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Hightower Paxton - Pilot

GIL MULL 2007 Field Notes

Galbraith Lake Camp

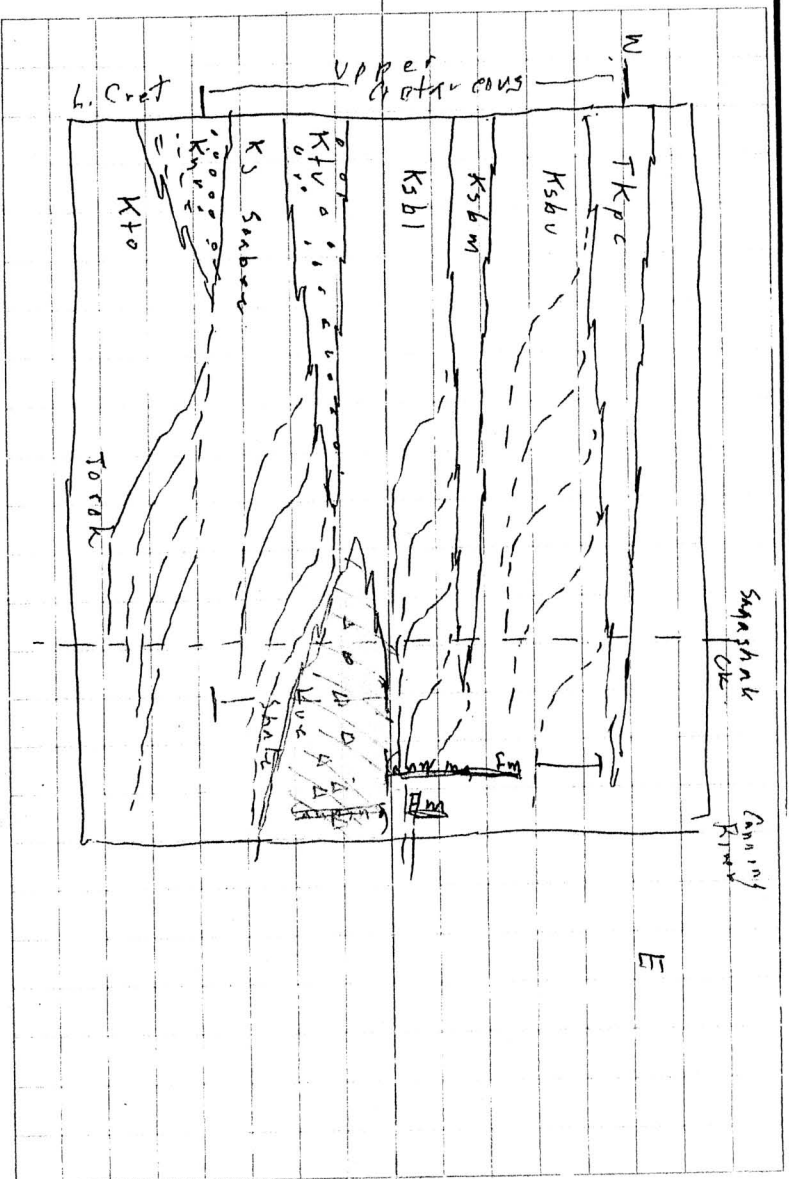
DGGS Sponsors tour
June 28, 2007

07 Mu 1 E of Ice Cut, east side of
Lith. Sag River

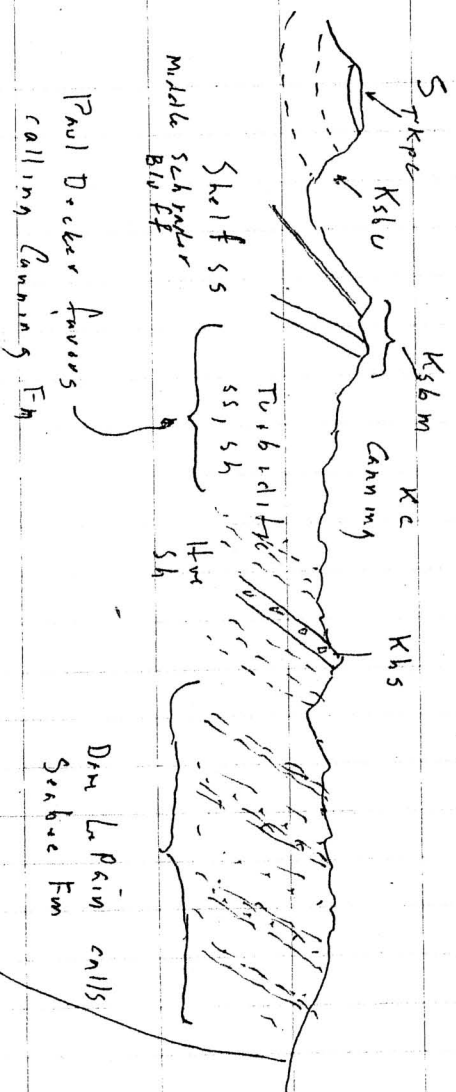
Same location as 93 Mu B1

See also 93 Mu 30 & 99 Mu 41

Resistant ridge pebbles to
cobble conglomerate, clasts about
wh. qtz, bl. chert, br. gr. qtzite
cobbles & boulders to 9" max,
subrounded. Largest clasts qtzite.
Some interbedded fine-grained ss,
br. gr., apparent troughs,
looks like Nanushuk



Sagashuk Creek



Paul Docker favors calling Canning Fm

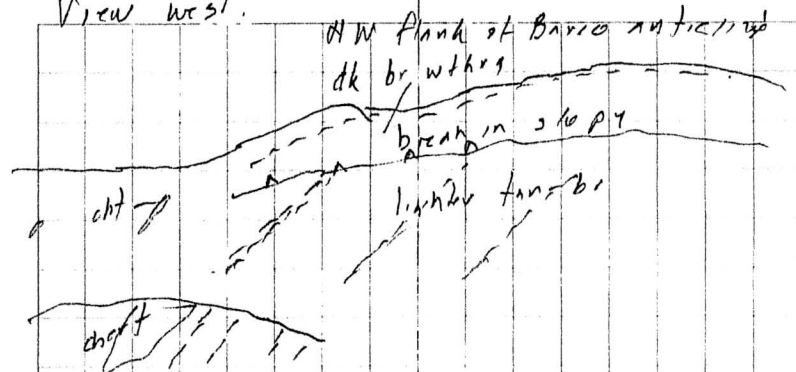
Don LaPain calls Seabee Fm

~ 200 yds across poorly exposed rubble of black sheared shale & thin silts to prominent low knob & ridge of gr-wh weathering rubble to dk gr-bk fractured chert ~ 20', and back into thin bedded platy siltstone. Chert extends 50' east west.

Views to east to ridge on east side of east fork Peregrine Cr suggests two zones of melange separated by a long sandy to shaly interval without melange. Dips to east appear ~ 45° S, possibly decreasing to 30° S on S end of ridge

Traverse down across silty beds & bk sheared mudstone to another chert blob, ~ 10' thick, rubble, and 50' laterally into more shaly cover, and then back into more sheared black shale in shale ~ 200 yds to low ridge held up by 1' granitic wreckage and into large patch of chert rubble, possibly 3 separate blobs - 150 ft laterally by 75-100 N-S. Back into another shaly swale to low ridge of

View west.

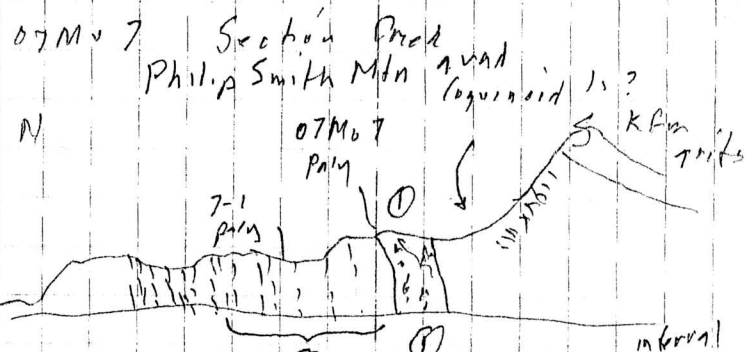


It looks to me like the NW limb of Barro anticline is thrust SE over the west end of the S limb of the anticline

07M03-5

sandy ~~silty~~ beds ~ 50', platy rubble, dk gn gr 'buffaceous (?)' matrix with bk carbonaceous (?) flakes, forms low ridge across ridge. This is the southern limb of Okpehauk on south limb of Barro anticline

July 5 CAVV, gorgeous. Nice north breeze



Hard, thin bedded turbidites
graded, interbeds of sh
w some cleavage. K₀?
100'±

Debris flow, 75'
scattered flanking
chit + trace siltst
pebbles to 3", very
thin to medium sized
msy, homogeneous,
fine grained ss matrix, black, hard, sl
manganese lenses.

Collected samples for maturity & palm
07 BS 26 C + D (07Mv 7, 7-1)

Hard turbidites are suggestive of Okan
but debris flow in section is more
K₀ appearing.

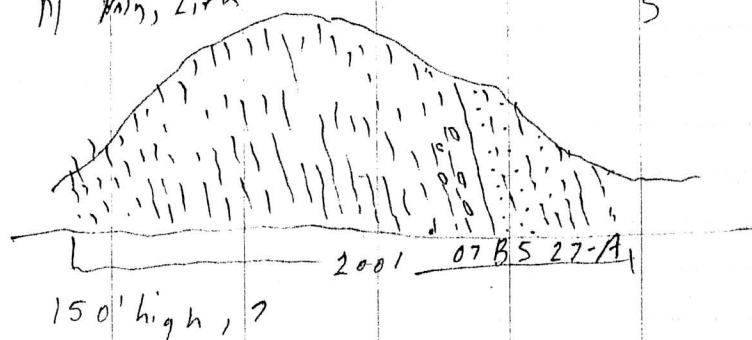
Downstream (over)

Next bluff 100 yds downstream

07Mv 7-2

07BS 27A

11/19/73, Litch



Long continuous section, thin bedded
distal turbidites at top, getting progressively
finer grained. Some even sandier more
pebbly granular beds interbedded.
Looks gradational, fining downward
Only sample from thin pelagic hard
shale interbeds between these turbidite
beds. Hard resistant beds to 3-5",
homogeneous, msy, but most much
thinner rhythmites. Gradling down
to continuous shale

07Mv 7-3 Downstream 200 yds on
west bank.

High 100' bluff, 150 long,
dense black sl silty phyllitic hard
shale - silty mudst. Some cleavage
Some thin concretionary beds,
one thin red-brown thin bed
that looks somewhat like ironstone
ls, highly compressed, micro
conc in some. No turbidites here
I'm comfortable calling this
Kingak. But very hard, deeply
buried

Overall impression of section -
anomalous, but Brookian. Calling it
Okpikruak is difficult because of
the gritty granular & pebbly
beds. Okpik should be very
distal basin plane pelagic and turbidites -
would not expect distal debris flow

(over)

Relationship to Cobblestone section
requires that Cobblestone sands
and Blankenship, and Shublik-
Okuk were south of this position
and were feeling effect of
some early tectonic shortening
that kept them higher and not
receiving much deposition

Also one slab with good burrows
Lith sample

Also healed microfractures
as in Kanayut River map area

July 6 High thin scattered overcast.

Peregrine Ch - Cobblestone Channel
Wind NW, pleasant. Cumulus w

07 Mu 8

Lith

Paly

Geochem

virga to east
Kuhsumin Creek
~~Alavushuk River~~

Just downstream from

Lesburne frontal sheet, west
bank

Long cut bank of sheared
bk sh + minor gn + gr wacke,
fine grained, intensely
sheared, ss boulders,
235° vertical, many
wacke beds downstream
end of bluff.

68.424704

Nanavshuk River 150.8025

07 Mu 9

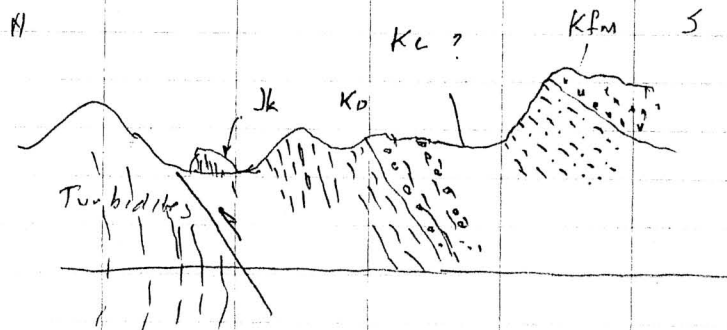
Lith

Major sheared wacke bluff
all lt gn + gr + gr f grained
wacke, sheared in a bk
sheared shale. Looks lustrous
Some with lot casts & br ovals,
Some bk sh chips & luff frags.
Some finely micaceous

290° due sheared fault

Very poor
disregard

appears as a surface to S,
dip plane 60°N dip ?



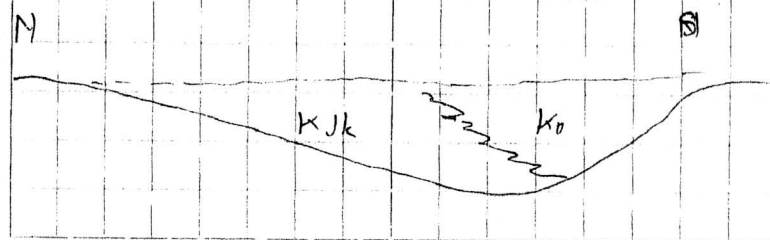
Relatively complete section from deep pelagic black muds w some minor silty, grading up into pelagic shales with scattered hard turbidites, becoming more abundant upward, with scattered interbedded granular to pebbly beds

Hill top to S, probably Fortress Mtn, transitional down into silty, recessive lower Kfm.

Prob coquina and manganese shale in saddle

Final summary: I think this is a section from off the bottom of the Colville Basin, representing the interfingering of Kingak Shale -

Beaufortian sedimentation with the beginning of Brookian sediment influx from the south. The distal Okpik unit has coarser debris flow beds that are coarser than I would have expected for autochthonous Okpik unit. But I can make a case that the orogenic front was further north than previously thought. This is presuming that the thick Kingak is Late Jurassic to Early Cretaceous Barrovian or Valanginian. The very hard, almost baked appearance of the Kingak is suggestive of a really significant burial event, but Swenson points out that it could well have been buried by thrust repeats of the Kfm section.



Purgine Creek, down stream from
Barro Point

07 MAW 216 A

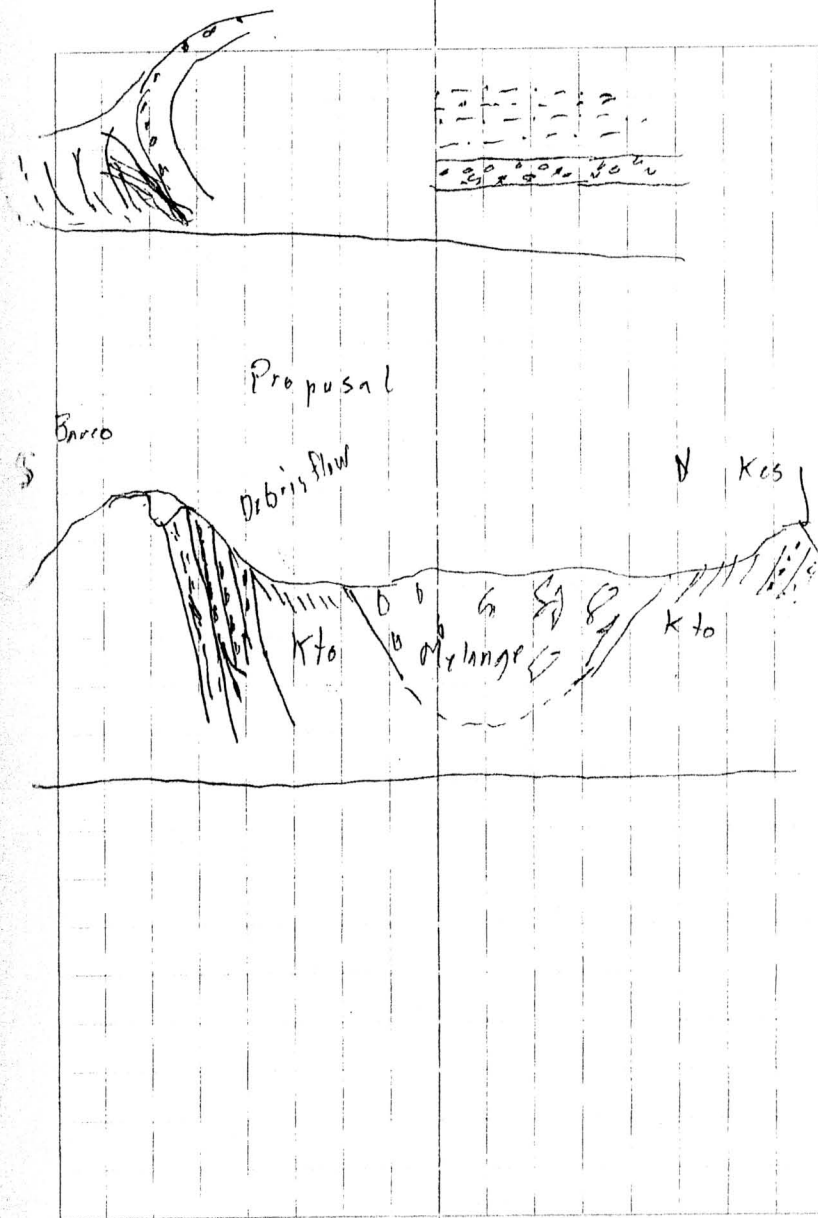
07 MAW 217 A

07 MV 12 Coarse dk gr granular angular ss
N) Lith S



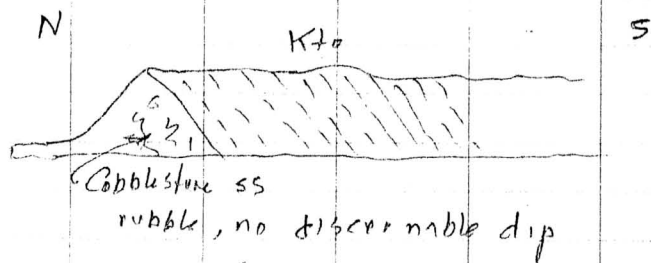
May resistant debris flow at
ridge front, down stream thinning
and fining upward in the thick section.
of dk gr silty mudst/shale with
conspicuous yel br oxid concretions
Near vertical at N end of outcrop.

This section reminds me a lot of
Torak or lower Fortress Mtn silty
mudstone. Could this be a section
of Kto / Kfu + debris flow cobblestone?



68°28.354' N 150°21.822' W

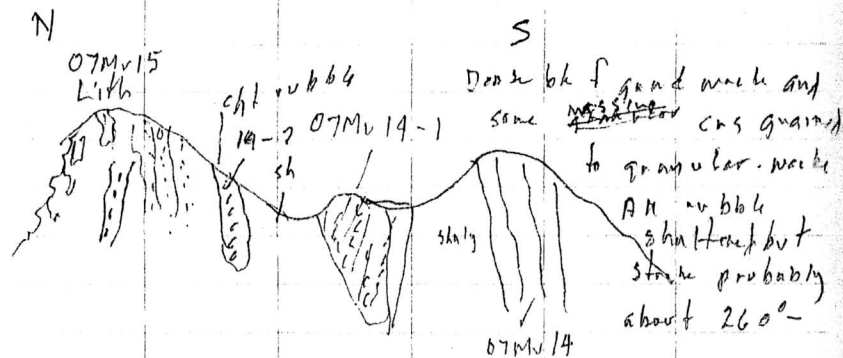
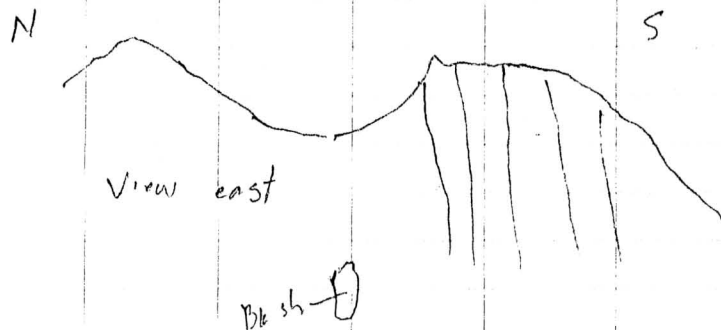
07 Mu 13 Cobblestone ss rubble
Lith at north end of point
between Cobblestone Ch &
Peregrine creek. Overlain
by long section of Torok



Ss, mostly f grain, gray, but
some rubble blocks with, typical
granular ss w abundant white to
cream colored leached chert grains

July 8 EAVV, cool, high overcast
SW moving in (?)

07 Mu 14 N Barro Ridge
Lith



on S side of saddle a low knob of
bedded chert, gr gr - dk gr, banded, which
is gray wacke, some beds, beds 3" - 6",
rubble but one bed coherent, strike about
060°, dip 60° NW. Low chert ridge is

about 150' long, probably 25-30' thick,
cuts abruptly at east end and also
apparently at downhill west end.

North
Transverse across saddle - rubble of
dk silty mudst + concretions / Fe
nodules, up slope to north across
abundant chert rubble to patch of
entirely chert rubble about halfway
up slope to ridge crest. Chert rubble
extends along strike for at least
100 ft. Abundant dark gr to bl chert,
reminiscent of Akmalik chert, but
also of gr-cream wispy laminated
chert. Probably at least 30' thick
chert unit.

Upper part of slope all fine grained
wacke rubble to ridge crest.

07 Mu 15 Barro Ridge

Lith

Massive coarsely grained to granular
debris flow; unit appears at least
50' thick, strike 060°, ~ 80° N,
but apparently variable along
strike, probably all structurally
broken.

Traverse down slope toward Peregrine Cr.,
across bk-gr shale rubble w abundant
manganese nodules to 6" diameter
Coguinoid ls in float also

07Mu 16

May Creek, N of Cobblestone Ridge

07. MAW 223 68.56344

Lith 150.26337

Oil sand Small outcrop on west side
of creek. Same as micaceous

Soft gr clayst-clay shale,
w intbed thin siltstones and
hard dark br gr platy ss

Strong sweet oil, odor on some
sands

Anomalous - not typical Tarok,
no silty mudstone, also lighter
color Approx 090, 45° S

Slump in center of outcrop has
thick ss rubble, not in place.

July 9

68.45905° N
150.57408° W

With Marwan.

07Mu 17

Nanushuk River

Lith

Debris flow locality, see
old notes 99 Mu 60

May Cobblestone or lower Tarok ss

~~Thin~~ Imping upward debris

flow, of coarse angular gr chf,
buff, dk shale chips, to 5';

w abund carbonaceous material
at base of out bed. Overall

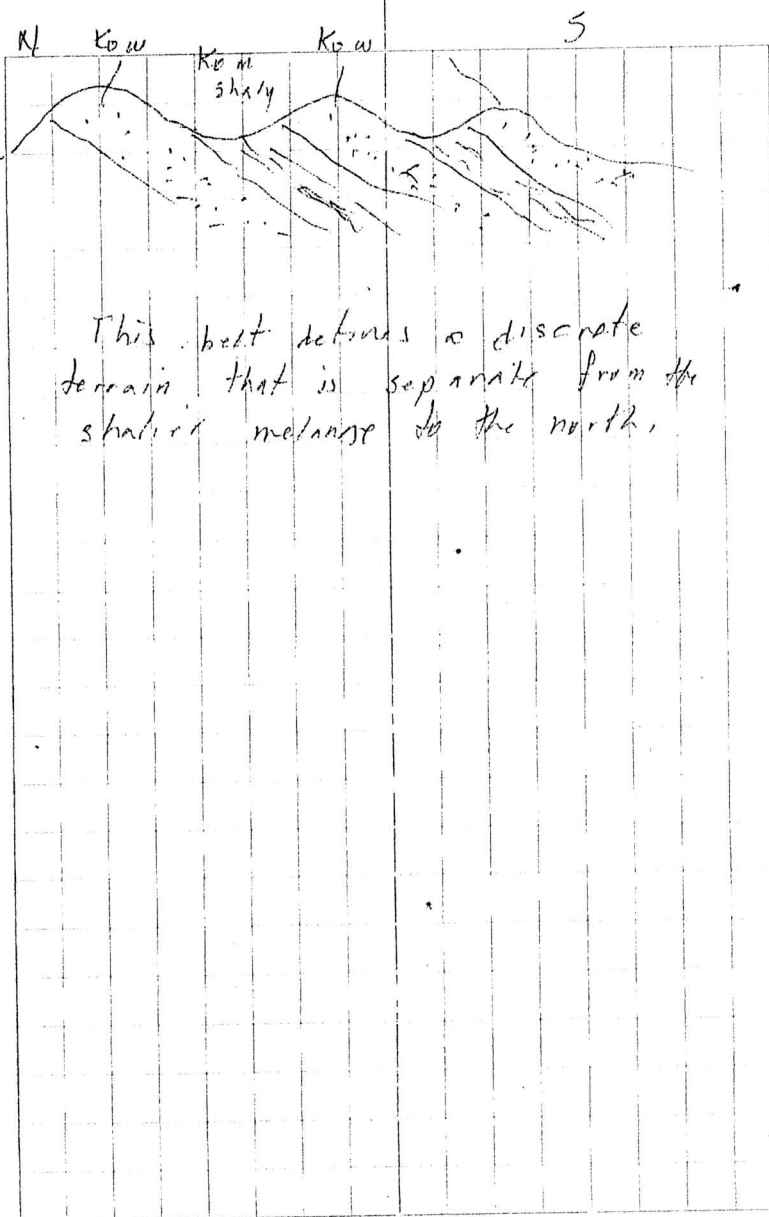
section thinning & fining
upward into shalier section
Strike ~ 070°, ± 35° S

Has interbeds of coarse to
granular ss composed of bk
chf, white chf (to ft?)

Some portions of this outcrop
clearly pass through a sedimentary
cycle - fluvial on bench do round
the grains, but other parts are
essentially right off an outcrop,
clearly close to source.

Kanayut R map area
 07 M₁₈ Welcome Canyon west bank
 L₁₁ M₁₈ H₁₈ gr. sh. ^{weathering} sh. ^{shattered}
 68.42300 Okpikwah melange. Ss, fine
 150.86508 grained, glauconitic, abundant chert,
 chert blobs black carbonaceous plates in
 part, some coarser beds
 68.4222 with conspicuous white
 150.86356 lustrous grains. Has
 conspicuous healed micro-
 fractures giving sometimes a
 spiderweb appearance,
 One shattered bed with a
 noticeable hydrocarbon odor

Across creek - small chert
 knob. Exposure is in front
 with high resistant hills
 underlain by graywacke.
 Low stream banks between
 trend of higher hills have
 numerous black shaly turbidite exposures.
 I suspect shaly melange
 may underlie this more sandy
 melange



This belt defines a discrete
 terrain that is separate from the
 shaly melange to the north.

07 May 19

Lith Wellman CK

Thin sect. 6A, 45033

150,92719

By small cave in base of bluff.
Chert, tuffaceous, appearing.

Mangled mass of bedded chert,
some gn gr dy grng with
cavities weathering out.

Irregular leaching of black silice
interior of thin beds. Probably
typical of all the Otish
"cherts". This outcrop illustrates
of many of the Innatechind
chert masses in the melange

Chert, thin bedded, rhythmic,
beds 2-6" thick, all conchoidal

End 2007 field season