HRD 791 OCT 26 1990

oc of white to lt orangish grey leuco granitoid - med F-grained - graphic granite texture, ~6' wrapped in muscovite phyllonite

HRD 711 Oc of cg layered granulite " " "
(granulite gneiss ?, spl

HRD 652 Linville Ck in canoe. Oct 28 1990
with Rob
N30E 50 E cg bio gran gneiss with rounded - elongate leuco granitoid porphyroclasts strung out along Foliation - Cgl or Mylonite?

10

Granulite

HRD 621 stop 10 blocks
granulite 2 spls
several photos
some labled "11
just down From
Chandler Brothers
Marina (Blue Barge)
across From Marker
R 71

April 25, 1994 HRD 311 coarse bldrs of pyroxene Kspar granulite or Charnokite, well pres pyx some green uralitic amp.

HRD 321 bldrs red, weathered cellular surface texture, pitted, round pedlar like.
Rock is Pyroxene granulite (massive) partly altered typical red granular soils
HRD 322 spl of coarse pyx granulite as above

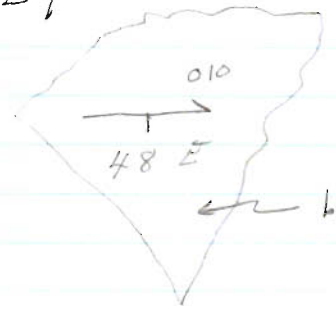
HRD 127 laminated phyllite with cleavage gentler than bedding

HRD 128 N45E 45 SE phyllite

HRD 129 N60E 65 SE laminated

HRD 123 122 lineation

HRD 124



Chilhouse Qzt.
beneath my locate

bedding surface?
(right way up [illegible])

March 17

HRD 131 6 spls of White qtz schist w/ ot Folds N45W 70 NE, Folds plunge S40E @20sv

WP 292 1/19/05 Waterfalls

Foliation // banding N50E 30SE

lineation S44E 28 coar

protomylonitic gneiss on porphyroc

mylonite gneiss (Horsepen Mtn Su

HRD 228 cg HBM gneiss OCS on

along flood plain Not much Folia

ledge - joints N60E 40SE

HRD 229 N31E 70SE cg gran gne

along road bank

HRD 2210 N50E 36SE lin S50E

coarse protomylonitic biotite gran

(Horsepen Mtn Suite

HRD 681 mylonite bio gn in ck, s
schistosity zone, vein qtz N 54
HRD 682 bio schist w/ very
Foliation N70E 72 SE paper thi
cleavage plates, coarse bio
flakes on fol. drawn ou
feldspar + qtz p-blasts
or p-clasts
HRD 683 N60E 56 SE stp textured
~ Bassett or Ashe - b-w to lt
bio schist interbeds between F-
bio gn layers, lots of drusy q
blders w/ impressions of carb
pyrite - good stream to
HRD 684 N60E 40 SE Bio sch/ve
HRD 685 N60E 45 SE coarse bio
+ flaser gneiss with downdip
lineation. S68E 36. Paperthin p
layers in creek with light co
stp psammitic beds, ust at
projected contact in Cree
apparent cobble beds or
beds

5-5-05

HRD 9610 ledges of flagg
bedded salt and pepper f
N80W 10 SW

HRD 9611 N60E 18SE photo of
gray slatey tuff in stream

HRD 9612 N 68E 20SE thi
layered C laminated meta tuf
in base of lgg section SPL
N 37°08.874' W079°95.748m

HRD 9613 abandant flaggy
layered biotite - hbd - gt
hbd (~ 5-10% mafic) gt ~ 5%
deep red almandine along st
between basement and Fe
tuff Ocs

HRD 9613 spl of laminated bi
meta tuff WP 412 3708 814
7945 724

HRD 9614 photo of pyroclas
Breccia in stream bed at

N60E 40SE schistose foliati
WP 413 37 08 767
79 45 677

HRD 9615 ledge of Felsitic gn
N 37 08 754
W 79 45 648

meta felsite and hbd bio gn
- gt in bio gn - fault

April 8 2005

HRD N 70W 50 SW 37 12 198
612 79.46.668

HRD 623 My gneiss layering in cg
p blastic bio granite gneiss - 37 12.024
79 46.504

37 1
HRD 624 75' cliffs loving st.
massive biotite gneiss
N 50E 35S

HRD 625 37° 11.903 79° 45.907 N 78E 70
course myl bio gn 80

HRD 633 med grained massive block jo
37 12 192 79 45 697 Jold N 40E 85S
Granulite gneiss N 43 W 80 N

HRD 64 ledges of F My granulite
gneiss 37 12 281 79 45.737

HRD 645 Med gr bio gn N 70 E 50

HRD 645 course augen gneiss with
strong bio foliation N 60E 50SE
37° 11.696' 79 45 510

HRD 382 photo of shore line along SML
in Red Clay residuam typical of Pyroxene
Granulite Gneiss - 4-8-05

April 11 '05 DUDLEY CREEK ESTATE

HRD 751 N 60E 60 SE layered myl
gn/sch in creek photos from
new culdesak in DCE subd.
at WP 358 37° 09 145 79° 50.956

4/11/05 wp 359 HRD 821
37° 09.610 79 48.612 coarse qtz
gravel + cobbles, gray pipe clay in
stream
HRD 822 N66E 65SE silvery. musc
phyllite sap in stream graphite
? at base of qtz td - photos @
37° 09.358' 79° 48.522'
HRD 851 mica gneiss saprolite
in stream bottom, gneiss block
float by spring house up
stream photo of Old Farmstead
37 09 131 79 48 410
HRD 831 37 09.582 79 48 056
cuttings from new well - bio-m
schist / with white Kspar
fragments (mylonite zone
or breccia?
HRD 832 N76E 70SE Bio/musc
schist w feld masses in drive
way cut just to sw of well

HRD 645 N 60E 65 SE mica

Apr. 11 05 Mr Fralins → Farm

HRD 671 New well cuttings in bio schist

HRD 672 Coarse layered bio augen gn with bio schist partings Sap in stream e37°10.150 79 47 .246

HRD 673 N60E 80 SE layered myl gn w/ muscovite bio schist partings in bottom o.f. stream N37° 10 160 W 79° 47 182 HRD 674 myl gneiss

HRD 675 N 64E 52 SE V cg augen gneiss feldspar p clasts ~1" elongate to form NE plunging lineation N80E 30° NE N 37° 10.023 W 79 47.136 1

HRD 676 next to pond Mica schist (Photo) N72E 50SE cronulation S2°W 40

HRD 677 N68E 50 SE musc-bio schist ocs as saprolite in road N 37 09 992 79 46 987

HRD 971 N40E 70 SE orang schist sap cut by yellow dike saprolite N10W vert N 37 09 798 79 47 133

HRD 972 brn mica clay sap 37 09 86 79 47 26 schistose foliation N60E 70SE

[illegible] 4 dark brown layered gneiss saprolite in stream bank — N 74 E 50 SE

Stream has extensive qtz cobble - bldr bed load probably reworked terrace

37 08 575 79 45 216

HRD 965 N 76 E 50-46 SE

brown - gray mica gn/schist in stream (Zlg

37 08 913 79 45 600

HRD 966 cg Fluser gneiss N 74 E [illegible]

lineation S 50 E 20

GPS 37 08 852 Photos

79 45 741

HRD 967 Bull qtz vein n sow [illegible] photos

HRD 968 Coarse bio gn Flt along trail

HRD 991 N 56 E 40 SE OCS

along dam abutment flaggy mylonitic bio gn vo god text

[illegible] 79 45 773

Mt Rogers Field Trip 10/11/03

Stop 1 GH1
36 37.505
81 30 441

Lithophysae 36 38 100
81 30 878

STA 3
Egnigma rock
36° 38-120
81 30 E12
S 62E to gate at
Massey gap

May 5, 2005

FRALEY FARM HARDY QUAD

HRD 678 N70E 50SE thin cleaved Mica schist/gneiss ledge along stream

HRD 679 N48E 50SE mylonitic blo+hbd gneiss w/ concordant qtz stringers Pelsic stringers w/ concentration of hbds

HRD 6-7-10 N 50E 34 mylonitic foliation in b+w bio augen gneiss ledges along driveway

HRD 6-9-11 hbd gneiss (cg leucocratic mtx) Float on road above strm oc of dk schistose phyllonite saprolite N60E60SE

HRD 684 revisited hbd biotite gn w felsic partings - good moreto gneiss spl A mafic B Felsic

WP 409 37 10 179 79 46 579

N80E 34 SE Foliation

N60E 20 lineation some hbd

some Feldspar porphyroclasts

HRD 684 C spl of cg bio hbd sch/or mica gneiss with cataclastic (myl) fabric rotated pink garnets - 100' up stream at WP 410 37 10 168 79°46 580

HRD 684 D N80E 40 SE oriented spl of med stp bio gn

HRD 685 N50E 45 SE

S20E 40

rodded biotite gn

April 7 2005

HRD 693 N 50 E 50 SE mylonite schist in stream w 4" qtz stringers along foliation
N 37°10.372 W 79 45.727

HRD 694 S 60W 20 SW left-handed Z Folds in fine sandy textured mica gneiss/schist looks like metagrawacke 37 10.391 79 45.782

HRD 681 N60E 45 SE
Leathery Silver brown weathered schist saprolite on embankment - phyllonite or LyG? 37 10 438 79 45 821

HRD 695 N62E 40 SE mylonitic layering biotite / qtz-feldspar at CM scale ledges crossing stream below dam SPIs

HRD 682 N40E 45 SE very coarse grained biotite augen gneiss w K spar p-clasts up to 40 mm stretched out along mylonitic biotite foliation 37 10 643 79 45 881

HRD 684 N60E 40 SE large ledges of coarse grained black and white

April 7 05

HRD 696 N 38 E 60 SE cg myl augen
37 10 515 79 46 113

HRD 687 N 60 E 40 SE continuous
mylonitic layering in mylonite gneiss
btw med-cg p-clastic 37 10.472 N
HRD 688 N 60E 30 SE 79 46.150 W
phyllonitic gneiss
sap and rock in strong wit
much vein qtz N 37 10.393 W79° 46.131'
HRD 689 N40 E 30 SE Flaggy
layered biotite muscovite schist
to gneiss, Looks like meta sed, but
no text preserved but relation
37 10 232 79 46 113
HRD 5210 N 40 E 34 SE coarse
mylonitic gn w leucogranite
cobble sized p. clasts — Cgl?
37 10 133 79 46 030
across branch to SW is highly
layered or banded leuco gran
gneiss ? Bassett Gneiss -
HRD 921 N50E 60 SE Fine grained
L+W banded gneiss

3/14/02 Hard

HRD 252 A 100 m. e of 242

MF02-1 coarse pink

37 13.687

79 49.210

pic 10 (from old tape) Stewardsville

9 (from tilt end) MF-02-1

8 from east Bills sample. Steward.

Revisited HRD 252 37 13.679

79 49.294

coarse grained.

steeply dipping foliation

epidote filled fractures

common (were avoided)

veins very fine

grained relative

to the surrounding

granite + contain small

breccia

Dillonsmill

CLY 611

37° 04 . 477

80 02 . 452

MF-02-3

med grain 6+w granitoid gneiss

finer grained than Stewardsville

CLY 612 37 04 . 313

MF-02-04 80 02 . 453

bw med grained slightly Foliated biotite granitoid

DIETZGEN NO. 385-3

April 1 2005

HRD 337 gran gn float in road
338 " " " yard
339 WP 324 37° 14.767' 79° 45.581'
med gray med-cg granulite gneiss
N25E 60 SE layering - Found USGS
BM 990 on hill top next to road
1960 WP 325 37° 14 752 79 45 608
N20E 55 SE S 6E 50
HRD 340 WP 326 37 14.537
79 45 869
weathered med grained gray-greenish gray
gneiss in road embankment
N30E 70 SE
4/04/05 Med gr. dk greenish gry granulite
HRD 367 WP N37° 13 605 N 79 45 44
subtle layering N20W 40 SW
jointing
N10W 54 SW EW 64 S
HRD 368 NS 38 E layered Mg m granulite g
HRD 369 N60E 40 mylonite foliation S2
in med-cg gr gn
HRD 3610 massive med gr greenish gray
subtl layered granulite gn N40E 70 SE
HRD 3611 mass grn gn - subtlly layed
N60E 40 SE S1. leucgneiss blocks
along stream
HRD 3310 N 70E 50 SE med grained
leucogran gneiss, tiny specks of
mafic pux? blue qtz blebs
pinkish weathered kfeldspar

4/4 [illegible] S10W 70 SE

HRD 394 N80W 70SW joints in massive granulite gn S_2 is close to S80W 70SE

HRD 395 Med gr granulite cutting in new wall, deep blue gtz blebs, greenish K feldspar ppl

HRD 631 Coarse green and white pyroxene granulite gneiss N 70E vertical layering — S, N 37° 12 .064 W 79 45 015

HRD 632 Big Spring 15 gal min est WP 329 37° 11.990'W79° 45.016'
— Justin Moneta SW quad
N78E 70 SE ledge of Granulite gn ~ 30' below spring

4/05/05 HRD 286 WP 330 N 37° 12.774'W 79° 48.453
N54E 45 SE mylonitic foliation in coarse mylonitic granitoid gn
N30E 34 NE Lineation dk blue gtz p clasts, white K spar

August 16 '05 Explore Park
Trail from Rutrough Point up
River.

HRD 162 N40E 40 SE Fine grain mylonite
gneiss saprolite at old house site
now a deck above trail 136 el
37° 13.959' W 79° 50.569'

HRD 163 - Ledge of myl gn ~ 30' h
N 37° 14.122' W 79° 50.596' First
rapids - WP 434 River Cloudy
green an smells like
leachate - intolerable stink
N65E 20SE Mylonitic layering

HRD 134 (across river) WP 435
Mylonitic layering in coarse
gneiss N30E 15SE
N 37 14 232 79 50 684

HRD 164 WP 436 N 37° 13.863'
W 79° 50.705'
crossing Suburn Bike trail in wood
deep red clay w/ bldrs - old fd

HRD 165 WP 437 37 13 - 721 W 79 50 - 671
coarse [illegible]

8/16/05 cont'd

HRD 152 N 30 E 50 SE greenish
gray mylonite, mylonite gn
saprolite on trail - crossed
contact with coarse grgn
- soil looks like grn mg & gn
- [illegible] ch? WP 438 37 13 907
660 gps 79 50 892

HRD 166 N 60 E 60 SE ledge of
bro gn in stream crossing

HRD 111 E-W 70 S comp lay
coarse gt pyx gran gn WP 439
N 37 14 597
W 79 52 045 good fresh spl

March 29' 05 Hardy Quad Sunny, windy
HRD 254 GPS WP 297 37°13' 702
New Well el 968 79 48 470
on Old Station Road
coarse greenish gray granitoid gneiss
or protomylonite coarse Feld p-clasts
biotite Foliation wraps p-clasts
qtz ribbons along mylonitic folia
muscovite in Feldspar

HRD 2 2 12 WP 298 el 1090 GPS N37 14.213 W 79 43.65
Coarse granite gneiss massive
bldrs and whale backs below
dumpsters N 40 E 60 SE myl Folia
mineralized Fractures S 10 E 52 NE
Crossnore type (Stewartsville Crowell Gap Plutonic

HRD 261 N 60 E 45 SE lineation in bio
S 50 E 40 coars bio gneiss with mylonitic
Fabric - orange and black sap rocks
in road bank @ WP 299 37 13.682
79 79 47.765

HRD 262 N 52 E 35 SE @ wp 299+ 37°13.822
79°47.797
v cg bio gneiss or protomylonite
pervasive bio Foliation wide spaced joint
N 60 E 55 NW N 26 W 60° NE

Ø crenulation cleaw w/ muse
N 20 E 60 SE - cren lin on surface
S 40 E 30 SE plunging lin (Photo
of Pencil

HRD 342 massive bio granofels - hypidomorphic
granular to granoblastic texture

3/29/05

HRD 343 coarse bio augen gneiss
Strong schistosity N 24 W 80 SW
WP 301 37 14 069 79 47 232

HRD 344 deep red clay td w/ qtz
cobbles and bldrs @ 37° 14.026' 79° 46.988'

massive cg hypersthene granodiorite
on point - Horspen Mtn Charn-
N 10 E 70 SE myl - "Fracture cleavage"
in massive - harnokitic bio gn on
road to point

HRD 345 N 47 E 60 SE mylonitic foliation
biotite w/ qtz and elongate feldspar
augen ~ 5-10 mm sheung out on
foliation.

HRD 346 cliff face above lake developed
in coarse granofels - qtz (purplish)
K spar epidote - albite brown biotite
replacing pyx, Joints N S 60 E
good site for dim. N 84 E 64° S
stn quarry! N 80 W 50 NE
big blocks of granite 37 14 195

HRD 312 slide on hill slope Redax 5/1/05 79 47 321
[illegible] WP 301 37 14 193 79 47 424

3/29.

HRD 314 37° 14 .236' 79° 47 .296'

Coarse leucogranite gneiss N 76W 80SW

HRD 315 Boulder field at head of lake - coarse pyroxene granitoid or Pedlar Charnokite like rx in Horspen Mtn Pluton
N 37° 14.408 W 79° 47.335'
OC on slope joint N60W 60SW N50E 80SE

HRD 316 N80E 80SE joints in massive charokite WP 304 37° 14.502'
New baby calf + mom 79° 47.414

HRD 231 N50E 40 cg myl biogn on hill side evidence of fullwidth flood in flood plain below WP 305
37° 14.471
79 47.611

HRD 232 N30E 60SE cg biogranm
WP 306 37° 14.490' 79° 47.721'

HRD 233 N40E 60SE Strongly sheared metacharn gneiss

HRD 234 N 20E 75 SE dk mtx mylgn with many feldspar porphyroclasts
shear br

extremely fluid flow with dextral component
p clasts up to 30 mm

Good field stop! N 37 14 336
W 79 47.941

dk blk
shear bands folded
s in schistosity

HRD 235

3/31/05

HRD 351 coarse layered leucocratic granulite gn

N 40E 60 SE Gneissic Foliation

(myl) prominent mineral lineation (bio sts

N 70E 30 NE 11 37° 13.573' W 79 46.342

feldspar "rows

lineation on S2 S1 is granulitic layer

of relict pyx and feldspar with

rounded exsolution blebs of purple

(rutilated) quartz

HRD 352 N 70E 60 SE phe

of S1 layering in saprock grnish gr

stream bottom w later cross

cutting S2 Foliation 37 13 526 79 46 37

HRD 353 N 40E 50 SE Mylonitic

Foliation in med-coarse dk

greenish gray granulite gneiss

approaching grn mylonite

HRD 354 WP 310 37 13 440 79 46.209

new subdivision, septic tank in

red micaceous clay loam

3/31/05

HRD 318 ledge of med cg massive charn gn, deep red clay soil, mag float

HRD 319 spl of metacharnokite from bulldozed bldrs along fence 37°14.923' 79°47.076'

HRD 310 deep red brn mag rich soil, metacharnokite bldrs at point near old saw mill site 37°14.648, 79°47.344

HRD 236 ledges above creek — coarse grained sheared metacharnokite now a biotite myl gneiss or protomylonite N 26E 52SE
N 37°14.0106
W 79°47.513'

HRD 237 extremely sheared metacharnokite gneiss now bio augen — flaser gneiss N 60E 60SE @
N 37°14.844'
W 79°47.534' cliffs and shelter caves

HRD 238 N 60E 45SE cg myl augen gneiss — large ledges brown micaceous loam
N 37°14.951 W 79°47.49' subdivision UG

4/1/05

HRD 321 on Beverdam N 40E 70SE myl foliation in Green mylonitic gn 37°14.415
79°46.054
Photo of mylonite gneiss (grn), us — beyond fence line

HRD 322 N 70E 70SE, ic augen gn derived from massive charnokite

4/1/05 Beaverdam Crk Irev

HRD 331 N 40 E 70 SE Foliation and light/dark layering in med grained greenish gray - brn Granulite gneiss saprolite N 37° 14.247 W 79° 45.722

HRD 332 N 60 E vertical, leucocratic med grained granulite gneiss layer N 50 E 50 SE mylonitic foliation, heavy mineral concentrates on point bars seds ~ 15-20' thick N 37° 14.380' W 79° 45.678'

HRD 333 N 24 W 22 SE med gr leucocratic granulite layers in creek cleavage N60E lots of med gr bio granofels flt on banks and bars abd heavy min 37 14.441 79° 45.5[illegible]

HRD 334 Massive Ledges across stm N 37° 14.666' 79° 45.356 med grained granu[illegible] gneiss - btw + leuco (beighe layers)

HRD 335 N 30 E 80 SE Cliffs and ledges med-cg granulite gneiss, porphyroclasts broken and [illegible] strung out on mylonitic (S_2) foliation

Boones Mill 37 05 .451

7956644

BML 155

N60E 60SE biomusc schist/gneiss
mylonitic sap bed rock
ledges in valley
sping is in aluvial fan clay bldr
on top bldrs

WWW.VDH.state.VA.US
434 836 8416

Mike Painter P.E.

HRD1223 photos of cliffs - cg.
Sandy Creek Gr, debris along
river

HRD1224 N60E 32SE Fol
S70E 24SE lin
coarse mylonite or protomylonite
porphyroclastic 37 14.771 79 51.038

HRD1225 med - cg layered granulite
gneiss

HRD 1226 coarse terrace to turn - red
myl gn sap above photo of
17th cent fort on to N80E 70S

HRD 1227 N70E60SE layered mylonite
gneiss in stream 37°14 .418 79 51 193

May 1 05 HRD 347 N60E 60SE
Mylonitic Foliation in cg
pb biogn (Hmm
HRD 348, just beyond trestle
outcrops of massive
meta charnokite w/ qtz kspar
purple qtz pink grt, block
blocky pyx
HRD359 cg mylonitic hb mtn
gneiss qtz kspar plag - bio
N60E 50SE 37° 14,118 79° 47,032
HRD3-1-1 Coarse charnokite flt, brn
soil blocks + rnded blders
w/ very little Foliation to
Modcrate Foli. N10W 15SW
30m pbs on cleavage surface
HRD 3-1-2 N70E 60SE mylonitic
(Hmm)
HRD 3-1-3 Round chark blders in
stream bottom
HRD 3114 Oct cg hypidiomorphyic grain
pyroxene (hypersthene granodiorite)
very little or no Foliation.

Jan 19 '05

HRD 143 N 60 E vert joint in coarse bio gran gn Foliation N 45 E 35 SE

HRD 144 Vein or Inclusion of cg gran (leucocratic) in V cg porphyritic sheared protomylonitic biogranitoid N 60 E 50 SE joints S 40 E vert S 50 W 70 NW Need batteries GPS 37 13 976 79 49 225

WP 285

HRD 145 N 60 E 60 SE shear in granite pavement joints N 60 W 30 E vert

Not in HRD in STV

STV 771 N 80 E 50 SE myl Foliation in med-cg bio gran gneiss sap w/schist ptgs leucogran stringers Lineation plunging S 35 E 30 SE fold pbs in 5 mm WP 286 37 15 .07 79 49 .852

STV 772 N 40 E 40 SE good exp in new road cut [illegible] fresh ledge of layered biogranitoid Greenish gry 37 15 135 WP 288 79 49 968

STV 773 mylonite greenish gry phyllite N 30 E 40 SE

HRD 111 N 60 E 50 SE layering in myl gn greenish gray, clear N 20 W 20 SW [illegible] C-S ? greenmyl derived

1/19/05

HRD 221 N70E 40SE mylonitic foliati
wraps around large boudins of
leucogranulite = gri gry phyllonite and
mylonite gneiss el 958 N 37 14.710
WP 289 N 79 49.170

HRD 222 mylonite foliation in stream
bottom, large blocks of granulite
gneiss along banks N60E 35SE

HRD 223 mylonitic contact w coarse
pink - yellowish bio granitoid
N 54E 46 SE photos of large
bldrs, sap rock in stream
Horspen mtn (Suite)

HRD 224 coarse granitoid gn (HPM)
N 43E 20 foliation in large crossin
stem below new house
© WP290 ell 1002 N 37° 14.738' W 79° 48.201'

HRD 125 N40E 45SE comp layering in
Horspen Mtn Gneiss w/ stringers of
country rx, cg pb intrusive
37 14 7 39 79° 48.733'

HRD 226 N 40E 36 SE lg ledge

4/5/05 HRD 522 Photo of
Peaks of Otter From Linville Mtn at
WP(281)? sp 1 of dark grnish gray
charnokitic gneiss with rude
layering 37 12 522
79 49 0 8
HRD 283 N 37° 12.613 W 79 48 85
Massive charnokitic gneiss with
strong parting ll land surface
joints N 80 E 80 SE old borrow on
N 10 W 80 E quarry?
HRD 581 WP 334 37° 10.200 79° 08.690
N 40 E 70 E SE light tan to silvery
gray muscovite rich sch/gn
sap - photo of phyllonitic
st.
HRD 582 N 50 E 70 SE lineation S
Mr Hammond
HRD 583 photo of distillery
HRD 584 N 45 E 60 SE Myemite folia
in schistose saprolite, felspathic
gneiss blocks in creek bottom
WP 37 10 318 79 48 922
HRD 685 photo of mottled gray clay
in alluvium at N 37° 10.357 W 79 48.340
[illegible] and augen gneiss ledges

April 5

HRD 941 N60E 40 SE Biotite gneiss in stream bed

HRD 941 N10E 60 SE photo of bio mylonite schist sop 37 09 133 79 47 176

HRD 942 N70E 70 SE 37 09 79 47 124 bio granite gneiss/myl schist

HRD 943 N58E 58 SE Muscovite bio - saprolite - myl zone? in Stage Road layered gneiss 37 09 004 79 47 139

HRD 944 N68E 54 SE Flaser gneiss with cross cutting leucogranite dikes 2' wide N70E 60 SE dikes also [illegible] in stream bank

HRD 643 N60E 60 SE large ledge - 50' high of cg bio augen gneiss

HRD 644 N50E 60 SE interlayered mylonite gn & schist

Mileage 237 125
112

April 7 2005

STV 891 mylonitic shear zone in coarse bio and hbd granitoid (Stewartsville Pluton

April 21 05 Explore

HRD 128 contd coarse YSL bldrs now placed on new Road site.

HRD129 oc on bike trail cy mylonite gn N 35E 30SE 37 14.372 79 51.471 1117

HRD 1210sm OC along stream of coarse mylonitic leucogranulit N 30E 30SE Lineation S56E 26 37 14

HRD 1211 lg OC layered myl gn N 30 E 30 SE photo

HRD 1212 sm ledge cg augen gn/ flaser sch/gn inck photo N 60E 30 SE

HRD 1213 photo of myl ledge below bridge

HRD 1214 OC of green mylonite gneiss prominent lineation down dip

N 30E 30SE lineation S58E 26

April 21 2005

HRD 1216 ledge of impure quartzite / mgw forms small spur above drainage

37 14 549 79 51 391 - Reoccupation of HRD 124 spl location

HRD 1217 lineated meta siltsn

S 30E 40 SE cranulation down dip

Bedding (Transposed compositional layering light dark laminations in graphitic eds) N40E 43 SE

37 14 551 79 51 445

HRD 1218 Photo of green mg gn below bridge

N 80E 24 SE lineate

S58E 22 SE

HRD 1219 brown sludge in ck above pond below turing Trot trail

HRD 1220 N 56E 20 SE dk green mylonite Ocs at mouth of stream

Joints N 48E 85 nw N20W vert

37 14 736 79 51 113

HRD 1221 at edge of land Fill (MW 5)

37 14 876 79 51 -

Drill Hole 5

3/02/05 Boxley Core

top coarse mbd epidote rx
grades into coarse ep-act sch/w chl
with occasional epidosite &
hyaloclastic tops
Farther down son chl schist 3"
pt chl rich to about 300 then breccia
and then coarse metagrayke with
pyroclastic clasts
Amphibole asbestos veins at ~338

Weathered zone 75 - 78

green musn - slsn - 120 - 30

gray calc ss = walker mtn 166.6 - 167

169.11 burrowed contact

White ss / red msn

399.5 - 400 spl tan - gray micrite w gry

mus stringers

440 449 burowed light and dar gry l. mdr

strong slaty cleavage w/ calcite

stringers

April 12 2005

HRD 994 WP 373 37°08.115' 79°45.585
coarse hbd bio gn or amphibolite soil & flt
on hillside
HRD 995
coarse hbd gn/schist ocs on hillside
below qtz cobble td @ 37° 08.048
79 45.422
Big New House across crk
HRD 996 Deep dusky red terrace
capping hill w/qtz cobbles
photo @ WP 375 37°08.043', 79°45.15
HRD 997 photo of quartz-terrace
boulders piled in woods besides
Yld field nice poplar grove
37 08 123 79 45 125
HRD 998 barn found - coarse flaser gneiss
blocks lineated hbd gneiss in
cove to sw 37 08.271 79 45 182
HRD 9610 N80W 54 SE big ledge of
coarse flaser - augen gneiss along
stream bank @ 37 08 351 79 45 123
APRIL 21 FIELD TRIP SMU
STOP 1 WP 383 37 13 142
Ybg unit 79 48.527

New 4 37 12 095 Photo across from Chandler's
med granulite 79 46 386 Sandy ck
STOP 4 Cg granulite gn
Photos 37 12 885 79 46 53
Near horizontal my foliation
STOP 5 Td on point at
WP 387 37 11 974
79 46 224
STop 6 Med gr granulite gn in cove
at WP 390 37 12 195
79 45 707
STop 7 Mlonite gn on point
at edge of Red Valley Zone
37 11 325 79 45 160
STop 8 Phyllonite in Augen-Flaser
gneiss unit at WP 391
37 10 880
79 45 235 end
April 21 2005
Newbil Farm (Jonns Uncle)
HRD954 in golf cart w/ ms Newbil
examined old chimney, all local
augen and Flaser gneiss

HRD 771 N50E 85 NW greenish brown weathered mica schist in red soil 1m qtz vein

HRD 721 N65E 65 SE N35E 80 SE $S_1 X S_2$ S_1 has strong compositional bands developed in porphyro blastic leuco granitoid with 3/4 felspar clasts

HRD 731 large ledge of mylonitic gneiss, leuco granitoid protolith, large sub cooker on cinder blocks next to branch

HRD 571 N70E 62 se, qtz vein (2' thk) and large cocade hot outcrop of mylonitic leucogranitoid.

HRD 461 Cemetary walls are blocks of granofels med fine grained granoblastic with bio + hbd - weathers pink - old granulite

Headstones and Footstones are carved out of schist- or soapstone

2) N70E 80 NW Mafic streaks or layers in granofels

3) Foliated granitoid gneiss

4) N75E 80NW coarse granitoid mgl. old cinderblock still foundation

5) ~ Flood plain w/ sand and gravel potential, still site at intersection of 2 tributaries.

HRD 541 Sheared mafic dike with white porcelinous contact against massive bio gran sap N W trend - large mound like Landslide remnant in Floodway

HRD 542 N60E 14 SE Massive grn granofels

HRD 521 N70E 65 SE massive porph granitoid gneiss with very strong mylonite foliation

HRD 851 gray phyllite chips in well cuttings

881 Outcrops of silvery ms/phy in road and chips in well — meta graywacke qtz arenite on point

HRD 612 N80E 65 SE coarse leucocratic granite gneiss

HRD 613 coarse granitoid gneiss

HRD 614 N30W 64 SW schistose layer in granitoid sep

HRD 641 outcrops of course, segregation layered biotite granitic gneiss

Hrd 642 N70E 70SE coarse granitoid phase "roses mill"

HRD 951 N70W 55 SW mod gr bio gran gneiss strong comp layering possible porphyroclasts or pebbles?

HRD 952 N55W 5-10 SW Fg-mg bio gn, Flaggy layering N

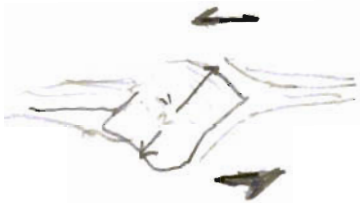
[illegible] 70E 10 SE

HRD 761 Felsic gneiss in stream N 70E 75 SE
1-to soils on hill to top soil change to
NW of top
HRD 762 Coarse biotite augen gneiss N 70E
45 SE strong segregation defined by
felspar porphyroclasts 2-3" smeared
out down dip
HRD 611A N75E50 SE Lineation 535E 38 Bluish gray
leucogranitic gneiss Flaser and augen well
developed
HRD 641 N70E 70SE bio flaser gneiss
14" tree being cut down by giant beaver leaves
3" wood chips

HRD 711 95 spl of coarse green granofels
2 wells behind new house
HRD 471 N60E 70SE subtle foliation in massive coarse porphyroblastic granulite clots of mafics up to 1" and feldspars up to 1/2" mafics partly altered to biotite, no strong foliation or layering sheet joints dip 20° SW (N60W)
HRD 871 outcrops of brn/grg ms/phy in road cut below stone line
HRD 872 black and white biotite gneiss
chips in cut
HRD 873 gray phyllite/qtz vein on island Active Beaverdam
HRD 881 dk grg mica schist
HRD 882 sheared cgl leuco gran clasts up to 1+"

HRD 893 between 2 and 3 are outcrops of qtz ose bleached gneiss - pos fossil sop at 3 are outcrops of sheared qtz-bio gneiss with rounded brown (sphene pbs up to 3/8" dia. N55E 50 SE Lineation S10E 38°

HRD 894 B+W s+p text musc-bio gn in rock channel meander cut oFF. N60E 50 SE Spl of large titanite specimen lineation plunges S40E 45 SE ~ 10' Zone oF 2' pbs



Sinistral

~~dextral~~

HRD 891 N80E 40 SE Lin S30E 20 very appressed Flasen structure in b+w mg gn

of granite gneiss 1

9/10/98

HRD 876 more conglomerate on hillside point is highly sulfidic graphite siltstone or phyllite Farmstead includes modified saltbox

HRD 791 cgl and mica schist occ

HRD 792 coarse bio sch/mylonite gneiss saprolite
in stream bant

HRD 874 coarse biotite granite gneiss ¼" brown masses in feldspar. sphene

HRD 875 Coarse grit beds. Flattened feld clasts coars qtz sand grains in muscovite / biotite mtx N 70E 45 SE Lineation S30E to SE stretched sand grains and feldspar rock fragments white muscovite "splotches"

at cliff augen gneiss is exposed at creek level conglorate beds are ~ 50' up on side of hill - 4" cobbles

HRD 931 by bay bore cut into heavily burrowed boulder terrace burrows or roots filled with gray clay blobs are fractured quartz

HDY 861 FOLDED Qtz VEINS synclinal cuts bio + hbl gneiss sap

HRD 611 sheared undkt to VEINS 9/10/90
on roadside, N 75E 75 SE musc schist/gneiss (Phyllonite)

HRD 641 layered bio gneiss — Sgg or "Marshall"?

HRD 642 Mass granford gneiss / Cataclastic cleavage spr

RD
HDY881 [illegible] Sept 10 [illegible]

[illegible]

RD
HDY871 pbly? bio gneiss ch spl coarse pb or porphyroclasts at edge of next field - big leaky looks like basement?

HRD872 mass, sheared granitoid spl N70E 10 SE spaced cleavage [illegible]

HRD651 Spl 9/11/90

black and white medium grained - fine grained porphyroclastic mylonitic gneiss along Linville Creek relict pyroxene blasts indicate the unit may be related to SGG

HRD 961 . SEPT 12 1990

good exposure of coarse granitoid gneiss saprolite

DML cdl

spl has crude foliation produced by alligned qtz-feldspar (polycrystalline) lens alligned with red and black biotite between these lens caticlastic or retrograde metamorphic

texture

has a matted "sedimented" look and wraps around apparent sand grains dark layers appear to have hornblende as well - possible low grade equivalent of the SOS unit

HRD 973 M folds on road bank, act gn

HRD 974 Up stream from bridge MFV incredible layering, in [illegible] folds [illegible] /Garnet amphibolite

HRD 975 N75E [illegible] incredible sand pebble [illegible] spl

aptly developed by shearing leucogranitoid above parasitic folds suggest overthrust movement

N60E ≈ 1° nearly horizontal

sivery mica feldspar ing gneiss

more bio rich pbclastic bio gneiss at lake N65E 37°6'E

HFD 971 RT 122 at Gills CK OCS of med and coarse biotite bearing gneiss? Rock May be [illegible] cta sandstone and [illegible] as feldpathic

Masses are made up of granoblastic angular sand sized qtz + feld. Mica

HDY 931 9/11/90

Cwiement Oc [illegible] W of [illegible] Bachist Ch
N 10 E 3A SE Strong Schistosity, leuco
cratic slaty or phyllitic bands, rock
is B+W, leucocratic, granoblastic
fine grained

HDY 694 Garnet hbd assemblage + 9/11/90
qtz Calcite?+ Fold veins intor layered with
schistose bio gneiss and leucocratic
granitoid layers, garnet hbd bio rx
are Fine - med granoblastic garnet may
be poikiloblastic

HDY 692 just above lake sivery mylonite - phylonite

HRD 531 cg biogranogneiss with relic beds partly disrupted by leuco zones, also pods of coarse graphic pg lenzes of blue qtz granite

HRD

HRD 961 EW 205 layering in fine meta
[illegible]
graywacke gneiss sequence
HRD 962 N75E 22SE possible felsic gn
or gran pebbles form lineation along
strong flattening foliation S40E 15°
HRD 963 N60E 55 SE coarse flaser bio gneiss
prominant intersection - mica streak lineation
S50E 45
HRD 953 abdt vein qtz on sw slope of contact
hollow, limonite films, box work
impressions (carbonate?) or (pyrite?)

porphyroblastic gneiss (Lovingston type) some schistose and slaty zones are intercalated with porphyroblast rich protomylonite or coarse granulite gneiss

HRD 41 on Linville Mtn - coarse cellular weathered granulite blders ~ pedlar

HRD 181 new cut in coarse inequigranular felsparanite with mafic clots

HRD 171 at entrance to North Franklin Co Park biotite gneiss with thin to thick white granite stringers / dikes offset on fol,

4/28 [illegible] [illegible] mas[illegible] [illegible]

[illegible] with fine mylonite stringers (up to 3/4")

many broken feldspars strong down dip

lineation

oriented spl of mylonite

shear sense

MAJOR SHELTER CAVE

down to the southeast

strike and dip N60E 45 SE

lineation plunges S30E at 50°

cleavage in mylonite N30E 55 SE

3.10gm 4/28

HRD 452 on panther knob, centimeter banded biotite gneiss (granulite) medium grained granoblastic texture qtz perthite acc biotite plagioclase.

HRD 442 [illegible] in slope. Equigranular granitoid-granodiorite bldrs ~ 3' dia rounded

hypidiomorphic granular
qtz t. K spar + plagioclase tipyx

clots of mafic [illegible]

HRD 451 n 70E 55 SE [illegible] FOLIATION IN PINK AND BLACK 50S BIO GN

black bio

pink spar

rotated Feld thio Folia

left lateral extension in place, lin S60W 5°

HRD 243 Grn rd gry qtz breccia forms Falls

HRD 244 Fine grained green granulitic qtz fold rx some epidote, thin qtz stringers - relict granulite? or mylonitic zone, some medium grained dioritic granofels or meta diabase

HRD 162 Phyllite with 2ndary cleavage S1

N 10 E 25 SE 2nd cleavage N 80E 55SE

HRD 252 4/12/94 On RR W of ~~SCU~~

F.G. Felsic porp dikes, iron stained breccia pods of Fg black weathered mineral Basterwasite ?? cuts coarse sheared granitic augen gneiss (Lovingston) at edge of large pink granite pluton. Spl HRD 252 coarse pink granite HRD 252 Bastanosite from Dike.

HRD 242 Coarse grg gran w/ pink kspar graggatz and play - looks more like horspen mtn - Newly blasted loc for aggregate spl

HRD 331 N20E 60SE 4/26/94 Very well layered (cm) granulite

HRD 363 N20E 80SE Well layered leuco granulite or Calcsilicate gneiss

HRD 364 Blocky Jointed mass granulite. N10E N80W Joint Sets nearly vertical

HRD 365 massive sandy saprolite pale yellowish gray at least 30' thick stained along joints qtz veins and pegmatite. Subtle Foliation N60 W 40 SW, appears to be a shear cleavage

Porphyroblasts [illegible] have top to right compressional symmetry

HRD 366

Road on Buck and Doe Mtn - severe erosion problem. bits of mass leuco granulite

4/27
HRD 291 between hardy Ford Bridge and 635 intersection on Hardy Road (634

There is a transitional contact between fine-med grained layered granulite gneiss (bio) and a coarse migma[illegible]

biotite granulite (Gneiss??) to relict pyroxene granulite or Pedlar green granulite

Biotite clots ← epidote + actinolite ← pyx + garnet?

Qtz + Feldspar

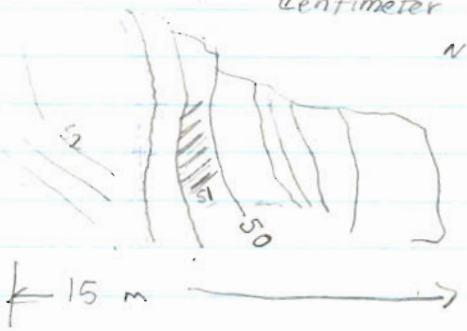
HRD 352, SC Mylonite 200 SE of bridge

N10W ~~7~~0 NE N40E 75 SE

HRD 351 well layered leucogranulite - gneiss

centimeter scale layering

N80E 80SE

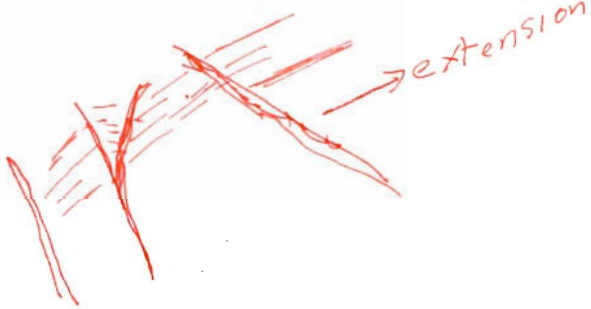


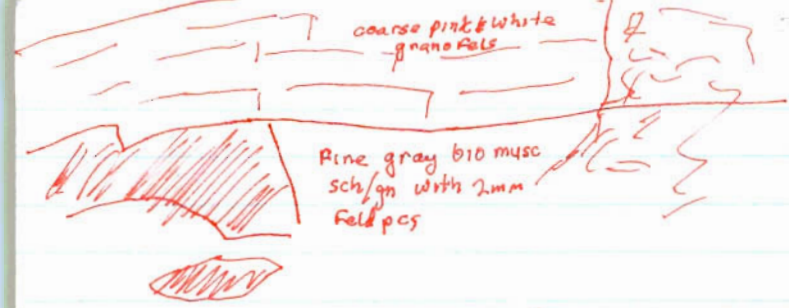
HRD 341, between viaduct and trestle

is a transition from protomylonite to med-cg

HRD 211 Qtz veins breccate layered gneiss veins treading N60E

Extension down to south east





CAVE IN above tunnel

HRD 135

HRD 236 schistose

in mylonitic granofels (basal ss?)

NICE SIZE OF Folded Feldspathic granofels (Meta arkose?) in stream bed

EXPLORE CORE

Hardy Quad
HRD-1229
37°14'.525
79°51'.303

Parkway Bridge over Mayflower Branch

Sta 42 + 25 -25

Top to 8.5
Granite gneiss, lt grnish gry, qtz + kspar ± plag + bio + pyroxene equigranular medium to coarse granoblastic - equigranular texture

10.5 to 20.5
Granitic Gn. lt grnish gy, qtz + kspar ± plag + bio - equigran

20.5 to 25.5
Granitic Gn lt gyish grn w/ weak Foliation developed, clots of biotite ll, joint faces are iron stained

25.5 - 30.5 No Recovery

STA 42 +25 +25
Top to 23.6
Gran gneiss, lt gryish grn, med-cg as in -25, weathered with iron stained fractures

25 - 30
Granite gneiss lt greenish gry, med to cg biotite, grn Feldspar gray quartz

STA 74 +00
Top to 34.5
Sandstone, wht - lt grnish gray med c. quartz, chl sericit epi mtx, rock fragments abdt porocity due to dissol. of mtx

39.5 Fine grained sandstone wit sh ptg, slt sn layers 1" thick ptg then big thick cg ss, coarsening dnwd
to 45'
45 - 50 u.s.d. coarse ss to fg ss w/ cly slt ptg
50 - 55 ss at (base) top then laminated slt an/sh
55 - 65.0 cg ss

STA 90 +15 +25
Mylonite gneiss, schistose large fractured Feldspar porpyroclasts

STA 93 + 75 + 25

Top 60 Green schist, greenish gry Medium grained porphyritic or porphyroblastic very competent one or 2 pieces

6.0 - 15.5

15.5 - 25.5 grades down into coarse brecciated granitoid or dioritic rock

91 + 65 - 25 off set

coarse pink & Black 25.5 - 30.5