021179 ①

EXPO DD CORE SEPT. 03/91

Searching for "QFP" and recording alter types

DDH 190/191 - SW of Hushamu LK ~200'

DDH E190

80-85.5 "QFP" - looks sugary-granular perv silicified ? anything with pale buff-tan f.g. sericite (Phyllic) Py-Sc altn

Box 39 176.6-179.7 dyke QFP' - v.s. cs xl like magnetite 10-30% of rock ± hem, wk sulphides mag + chl + CO3 (orange limonite). intense f.g. mag dust throughout

OK — composite qtz grnuths into cs eyes & feeds inclusions to plag laths clustered & separate, seriate, some to 1/4" long

Could qtz eyes be amygdales? in bs. Plag looks calcic

v. intense Fe oxide + chl altn QFP - OK qtz amygdales?

DDH EC191 RESORBED Qtz — hydrothermal NO

'QFP' 105.4-108.7 — granular f-g qtz-clay felts intergrnuths & many qtz veins, patches

Origin? looks like phyllic altn again py wk ~1%

St. silicification.

" 218.7-221.4 — v. ok olive + mag altd what? py ← chl. feels laths look calcic qtz eyes are poss. elongate & composite

pos Good sample QFP Box 39 'QFP' OK but could it be basalt? & qtz amygdales?

v. dk perv. olive drab Orange-weathered feels = calcic?

283-291 box >283 - looks perv. f-g silica >> clay/feeds. rel. wk

St. phyllic altn, f-g py seams to 2"

Some mag in fract + hem source?

Comment:

both 190/191 — IF QFP (a 'felsic' rock) - why so intense magnetite

mainly phyllic

PT1150

INTRUSIVE CONTACT @386!

EC82

'Chilled margin' @340 in logs. NOT SO CHILLED QTZ DIORITE & banded 1" aplitic margin against hfls C/A = 48°

OK salt & pepper texture is evident qtz diorite patch pass & f.g. biot/trem/chl altd xenolith.

OK ~340 Contact zone @ EOH (500') mg ΠIC qdi

@500' blocky 3-4mm plag in granular qtz matrix

mafics ← chl, py, tr cpy, trem, mag

+ late zeolite (pink-white) veining

Rock is II - not typ. phaneritic qtz dio, plag phyric "qdi"

Note in hfls
bleached albite trem-mag vein cuts hfls more ΠIC

Sample A91AP-18/1-84 DDH 82 @500! - plag ΠIC qtz diorite

Contact may be dio finger into fractd hfls, but close to contact OK. sulphides → mafics 2/0, mag resp. - trace.

above contact is f.g. biotite felted 2° dkn black biotite hfls

Sample A91AP18/1-84@ - DDH 82 @331' Some retrochlorite is evident as pervs. after biotite (in matrix)

Sulphides nil to tr, magnetic response mod/strong.

Comment: note true hfls on top of deeper qtz diorite hfls not mingd! but ΠIC qtz diorite is this is mineralized/mineralizing Π!

Random observation:

DDH EC73 @ 345' is leucocratic (phyllic + chlorite → mafics) pyrite + cpy mg ΠIC qtz diorite

SEPT 03/91 EXPO DD CORE.

QUICK LOOK @

DDH 86 (top of Macintosh Ridge)

Quartz breccia @ surface - ruggy, supergene clay altn + limonitic replacement silica is rebxd to form qtz clasts of various sizes.

Sample 91AP-18/2-85 — DDH 86 - 012.1' Quartz bx ruggy clay altn rock (12' OB)

Intensely v.f.g pyritic clay altn & indistinct grey watery quartz veins throughout hole - some patchy "silica bx" & clay

Sample 91AP-18/2-85a - DDH 86 - 598

then @ 677' fairly contact @ clay gouge into pyrophyllite mottled pinn-buff & patchy sucrosic - some black grains (check 'enargite' etc.)

Sample 91AP-18/2-85b - DDH 86 687 "Mottled bx"

QUICK LOOK @ EC 88

AP-hole is all in clay altn "Bonanza volcanics"

note f-granular qtz-clay-sericite intergrowths & qtz veining. Qtz vns are rbbmnd & altn envelopes (of what?) bleached white feldspars = kaolinite

main pervasive altn is sericite with v.f.g diss pyrite

Sample 91AP-18/3-86 - DDH EC 88 - 534'

QUICK LOOK Here is QFP!

@ EC 189 - 517 (EOH) and higher

Salmon pink matrix, white felds green altd hbde

50% matrix 50% phens to 3mm - 25% plag 15% mafics 5% qtz

Sample 91AP-18/4-87 - DDH EC 189 - 517 (EOH)

DDH 179 { 387-454 QFP logged
708-722 No way!

DDH 179

710 - 712 clay gouge fault no core

pyroph/bx — to 708 mottled gy
>712 " bx cont'd

Quick Look @ EC 179

from Log

"QFP" 387-454, 708-722

AP - 710-712 clay gouge fault zone - no core, no sample, gouge

to 708 and >712 mottled, pink-grey pyroph-silica rock.

Quick Look @ EC 178

see Keith Mountjoy's notes

[9LAP-18/5-81a] - EC 178-335'

F.P. + qtz eyes - phenos composite, resorbed or amygdales?

Is this "QFP" or Bv flow ??

See 15.5'–266 in 1993 logging

EXPO Core Sept 04/91 (Note: this must be 1993 EC 154 extension (there is lots of core from surface to 266' – stored inside shed @ mine).

'Trav. #19', #88

DDH EC 154 on TOP of Mt MacIntosh ridge – S end

93 Update → box1 Lots of overburden to ~266] NO! THIS IS STORED INSIDE & the hole was extended (see below) – 1993 ext

box1 ≥266 pale grey, homogeneous f-granular buff to grey v-f-g diss py clay alt'd f-g andesite

1 Gamble Py on fractures, little quartz except dis f-g rock constituent

box4 clay ~285 hard >285 grey-pink mottling starting (local)

V. Similar boxes – good core recovery V. CONSISTENT CORE APPEARANCE.

f-granular, local (wk overall) grey indistinct qtz "veins" (seams) wk pyrite diss + small patches throughout

looks phyllic ± kaol type perv. altn

box 9 Sample 91AP-191-88 – DDH 154 – 1036

~1050 starting to look greyer, more perv. silicified or less clay more sericite?

@ 1092 black f-granular intergrowth of pyrite Check Enargite

Enargite? sample

91AP191-88a – DDH EC 154–1092 Enargite?

etc CONSISTENT

v-f-g buff/tan → chalky patches clay/sericite ± ~5% v-f-g diss py, rare py patches, vns

~1170'

box17 silicification overall weak, vns rare

≥1200' sl. more broken core, sos pyrite ~ 8–10% (py increases down hole)

relict clasts? in overall homog. f-g matrix

~1260

patchiness starts – in part altn/Py patchy replacement but prob. reflects clasts (bx bags in lapilli tuff / flow bx?)

definite (lapilli)-crs tuff → ash tuff ~ 1297

~1305–

olive colour alt'd? welded ash or flow? aphanitic matrix ± 15% 1 mm lenses lithics

Sample Δ91AP19/1-88b - EC154-1284' typ. clay actn
> 1350 crusted clay actn zones start in short intervals
old amphibole looks sericitic (flaky)
patchy greyness here (vs tan above)
but feels grains are white & grey this matrix in detail
crusted patches
~1435 core breaks in more splintery, smaller pieces
pro'found Δ in actn ~ 1430'
to biotite ± wk magnetite hfls white ± sericite noticeable in fractures, veins
poss wk chlorite locally
~1480 py v. f-g diss 2-3% how about cpy? increase?
↳ Δ marked by gypsum veining, still sericite actn
typ vein Sample Δ91AP19/1-88c
then ~ Δ91AP19/1-88c - EC154-1481
and biotite hfls > ~ 1430 Check this could be mainly sericite & f-g. magnetite ± biotite [any andalusite?]
eg Δ91AP19/1-88d - EC154-1447.5 - magnetite > biotite
no "felted" looks of later biotite
v f-g. py (cpy?) & fg magnetite + sericite - pyrite drops off to 1-2%
EOH 1486 lots a gyp (anhydrite) fracture coatings + veins (expanded tracks but no power chip cleavage).
Total hole consistency in alt'n - pyritic clay ± sericite?
to end and then "biotite"? magnetite + sericite.
lithologies BV - f-g andesite ± bx, tuff patches
overall prob v. consistent.

RANDOM OBSERVATN, NOTES FROM STRIP LOGS

EC 192 032' - Supergene clay altd leached - poss BV.'
842 - base EOH chl altd mg dior
* between?

D. Pavlick logs (SEE AP LOG)

NW End holes

DDH 21 - Lithology L152 -45° 245901 229845 el 1070±

(Plot) 1968 ~120'-2' diorite? And tuffs 22-184
Diabasic " " (dioritic) 184-227
Andesitic lavs 227-346
Tic and 346-365
} ∅ Epidote outside py halo

DDH 22

OB 0-33 3-80 altd andesite
(Cross) 68 80-89 ? dioritic andesite.

DDH EC 136

Comments: 1. OUCH!
2. Str. phyllic altn above flt w/ propylite below
3) diorite ⊓ dykes

H.m. 87 0-13 OB
13-142.5 v. altd (?)
flt 310-350
142.5-151.5 m.g dio ⊓
alt, faulted
850-433 altd volc w/ prp
433-471 mix ∅ altd diorite?
471-497 EOH mg diorite? w/ altd.

EC 163 20-617 Andesite f.g. med-dark grey
mod silic, blotchy chl altn
multiple ∅ Vns - qz sulph
qz barren
qz-CO3

EC 67

DNL 71 11-544 Andesite tuff

Random look at strip logs

NW corner

EC 62

all chl-mag zone (part of SCC)

28-151 grn-grey sauss, chl mod mag wk-m silic andesite
low sulphide, no cpy

EC 116

32-382 dk grn → black chl mag chl sc (SCC) altd lapilli tuff
mag 10% ± py, cpy

382-798 "HORNFELS"

biotite > 400' pale grn hard, dense bio mod. chl-mg, ch-sc (SCC)
altd f-g volc v. pyritic wk epi (retro) mag 15%
white
note feldspar laths prob. phenos in TIC bs

Comments: the hfls is prob TIC flow
hbld chl-mag grns to biotite ~400'

EC 159 0-40 OB

EOH 88
- 40-100 andesite π (QFP) phenos ≤ 5mm (15-20%)
- 100-191 Andesite f-g, grn-grey beady TIC (flow?)
- 191-333 BX mod-high silic
- 334-344 QFP ≤ mm phenos
- 344-875.5 Andesites: Tuffs, f-g → lapilli variable silic-ct
- 875.5-900 gdiorite

EC 192 ~32 - leached Bx? 84% mg d.o.

Furthest SE hole. -90, 877'

D Pawluk Log 9.75 - 80.44 Andesite Tuff, also 82.06 - 92.3

80.44 - 82.06 Late QFP dyke

92.3 - 93.3 Quartzite 99% qtz discrete lower contact 52°

93.3 - possible QFP dyke, Her Somewhat ↑ to

Prob QFP

114.84 - 115.26 possible early QFP intense waxy olive alt.

126.3 - 137.6 QFP (Late dyke)

137.6 - 175.7 Equiv? QFP

175.7 - 178 Siliceous tuff (?) silic qtz lower contact healed fx & QFP frags.

178.1 - 180.9 QFP

194. - 197 QFP ← silic tuff (?)

197 - 210 ← (97% qtz)

210 - 215 QFP

215 - Silic andesite bx (?) granular texture looks like QFP locally

etc

AP Says: Top is leached, bottom is Mg dis (= "QFP")

Samples 91AP-11/2-89 - 004 EC 192 - 32'

Surface leached, Kaolinitic Lg volc Bonanza?

or strongly hydr altd qtz diorite?

91AP-11/2-89Q near EOH 004 EC 192 - 842'

m-g chl altd mafic phaneritic idiomorphic-granular

granodio / qtz diorite

AP working from EOH upward

~786 crushed zones & str clay gouge/shear seams

altn is mag → mafics ± chl v. dk gm Lapis blue/gm "splotches" to 1cm

rare equant □ white plag phenos 1-5 to 7 mm

(cont'd)

EC192 cont'd (upward)

~700 patchy, wipe-out zones and ⊄ qtz ms + bx/gouge zones.

also ~700

matrix is more obvious as aphanitic qtz ose ⊄ plag laths + chl altd mafics

eg @ 696' - is this a sl. altd salmon pink π? type.

Sample 91AP-19/2-89b | EC 192-696'

border phase π?

higher matrix is aphanitic, grey silicons + sericit altd?

eg @ 646'

Sample 91AP-19/2-89c | EC 192-646

border phase (Qtz feldspar porphyry) Qtz diorite.

passing up through wavy zone (monomictic?)

with increasing grey patchiness, coarse patches give pseudo granitic texture

original rock? probably qtz ose diorite

by ~535

then increasing ng granular textures ⊄ relict mafic shapes nmx py + sericite ⊄ SCC altd plag

matrix aphanitic - altd salmon pink π type.

Sample 91AP-19/2-89d - EC 192-502

sos

737 to 402 intense milled bx v.s silicification + clay (gouge) zones. fractd / bx zone

then back into SC spotted "diorite" textures

Sample 91AP-19/2-89e | EC 192-382

then ~330

v.s. pyrite fan 'bleached' texture SC/phyllic altd

orig dk-ll (qtz ose) diorite

eg @ 302 - v. massive core ⊄ good recovery

@ 226' + banded pyritic layered x/l tuff beds

Contd → pg. 6.

Quick/
Random observation

EC112 —
Log OB 102
102-141 Qtz sc bx
141-173 dk grey grn chl mag ± sc hyalitic ("QFP")
"Monzonite" QFP?
173-208 hybrid QFP
208-290 chl-sc-mag-py altd QFP
290-460 monzonite (?) wkly altd QFP.
Sample | 91AP 10/3-90 EC112 - 520 (near EOH)..

From p. 5.
→ EC192 below 30' cont'd
6" ½" banded xl tuffs @ 18° to C.A.
@ 227 also bx clasts - all intensly altd
phyllic zone with bx below it
Sample 91AP-10/2-89f EC192-127
to top
pretty nebulous tuffs & increasingly strong
supergene (leached) clay (kaolinite) zone
at surface
fe # 89

End day

Bottom EC189
Salmon pink tt "QFP" for the whole hole
grn and tuff lbx at top

Phone

~~Sample bags for core~~

Compressed Logs.

DDH EC103 1103'TD collar elev 1123.3 Incln/Bear -65/180. Coords 246,823N 233423E

Alt'n	depth	FeS2%	Ore Mineralogy	L/Hology	Comments
				OB - 232	
Qtz	start/eof/with	232 - 300 (5-10%)		232 - 317.	
Ser.	strong 380, 700, 810. 1010-1050. weak throughout.			Andesite 317 - 431.	
Clay/Prop	strong 408	300-680 (3-5%)	500-550. qtz-cpy veins.	Stockwork Bx. 317 - 1103 (EOH)	
	weak 560-580, 720-730			QFP	
Chlorite.	weak. 232-640	680-740 (10-25%)	550-620 cpy-py		
	mod. 640-820				
	weak 890-1060	740-EOH <5%)			
Zeo.	weak 1040 - EOH.		740 py (in fract?)		
pyx	weak. 232-640				
Amph	weak 470-640.				

EC171 954' TD collar elev 1185 -90° 246518N 232820E

Qtz	mod	45-270	22-100 (4%)		0-22 OB
	wk.	300-340.			22-110 Bx.
	mod	440-500	100-270 (2%)	110-770 cpy vnlts +py +/- mag.	110-260 Bv
	str.	500-550.	270-300 (3%)		260-270 Bx
Clay/Prop	mod	22-170.	300-350 (2%)		270-300 ? py(?)
	wk	205-215			300-340 Bv
	str	260-265	350-440 (4%)	250-350 bn.?	340-350 Bx
	str	340-350.			350-440 Bv
	wk	420-500	440-615 (2%)	550-605 cpy + bn(?) qtz-cpy+/-bn vns	440-470
Chl.	mod.	22-80			470-490 dyke
	str	80-90	615-EOH (1-3%)	730-EOH bn +/-	490-500 ?
	mod	170-170			500-540 ?
	wk.	170-210			540-555? Bv
	str.	240-260			555-620 xtal tuff
	mod	350-500			620-625 ?
	mod.	550-EOH			625-710 Bv Xtal tuff
Scc	mod	22-80			710-715 dyke
	str	80-90			715-EOH Bv
	same as chl				
Zeo.	wk	220-735			

Altn	Depths	FeS_2	Ore Mins	Lith.
EC180.	TD 1560'	-90	1940 collar elev	24545ON 23241BE.

Qtz str 4-20
mod-str 40-510.
str 510-670.
str 680-720
" 735-730.
" 760-880
" 920-1020
mod 1020-1110
wk 1110-EOH

mod 20-40
wk 40-225
str 225-235
wk 225-460.
str 460-470
wk 470-EOH

(-3%).
4=EOH

ser. ←

Clay/prop mod 20-40.
wk 40-120
str 120.
wk 120-260
str 260
wk 260-900
mod 920-1060
wk 1200

chl mod 1060-EOH
Ep wk 1060-EOH.

bn, cpy.
950-EOH

inbetween sil bx.

0-4' Casing
4-21 sil bx
21-29 QFP.
29-36 sil bx
36-40 QFP
40-224.5 sil bx
225-236 QFP
236-518 sil bx.
518-560 Late Congl bx
560-563 Qtz ϕ.
565-579 - Lt Congl bx
671-681. QFP
724-728 Fsp ϕ
730-749 QFP.
755-757 QFP.
888-925 QFP.
1028-1085 Siliceous And.
1085-EOH And; And Bx.

Alter. Depth. FeS_2 %. Collar elev Ore Min. Lith.

DDH EC 179 TD 1627' 1940' -57°/360° 245 450N 232418E

0-10' casing

Qtz mod 10-385
str 220-225.
mod 445-1120.
wk 1120-EOH

Ser. mod 385-445
str 480-485
str 520.
wk 520-700
mod 700-720.
wk 720-EOH.

Clay/Prop. str. 10-385
str 445-480
str 485-520
str 525-1120
wk 1120-EOH

Bt mod 940-990

Chl. str. 1090-1095
mod 1100-EOH.

10-385
(1-3%)

385-445
(6%)

445-475
(4%)

475-800
(1-3%)

800-1240
(>3%)

1240-1300
(3-5%)

1300-EOH
(<3%).

800'
cpy+ bn+.

high grades
in siliceous pyroph tuff

454-708
might be
blot zone

10-387
Siliceous Pyroph bx.

387-454 QFP.

454-708'
Siliceous pyroph bx

708-722 QFP.

722-1102
Siliceous Pyroph T.

1102-1112.
1 And T.

1129-1242
And. Bx.

1129-1246.5

1246.5-1627 EOH
And Bx.
→ T.

NITE 235. greywacke.
83.4. Conglomerate.

~~Altn~~ Depth FeS_2% Ore Mins Lith Coordinates

EC177 TD 905' Collar elev 1301' Incln -60 Bear 180. 247991N 230437E.

0-20 Casing

20-905 And bx.

Qtz wk 20-80 1-2%

Str 80 top

wk 80-EOH 1-2 bottom

800' - flow? porphyritic tex.

Biot mod 160?-200

Chl ~~mod~~ 20-EOH

Ep mod 20-EOH

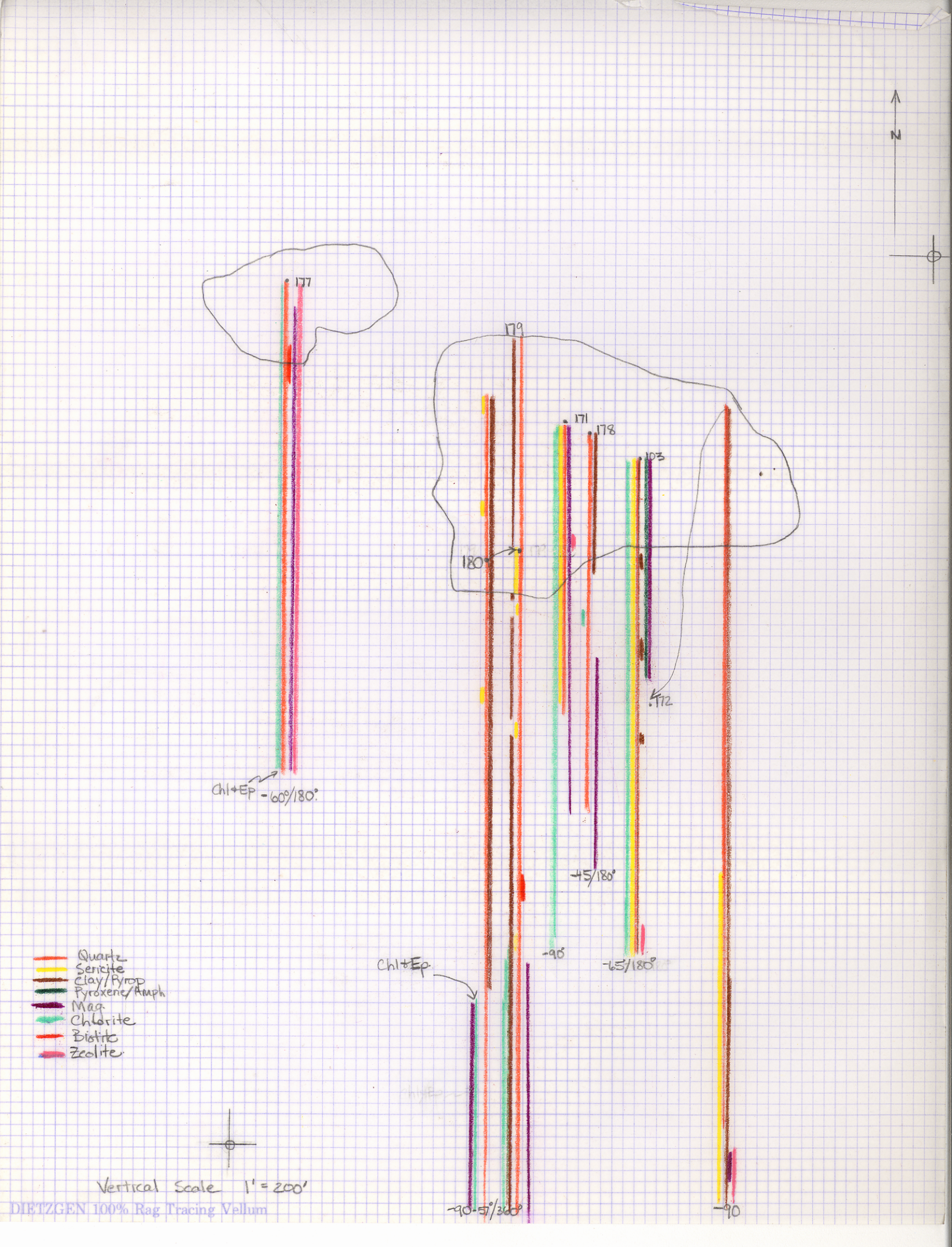
Zeo ~~wk~~ 20-EOH.

EC178 TD 794' -45°/180 246458N 233013E.

0-10' casing.

Qtz	wk 10-350.	10-130 (<1)	10-340 py	10-314	
	mod 350-710		340 cpy, bn.	Sil. Pyroph bx	
	mod 710-EOH	130-160 (5-10%)	360 cpy, bn on py frac	314-318 c. bx.	
Ser.	mod 340-360	160-446 (1-3%)	420 bn	318-329.	
Clay/Prop	wk 10-120		460 cpy, bn.	~~And~~ porph QFP w/ chilling of phenos.	
	mod 120-280.	440-720 (3-5%)	520 cpy, bn		
Chl.	mod 340-350	720-EOH (6-10%)	570 py in frac.	329-351	
Alb.	wk 10-120		590 hairline bn vnlts	coarse bx	
	wk 290-310		610 py	351-719	
~~Cc~~	Str. 360.		680 py	sil bx.	
			720-EOH py, cpy, bn.	719-EOH And	

Altn		Depths	FeS_2%	Ore Min	Lith.
DDH EC172		TD 1508'	collar elev 2086.6	-90	244140N 233544E.
					0-6' OB.
Qtz	str.	6-850	1-3%		6-853
	wk	850-EOH.	6-EOH		Qtz bx.
Ser.	mod	850-EOH.			853-887 pyroph bx
Clay/prop	wk	6-850		1050	887-1018 pyroph tuff
	mod	850-EOH.		py units	1018-1032 And tuff
Zeo.	mod	1400-EOH			1032-1068 Pyroph tuff
Iriot?	mod	@460			1068-1079 And T.
ALB	wk	6-850			1079-1114 Pyroph T.
SCC	str	200-300			1114-1150 And T.
	mod	300-420			1150-1157 Pyroph t.
					1157-1175 And T.
					1175-1193 Pyroph T
					1193-1377 And T.
					1377-EOH. And.



DIETZGEN 100% Rag Tracing Vellum