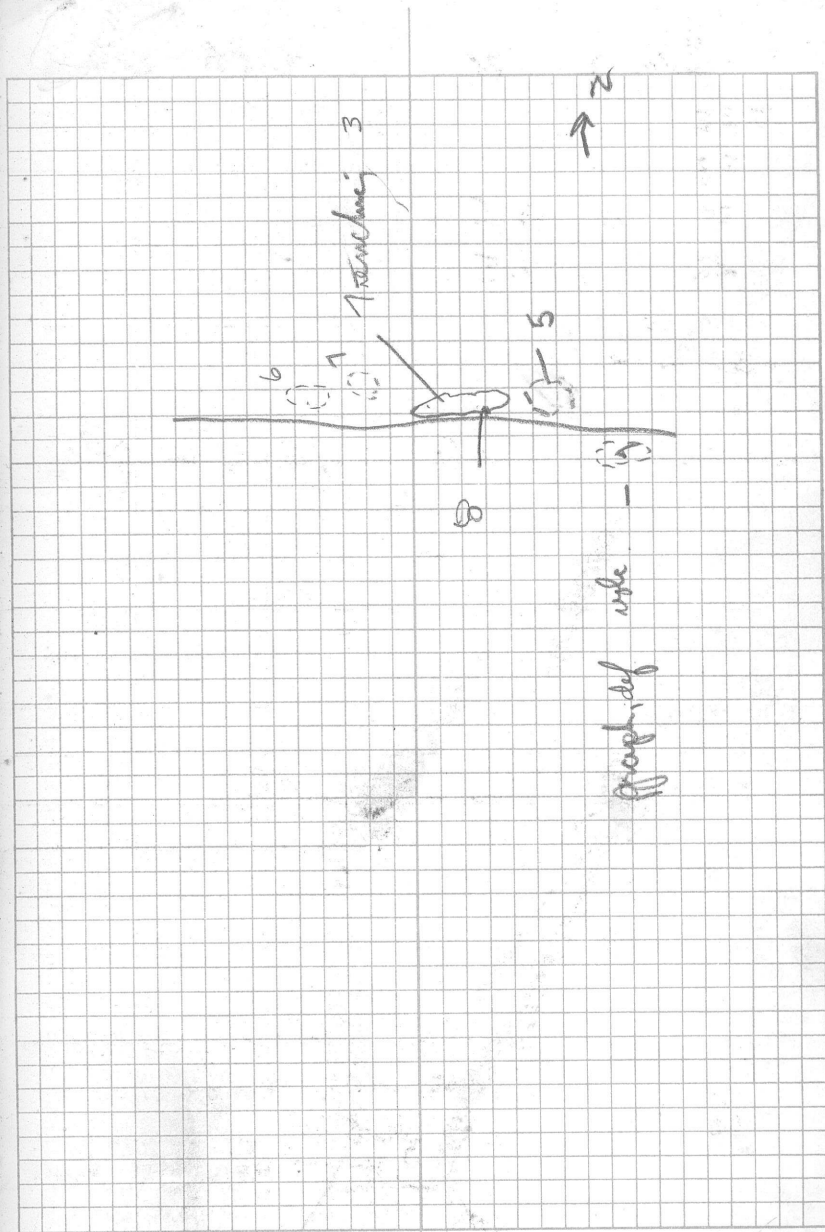


Δ5 def. vol. - faulted
 - graphitic

3 P



1 1/2' - thick bed
 resembling in grade
 Δ3 flt - ore not
 consistent though bed.



3pa bedding or fractures?

3pb at creek level 3'x3' area

- in places highly
in places looks like breccia
all samples along same 6"
of bedding? - or what should
be bedding?

A 6. ~~to~~ 100' downstream of
showing

95
54

slightly
Δ 7 mineralized phyll. - probably
overlying 3

3. (X18)

860 ~~py~~ acid vol at drop off

acid vol + purple blocky vol
at top

- then pyq quartzite?

862 L soil low in

Gossan A

863 R pyq vol flt

(X19)

July 3/76
map to E. of MM.

A-F 12238-203, 204

+ Samples 864-666
gossan on
E of ridge

867-869
to north
of MM.

Δ1 Gray LMST
gd well bed

125
28 — purely local
— very extens. folded
gentle minor folds
— beachy

Δ2 70
90 + grey green
Chlor. phyll

Δ3 GRAY LMST

35 110

Δ4 35
pure Calcite
+ very red LMST
along S wall
of fault

Δ5

60 120 LMST = slightly
phyll

fault → 120
30

Δ6

LMST

35 100

Δ7 30
strong
over large
area

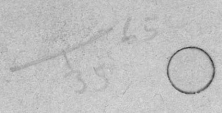
A7



A4

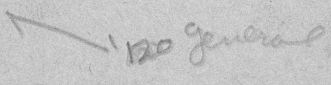


A8

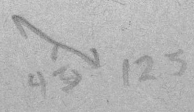


LMST

A9 chlorite acid fol. well defined



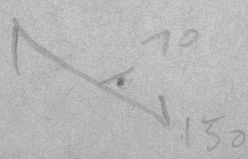
A10



LMST

11 granite

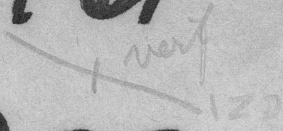
12



lining phyll

P46F

13



877

lining phyll

14. grey green chlor. phyll - lining

5 # 864

→ 866

Cross on river in places

Δ1 LMS

15 → 85

K buff felsom

Δ2 bl. cherty arg
in deformed

3. flt

4. dm place

5. same as 2
- slightly limy
buff

867 in creek

868 + 69 in
mass at
bottom

H B. (X18)
860 ~~pp~~ acid vol at drop off

acid vol + purple blocky vol
at top
- then pp quartzite?

862 L soil hole in
mass A
863 R pp vol flt

(X19)

PY6F

875

July 24/76 105 F 9410
north of 2001

map ridge above

Δ1 heavy Phyll. and vol.
10
30

Δ7 Brittle blocks
green - purple vol.
- at times phyllitic
fracture
← 725
90
25

Δ3 Phyll. and vol.
10
16
Same as 1 & 2

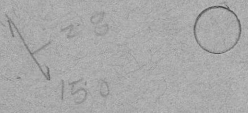
Δ2 Thin chert
chert band - some
with Kossan
Δ5 alternating chert
& chert. non vol.

Δ6 3
25
16
Probably holding
heavy Phyll.
and vol.
- w. carbonate shingle

Δ7 25
140
Interbed. chert + vol.
21 S-T-E

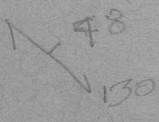
833 P mag. bearing chert
cm. lxx. at 16.

Δ 8 Gray argillite



49 SAND - QUARTZ

99. Brn weath heavy Phyllite



10) same as 9a
Brown w. QUARTZ?

11) Grey Black Arg



12. Tan - Grey w. DOLT
within Area

13. acid shale

14. chert & sets ~ 7

15. Purple ^{acid} shale

PY6F

16. ⁵⁵ chert unit & sets
160

844

17. heavy Phyl. ⁴⁶
45

Δ 18. Bucky and wife
sible. sible.

19. chb. base

20. acid. base

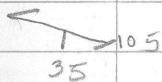
35
110

26
125

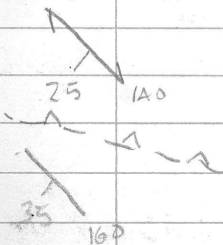
July 27/76

Ridge near 9200
Pros. 9200 ^{is} across
valley

Δ1 arg chert - black - tan

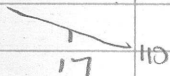


Δ2 Bl. Arg.

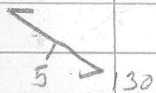


faulted zone

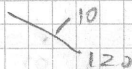
Δ3 Intertbed arg. shale and
limy acid vols.



Δ4 acid limy well fol. vols.



Δ5 more basic porphyry in fol. vols.



Δ6 in 9200 creek.

- recent limonite con. cong. near bottom
- mostly volcanics above.
- quartz rhy + ironstone in vols.

Δ7 } deformed well
70 local } fol. vols.

835 + 36 in creek.

837-40 line at top of Δ8

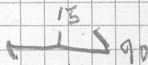
841 at chert-arg. bk

842 at 9200

843 main

Down creek mostly vols.

Δ9 near bottom - black arg.
folding gently



July 29/76

A.F. 12249-86

S# 844-847

Δ1 tuff - honey
- also black "coarse grained"

Δ2

exc

interbedded LMST + ARG.

50
40

A 3

80
10

cht well bed.

Δ4 pyritic volc

Δ845 R

Δ5 SKTS. + Tuff? - very pyritic

70 90 well bed. ^{beds} Δ845 S

C. PYRT volc - un fol

846 L

7. fth near G

8 OCR on ridge - acid volc?

9 interbed arg & honey Phyl
well bedded

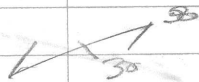
35 120

peak mostly fol acid volc

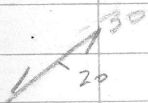
A 10

~~acid volc~~ ⁷⁵
50

Δ 10 - ~~not~~ lining - ~~fol.~~ fol.
acid vol.
same as previously



Δ 11 R - n below - zapped slightly
fol. acid vol

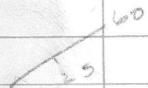


S = 847

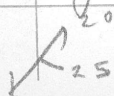
12 A fol. acid vol. - lining
- bottom layer red

13 A

se. chd + arg.



14 fol. acid vol.



330°

48

50

52 at 700

54 at 900

56 at 1100

July 30/76

1056-5

Plotted on blow up

G-1 (X 16)

pyr. cherty - vol.
+ cherty arg. on below

848 - cherty vol.

849 - cherty arg.

850 - gossan.

851 - creek sample below H. post

852 - massive pyrit. flint

G 2 (X 17) ^{acid}
Pyr. vol. - some cherty arg.

853 L

854 R - pyr. acid vol.

859 R - gossan R - acid vol

539 - on gossan slope

RON'S
PACK

July 5 Prospect Gull Claims.

S# 870 → 877

105 F-10

+ acid volc. - w pitted quartz.

Δ 2 grayfol. Miss volc
- rusted pyrit. pits
- chlor. - slightly limy
- much of it gaps.

S# 870 R

+ 871 L

3

4

5 Diabase like flt.

6 funny quartz - w serpentine

- quartz with pits
- gas? in calcite + quartz
porphyry

S# 874 L

7 Barite + talc in QUARTZ

S# 875 + Serp?

S#
10 876-
L

Dark
Vole w quartz veins
+ ga

+ looks Bx in places

S# 877

Same as 870

170

On top

- Kachika limy Phylolites

- in the creek
micaceous limy phyl.

along

July 7

Map for Arise Arise

A1 grey pitted travertine
- along creek bank
- prob. OCR

B2. along cat road
- chrt-arg. bx + shaly
+ minor wolk.
- appears to be OCR

mine Wopit

20 def chloritic acid wolk
- slightly pep. & limy
- slightly graph.
OCR 6x6

21. highly chloritic acid wolk - soft
- huge blocks limy
OCR 20x20

22 ~~25~~ 50 probably bedding as well
grey arg. - appears fairly simple
is no stream fault of folds
- contains lenses of
wolk. like pyritic material

23. acid wolk - hard except for
graphitic stringers - w grey-bron.

vague slates
15
170
OCR 20x40

#1
 Δ3 BL 38 W ← * duplicate
 BL 00 S
 - high lead-zinc value
 - no OCR

gd re-sample # 879 L
 - green acid volc?
 in sample hole

#2 further east - obvious

sample hole
 S # 880 L
 - mostly bits of arg in hole

Δ4 granite from sample hole,
 fll

Δ5 Dark pyroclastic volc fll

Δ6 Granitic? fll

Δ7 Shaly arg along rd + volc.
 all fll

A. 8 coarse crystal. volc. fll

Δ9 blocky volc. fll - lots
 at 245 - 15 W

A10 at 10 W
 lg. round granules
 of chlor. volc.

A11 pyroclast volc.?
 at 5 W.

13 at BC 2 135 } continuing
 14 at BC 2 115 }

A15 at 2-16 7-W
 - possible OCR in fll

Δ16 at L 1B
13 W
- acid volc boulder flt

Δ17 at L16 16 W

Aug 9/76 Prospect Kossan
EROS E. of 7001
AF 12340-95

887R at P125
↳ limon con. Breccia

888 at P138
↳ lim con. Breccia
S# 881 → 894

Aug 10

- Stake EROS
on above ground.

BK 1500 N

00E ✓
Z ✓
4 ✓

0 at 1800

0 at 3000

0 at 4200

0 at 5000

Aug 12

Map BNOB

Δ1 GRAN PYR FOL ACID VOLC.

70
80 - slightly Barite?

Δ2. Dm - BRN PYROCLASTIC VOLC.

- FOL IN PLACES.

74
100

~ 20' WIDE

Δ3 BLOCKY ANG BASIC VOLC.

- DIKE?

Δ5

15
40

acid volc overlain by dike

~~Δ6~~ Ba

Δ7 Ba lead ~ 30" thick

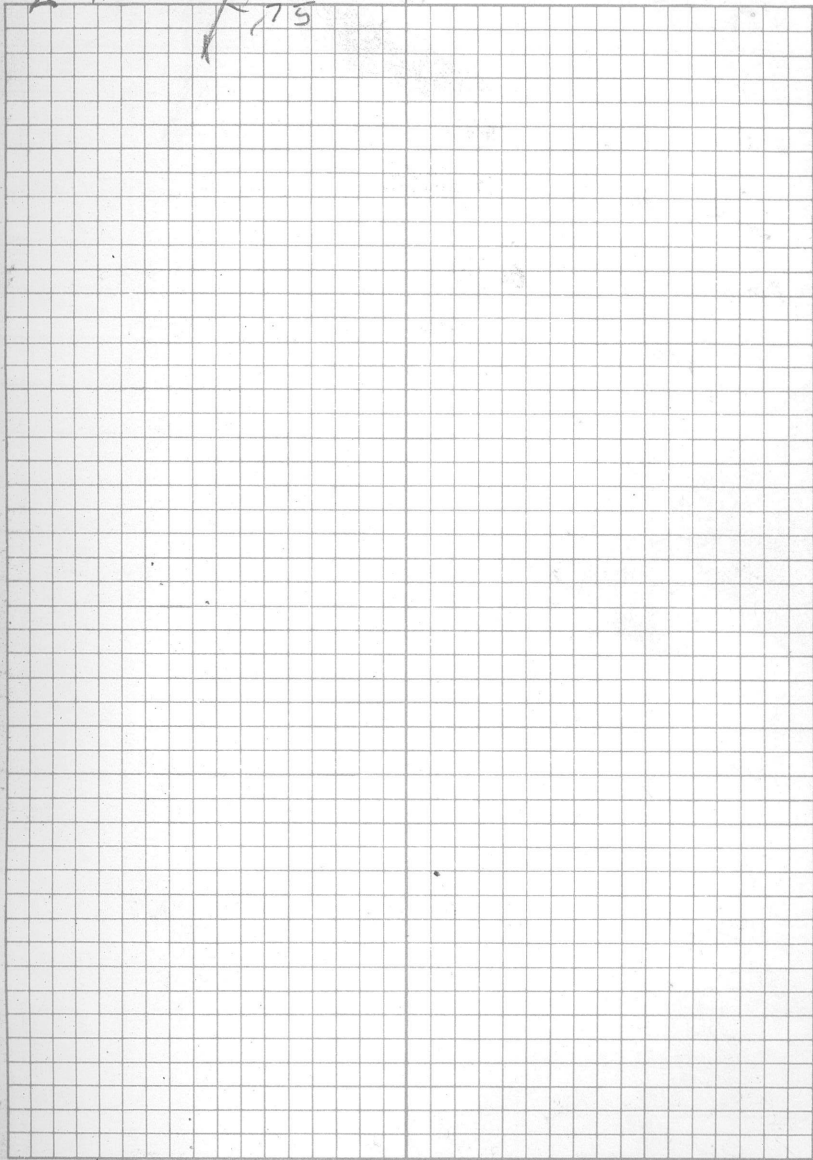
50
1

50 approx

paral. down to 60°

A 1.0

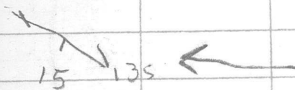
150
75



MAR

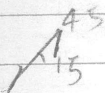
CH2 ERPNUGIT

- $\Delta 1$ fol. acid volc - slight
 - some purple blotches
 - in places looks tuft.
 perhaps slightly slumped



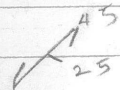
$\Delta 2$ at 20N 48W

- same - high part band
 - quite tuft looking

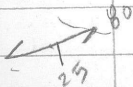


$\Delta 3$ 20N 50W

- same - less fol - more blocky
 & fract.

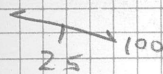


$\Delta 4$ on ridge fol
 - acid pyg cht-clast
 volc

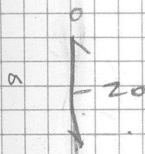


$\Delta 5$ Bright red w/ ^{pyr.} grey chert.

- $\Delta 6$ Extreme def fol. extreme cat
 lony purple-grey volc.
 - in a few places slightly
 blocky - in these
 areas looks much like



$\Delta 1 - 3$



- pyritic bands in places

$\Delta 7$ Green chlor. blocky volc.

- pyritic in places
 - also with fluorite
 - perhaps just under version

of $\Delta 6$
 i.e. volc is green or slightly shiny
 blocky - and before def - becomes
 grey-purple shiny fol after def w
 bands of pyr.

Δ 8 Interbedded chert & volcanic tuff
purple & green.

116

gd. local brecciating

9 lining intrusions

11 Blocky volcanic 505
- with places that appear
pyro-cherty-acid volcanic
nearby.

12 Blocky angular volcanic
- like 11?

Aug 17

14 very blocky angular volcanic
- very matrix with
pyro nodules

Δ 15 at 20 N 60 W

distinct contact between pyro volcanic chert
unit & green-grey volcanic
in fct.

16 near water chert ends - banded
chert.

17 float - similar to chert-tuff

18 volcanic - similar to 11,
in places blocky
in places well fol.

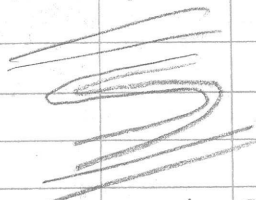
30
170

19 Pyro cherty volcanic

20 very acid volcanic

- 21 Entailed silts, sand & chert?
 - appears isochlor folds
 - on some beds.

35
 166



22. Pyr. Chert - shale unit - at ?

- 23 grey-green shale, overlying
 pyr. chert. unit.

- 24 also overlies 22
 - blocky ang - like?
 - very long.

- 25 at 52w 38w
 - sh quite acid & pyr.
 - strong fol.

22
 160

27 is this same

at 24

- 28 pyr. chert shale

29

10
 25

same grey green limy
 fol shale. overlies
 chert unit

27

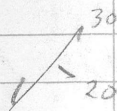
10
 20

green shale
 - fol in places
 sim to 21

at 44

29

30 at



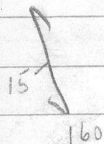
3l. acid v. like #1

at 32, 17

31

v. sim to #1

fol - Bx appearing in places

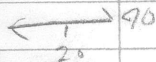


at 28, 14

32

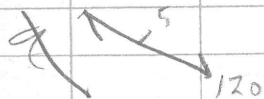
Same - acid p. v. v. l.

gd.



at 28 R

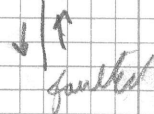
33



highly chlor. waxy
looking matrix
with ch. pbbles
9 clasts
- band of yellow
weathering p. v. l.

34 ch. m. unit

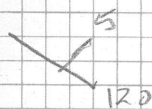
NE ←



appears to be

dipping slightly N

35



gd - overlying
v. l.

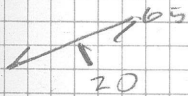
- chlor. waxy looking

where blocky + ang.

36

Same

at 20, 8



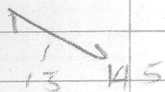
- thin band p. v. l. ch. compared here.

37

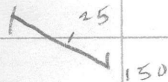
p. v. l. (ch.?) - massive
p. v. l.

38

typical overlying volc.



39 at peak.

typical lining
overlying volc.

40

Rocky acid pop. volc.

41

"

42

"

43

20, 25
pop. acid volc.

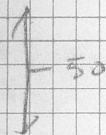
44

underlying the ^{pop.} volc.

45

48

acid volc.



at 20-26

49

at 39-21

- avg blocky volc.
- #1

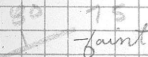
50

at Same
40-21

avg 19

Map ANISE

A1



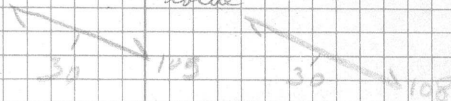
OCR

GRY

10x10

ARG

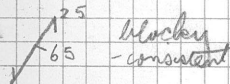
- well consol.



OCR

10x10

A2

blocky
- consistent

acid volc. - white - grey

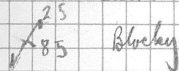
OCR 10x10

A3

OCR? - 3x3 ACID VOLC - BLOCKY, HARD
WHITE - GREY WEATH, waxy
Same as 2?

A4

Same OCR 10x10

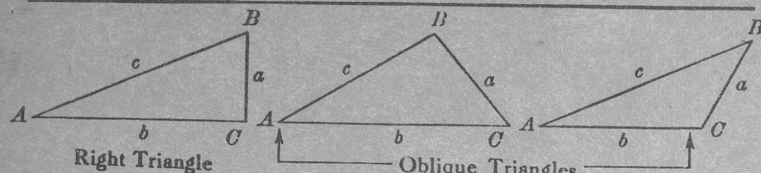


Blocky

acid volc. - waxy
- chert absent

- A5 OCR 12x50 No 1 Blocky-ang. acid volc
 sim. to 2-4 - slightly waxy + chlor.; w grey
- A6 SUB OCR OR TRANS? VOLC SIM to previous
 - slightly more chlor
- A7 sim. black ang volc - brown - finer
 grain - frag. in places -
- A8 sim volc to 2-6 - chlor OCR 4x4
- A9 75 125 Blocky acid volc - white
 75 OCR 30x40 waxy - slightly
 micaceous
- A10 same volc in min creek bed - grey OCR 10x60
- A11 "more acid - more fol. OCR 10x20
- A12 " " OCR 10x20 very liny + micaceous
- A13 40 45 GRCY ARG OCR 16x15
 faulted + minor folats
 + quartz veins
- A14 very lg def. volc - micaceous soft
 OCR? 2 OCR 6x6
15. SAs acid volc - blocky, def., chloritic, Bx
 in places, slickenside gouges \nearrow 20/25 OCR 10x50
- 16 Blocky very liny acid volc OCR 6x6
17. Chty - ARG with white springers - Sree only
- 18 Bocran Chty volc - in pipe veinlets - Bx + cemented + Cal.
 - OCR or lg scale fol? 30x4 20x40
19. basic brittle black slightly liny volc 40x40
 slightly graphitic on
 fracture

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\operatorname{cosec} = \frac{c}{a}$

Given
a, b

Required
A, B, c

$$\tan A = \frac{a}{b} = \cot B, c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$$

a, c

A, B, b

$$\sin A = \frac{a}{c} = \cos B, b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$$

A, a

B, b, c

$$B = 90^\circ - A, b = a \cot A, c = \frac{a}{\sin A}$$

A, b

B, a, c

$$B = 90^\circ - A, a = b \tan A, c = \frac{b}{\cos A}$$

A, c

B, a, b

$$B = 90^\circ - A, a = c \sin A, b = c \cos A$$

Solution of Oblique Triangles

Given
A, B, a

Required
b, c, C

$$b = \frac{a \sin B}{\sin A}, C = 180^\circ - (A + B), c = \frac{a \sin C}{\sin A}$$

A, a, b

B, c, C

$$\sin B = \frac{b \sin A}{a}, C = 180^\circ - (A + B), c = \frac{a \sin C}{\sin A}$$

a, b, C

A, B, c

$$A + B = 180^\circ - C, \tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$$

$$c = \frac{a \sin C}{\sin A}$$

a, b, c

A, B, C

$$s = \frac{a + b + c}{2}, \sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$$

$$\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}, C = 180^\circ - (A + B)$$

a, b, c

Area

$$s = \frac{a + b + c}{2}, \text{area} = \sqrt{s(s - a)(s - b)(s - c)}$$

A, b, c

Area

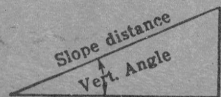
$$\text{area} = \frac{bc \sin A}{2}$$

A, B, C, a

Area

$$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance - 319.4 ft. Vert. angle - $5^\circ 10'$. From Table, Page IX. $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft.

Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. $\cos 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is approximately: - the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.