

1989 FIELD IDEAS
DVC

676497

TO: Dave Lefebure

FROM: Derek Brown

DATE: Thursday, July 30, 1998

RE: Our study of the Golden Bear Deposit and Environs

Dave,

Priority

Here are some suggestions for your continuation of field studies at Golden Bear:

- C 1. Examine and collect drill core from Kodiak C (we did not have drill logs) (low priority)
- A 2. Examine and collect drill core from Bear Main (we did not have drill logs) (high priority)
- * 3. Review Misty-Nie property data = northern extension of the Ophir Break (West Wall fault); erratic Au (MG-374, >10,000 ppb Au), silicification ??, DDH and notes in data room. See Zuran (1994)
- * 4. Examine regional data -- Bandit, Ram-Tut, ... -- are there any maps, etc. that could or should be copied?
- * 5. Copy Totem trench maps?
- * 6. Find and copy Chevron Bear Main original trench map.
- B 7. Collect more fluid inclusion samples -- quartz and calcite.
- A 8. Look at Fleece Bowl in more detail.
- B 9. Sample more of the unaltered carbonates and Fe-carbonate alteration zones -- for carbonate species
- A 10. Look at Andrew's decalcified limestone at Ursa and collect for thin section (rounded quartz grains in gouge zones -- I never say it).
- A 11. Check out geology along the new haul road from Kodiak A down toward Ursa -- how does the Totem Silica Zone interfinger with Fleece Bowl silicified zones?

B 12. 5km core - blue shales
B 13. check out solution cavities, karst bx

The question of the nature of the breccia types remains: (1) tectonic, (2) hydrothermal, (3) solution collapse (syndepositional/diagenetic), (4) solution collapse (recent karst formation)?

14. Oxide zone at Bear Main.
cheers,

15. pictures of gouge ??
- core

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Carlin-type Criteria

- jasperoid

16. location of fluid inclusion samples



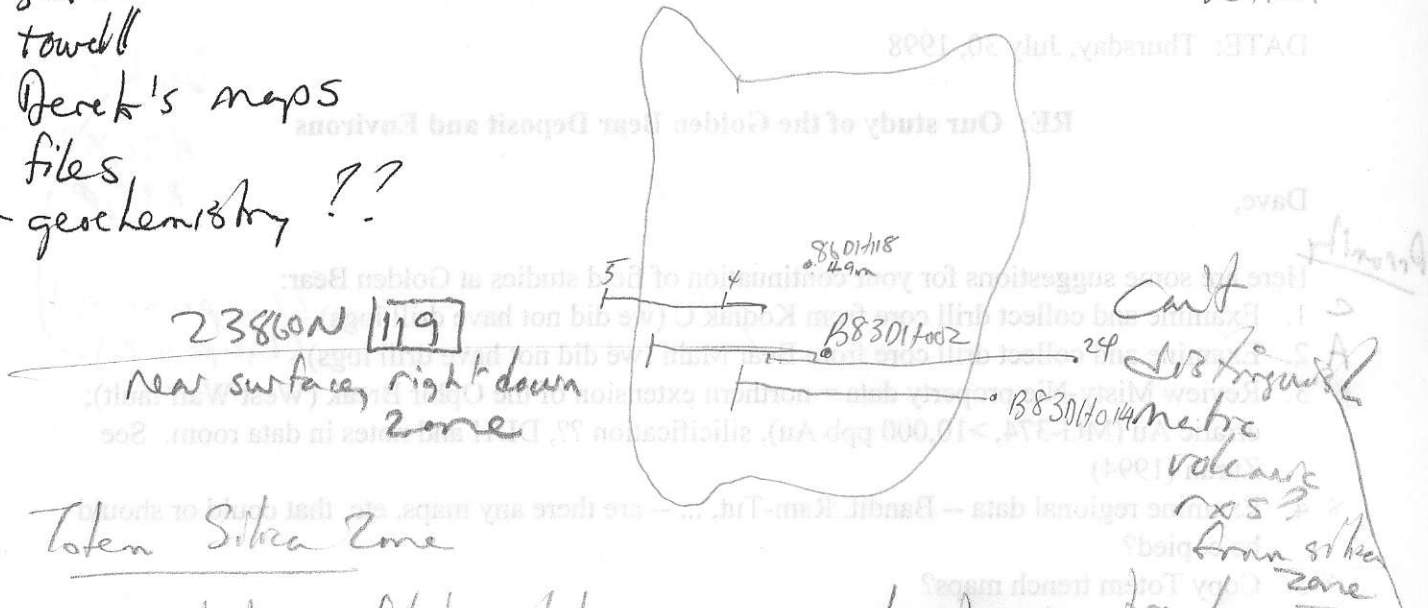
27100N - Ursa Section
9 days
Bear Main - 2 - ddhs
Fleece - Totem - 3 days
Sampling - 2 days
Caves - 1 day
hard scale talk ??

Handwritten notes:
Caves relationship to Ursa
oxidized zone
one zone
open Derek's sketch
B31, B32, B32A
B35
phosphates

- Andrew's files
- my slides? + note book
- scribe
- towel
- Derek's maps
- files
- geochemistry ??

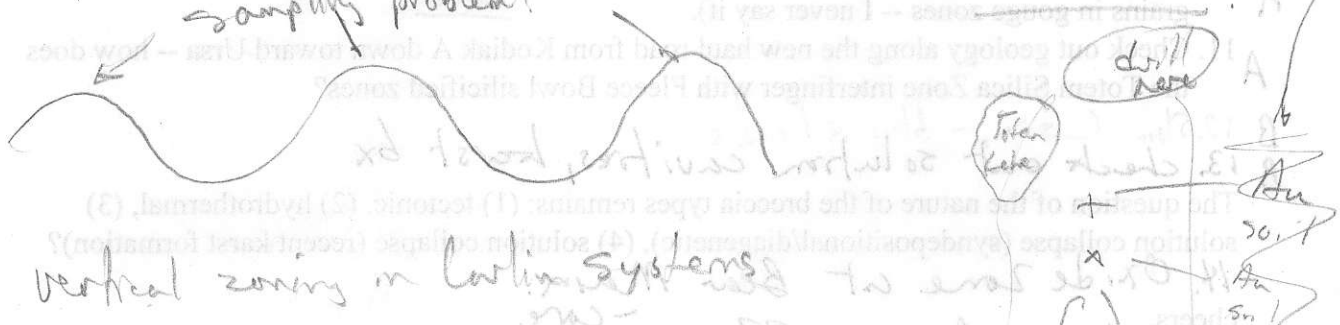
Neil

B.86 D1118
Vertical



Totem Silica Zone

- orientation - flat slab
- vertical zone
- offset by E-W faults
- how much gold
- sampling problem?
- locate one trench
- higher Ag??
- why
- soil anomalies!



drilling on Black Point
1 to 2 g/t Au over 0.5 to 3.0m

what about 785 D1196
location
3.9 g/t Au over 1.3m

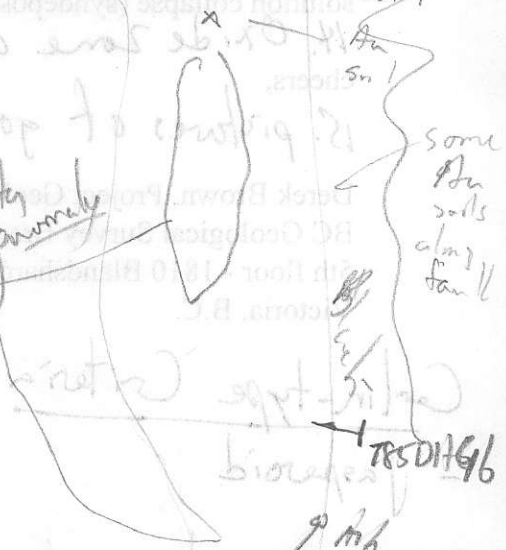
- importance of NE structures?
- effect on D1196?
- unlikely faults have shallow dip if trend N-S over hill

Magnetic low

Ag anomaly

some Au soils along fault

9 m. of black fault?

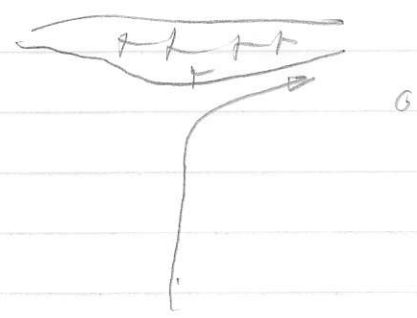


493 8672
021 7938

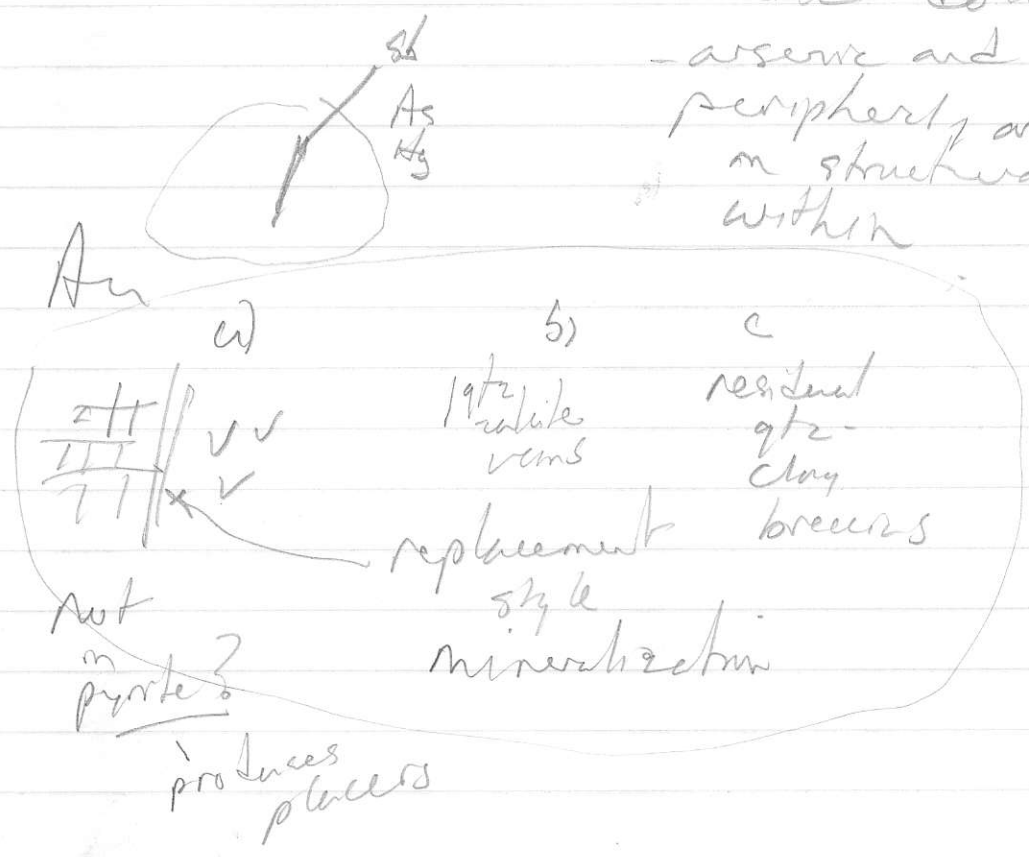
952-0432 DB?
383-4763

Rataatoh District, North Sulawesi
Indonesia

- carbonate sediments and ^{volcanic} ~~epidiorites~~
- intrusion of shallow level pre-mineral andesite
- synchronous with late-stage reactivation of strike-slip faults



- secondary dolomite
- arsenian pyrite, silica veins and Au
- total decarbonation and massive silica due to decalcification and dolomite
- arsenic and antimony ^{mercury} periphery, antimony in structural zones within



433 875
051 222

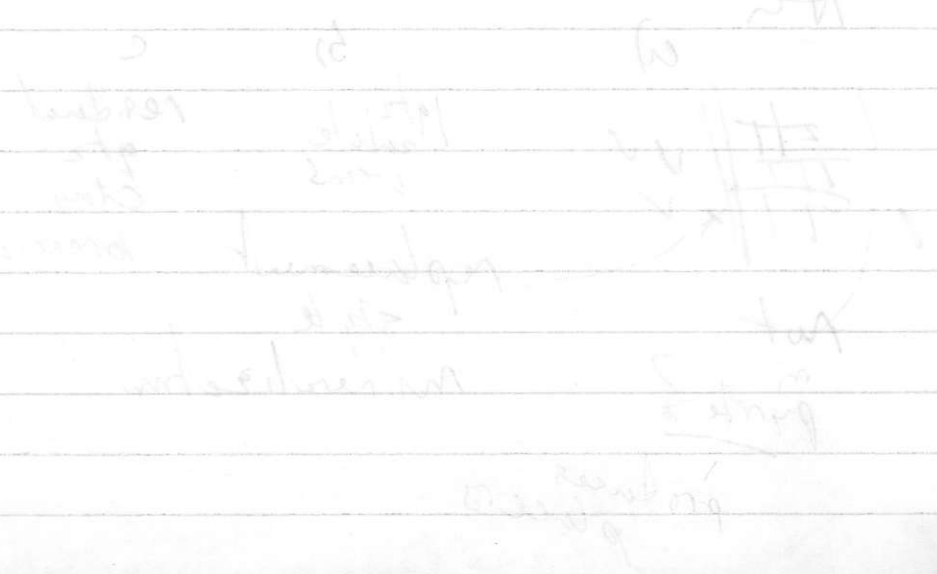
- samples - crushing
- alteration
- report

alteration
 - alteration of shallow level ground
 - carbonate

- specimens with late stage
 - transformation of strike slip fault

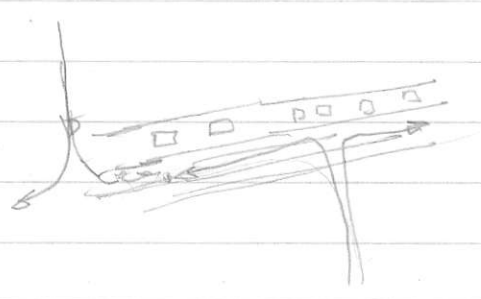
- some deep and shallow
 - various types
 - siliceous veins and
 - total disintegration
 - and pressure silica
 - due to brittle fault

- and dolomite
 - veins and
 - fragments
 - in stone
 - with



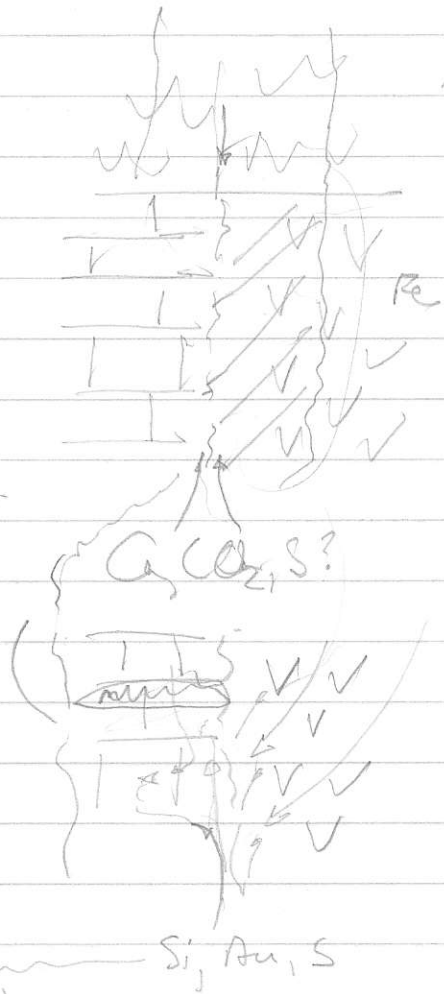
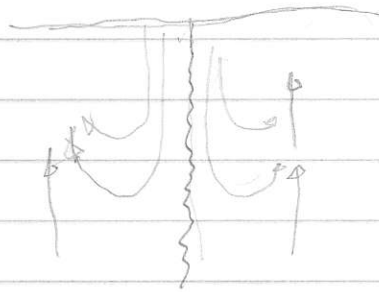
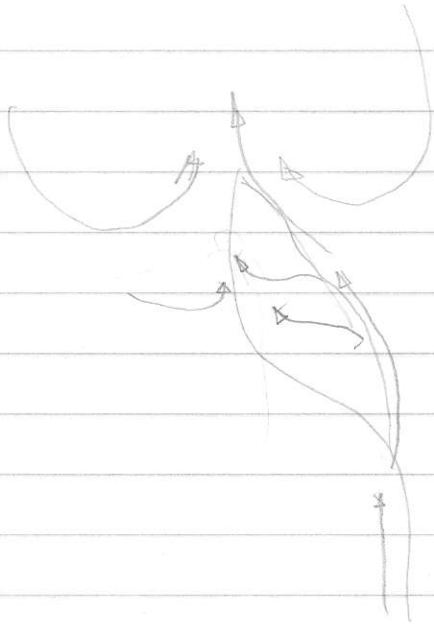
Knives - cones to serrate - damaged margins

organic-rich
7 to 10
gms 1/37



Any East-trending faults?
More dykes?

Re-carbonate
///

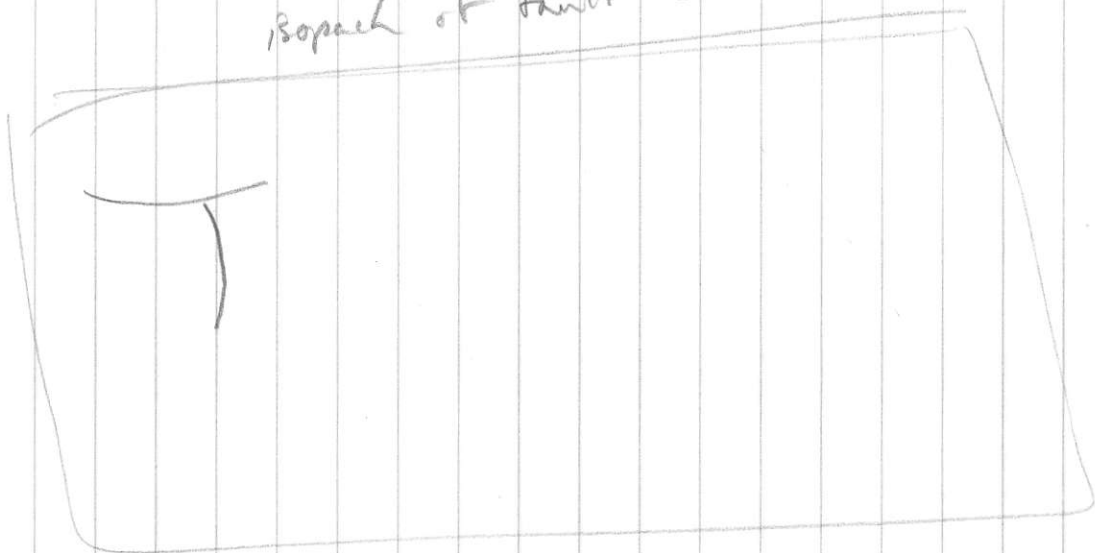


Felsic
dyke

40 //

N 24R
41NW

isopach of fault contact



① deposition of limestones, lamy siltstones and siltstones with abundant fossil debris

? ② diagenetic development of chert nodules? - common

③ uplift and ~~less~~ erosion - broad folding?

④ karst development in limestones (Ca-rich)

Adding? ~~could be supplied~~ by meteoric water) ↑ NTB
 ⑤ deposition of volcanics and intrusion of sills

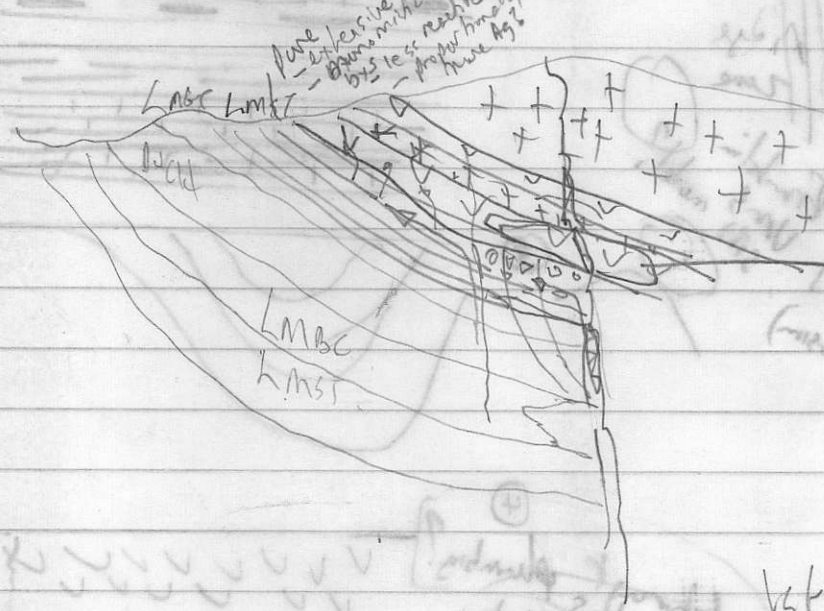
essential? ⑥ intrusion of dikes could be same event

Foldings? Faulting? Jurassic Tertiary intrusions - probably altered intermediate dykes (present geomorphic applies)
 ⑦ hydrothermal fluids rising through

sequence - follows guided by volcanic / intrusive cusp - follow karsted 1st laterality and faults and fractures

? Permeability Fluids

lithology controls alteration + style of mineralization impact (Siberia?) An jasperoid lmt?

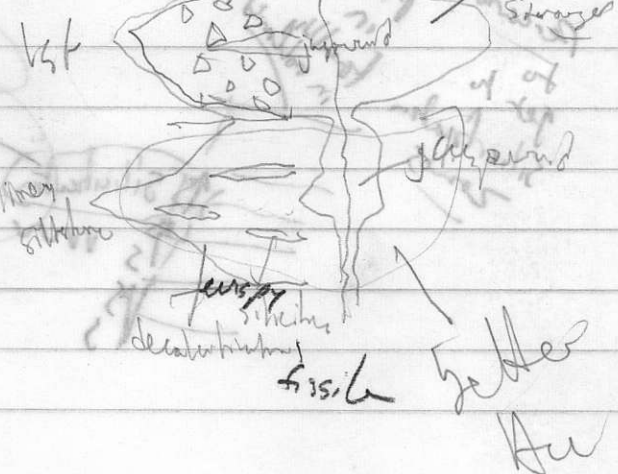


R-carbonate zone above?

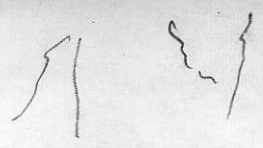
mixing or reaction (imp lmt) Healed/Siberia Could be sealing better Siberia

Erosion Faulting

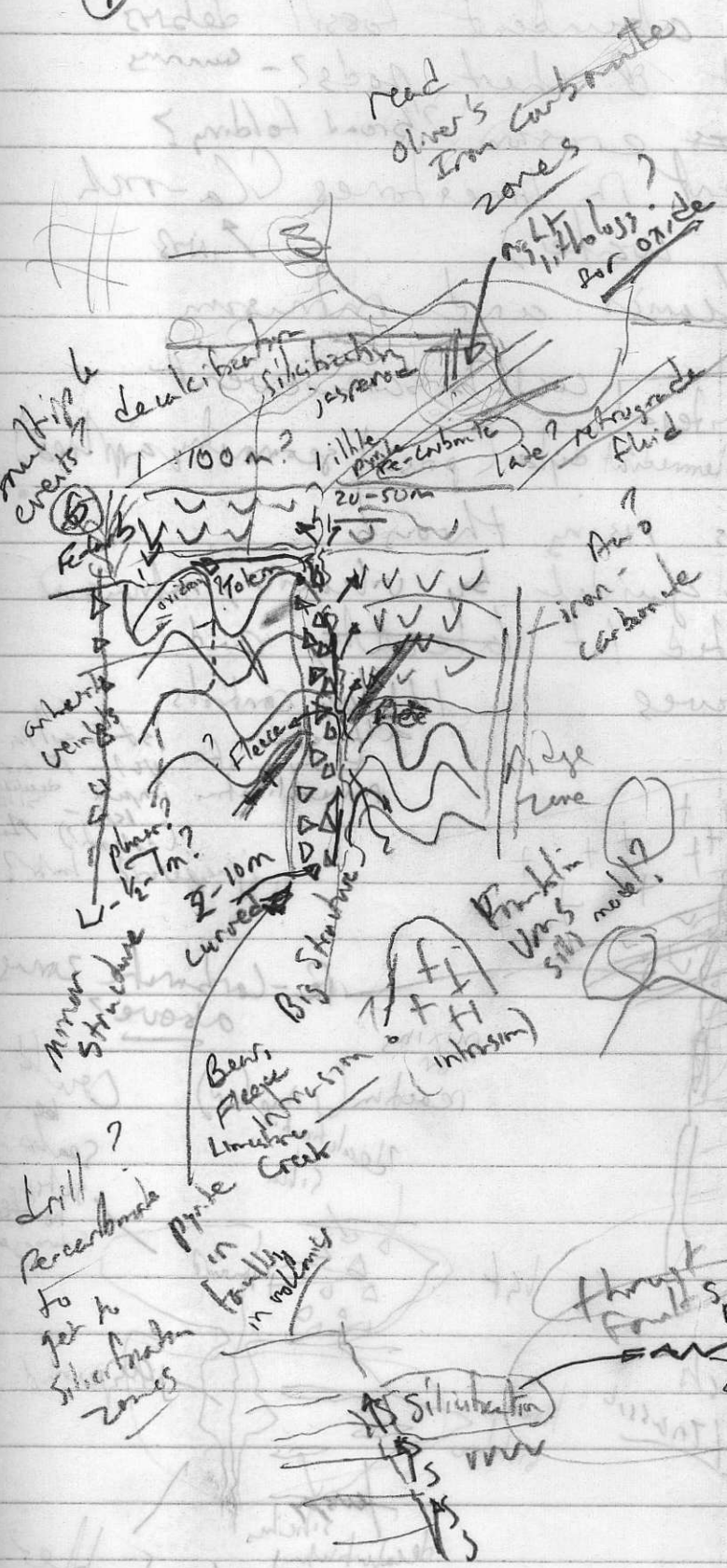
what has karst today had karst in Permian/Triassic



① Goldmyt faulting



-any holes drill
thru volcanics
to see what
east of fault?

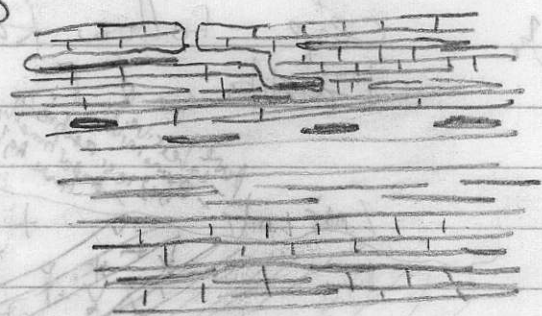


dolomite?

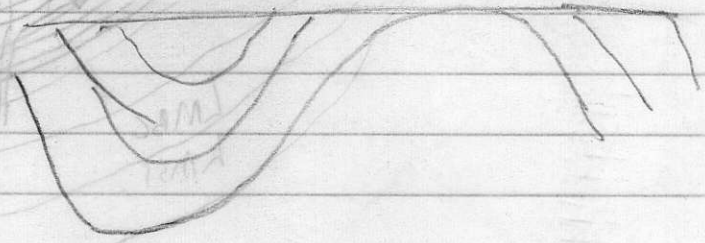
①



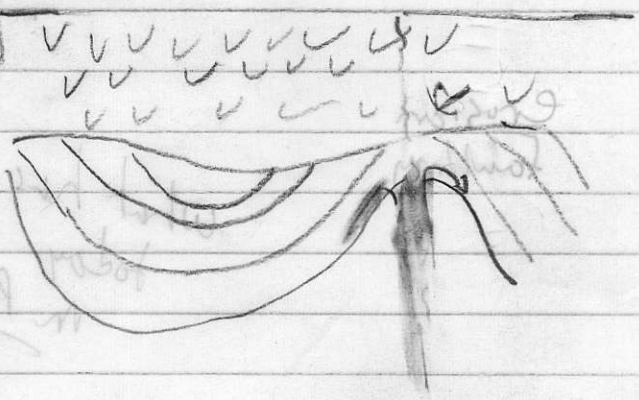
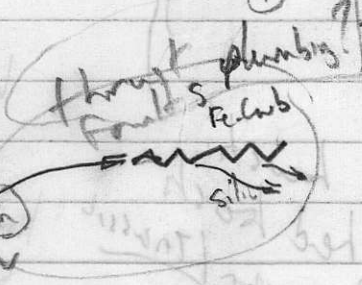
②



③



④



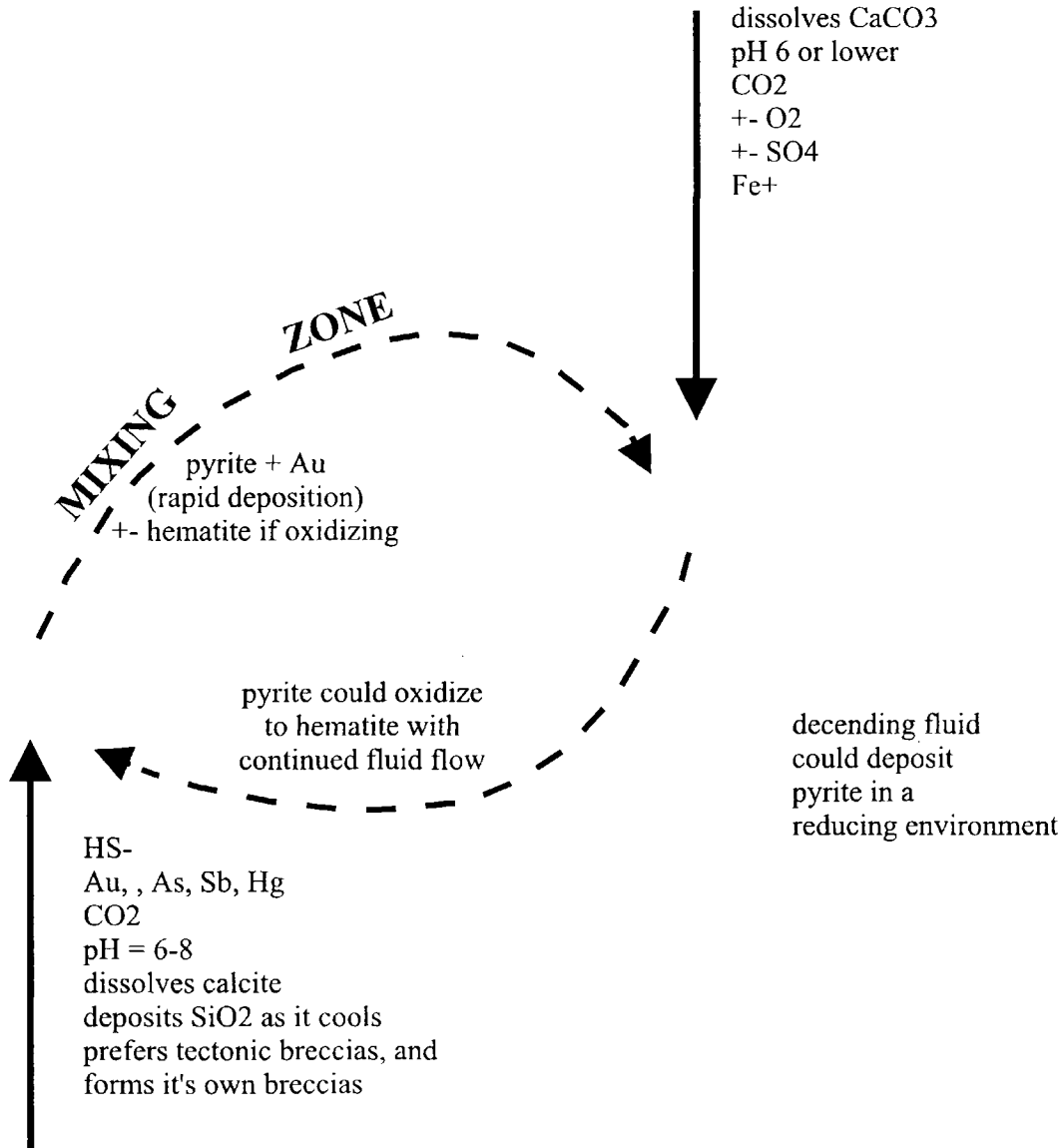
LMLT
 DOCH } limestone with chert pods (dolomitized)
 LMAC } limestone with conoids ?
 LMG }
 LMS } limestone (dolomitized)
 LAG }
 black chert
 chert, argillite
 volcanics

Control on
 dolomitization
 - hydrothermal
 - diagenetic
 - metamorphic?

Karst? [two beds in LMSC are
 extremely silicified and
 kermantitic and have
 low grade mineralization

Preliminary

Golden Bear Fluid Mixing Model



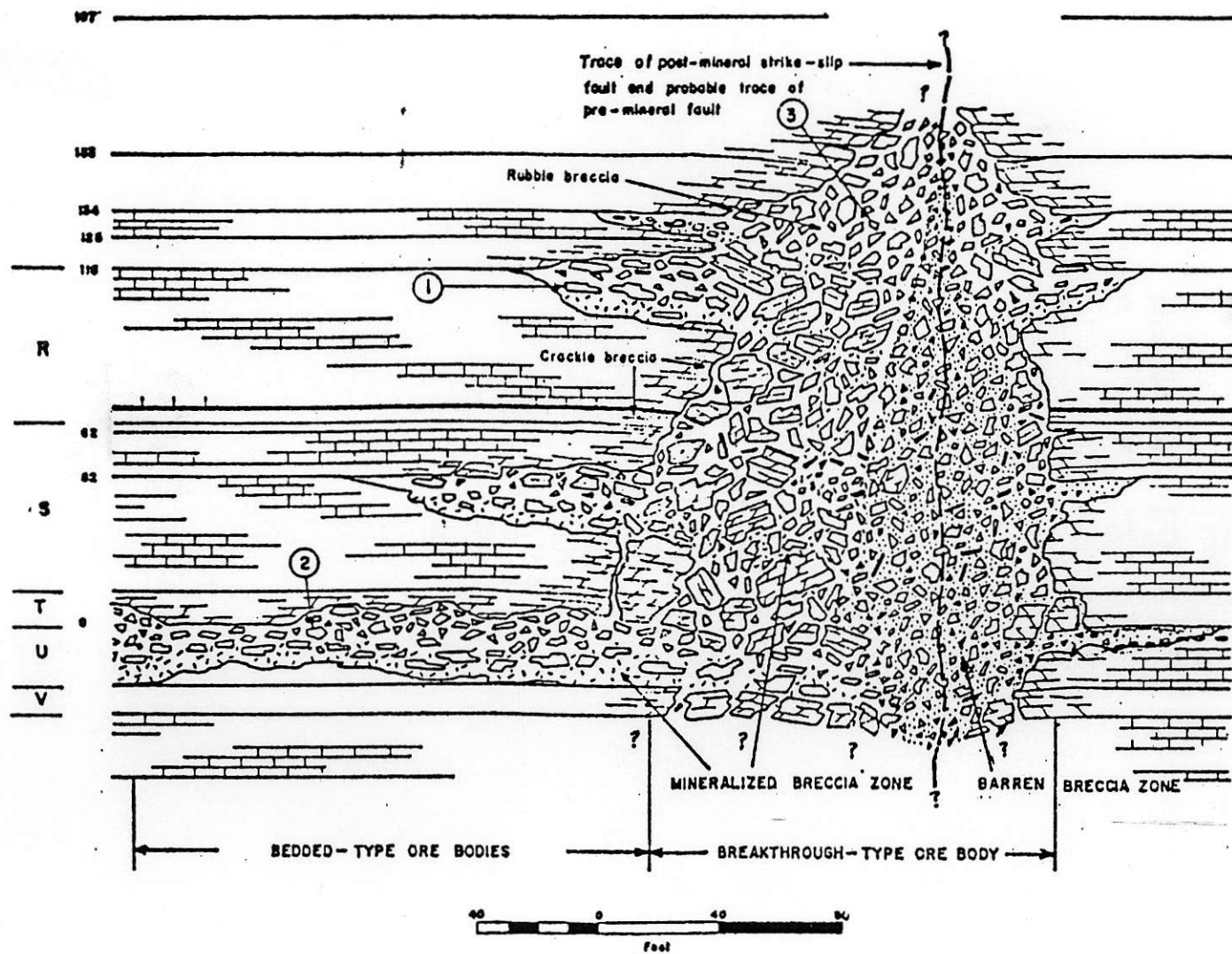
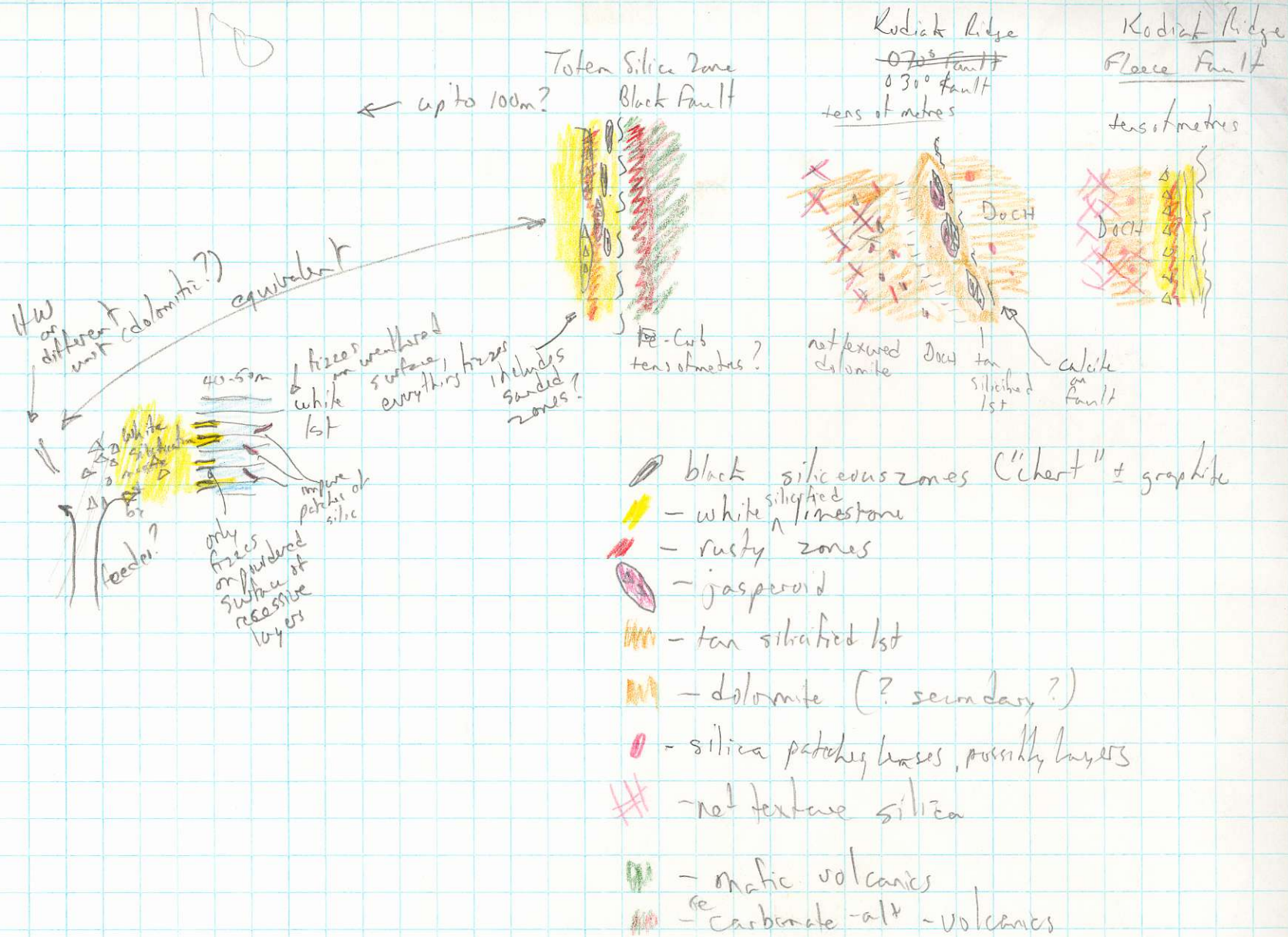


FIGURE 12

An example of brecciation styles in carbonate rocks.

Wasylyshyn, 1987



Aug 6, 7

- ? host lithologies impact
- ? dip impact on extent
- ? how different importance/significance of gray/black silical timing? (later) original composition?