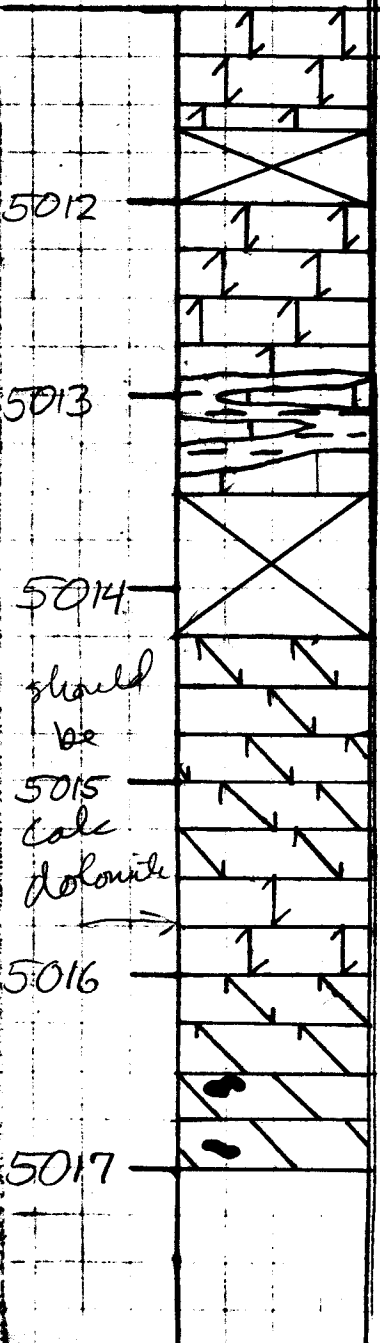
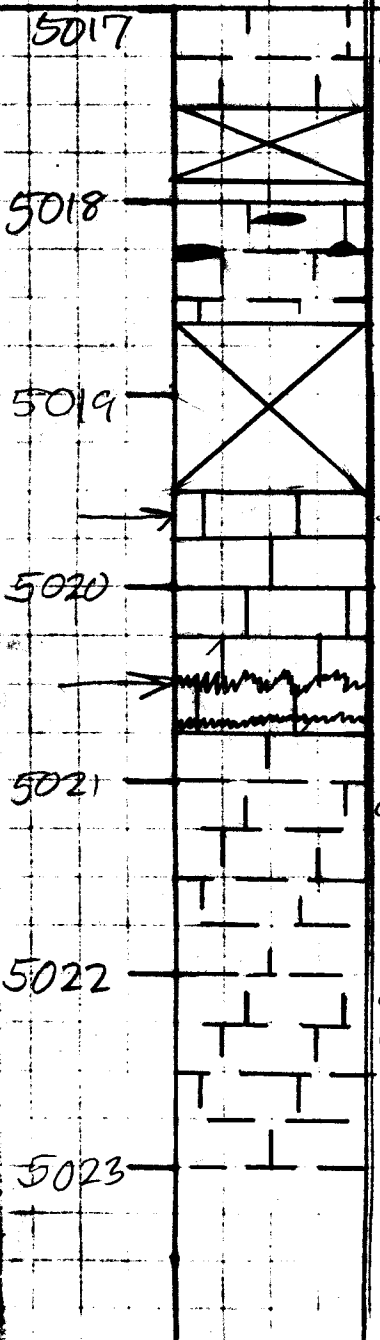
NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU 'B'		11-31-18w	Comanche			



ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
skel lime wkst (pkst?)	# ⌀ ✗ Y	G		lt brn		producing interval 6' packstone, 2' wkst, 3' mdst
skel lime wkst	⌀ ✗ # ⌀ Y	G	VUG (1cm) <1%	lt. brn + green		GAS
lime mdst + calc shale						
should be	⌀ ✗ # ⌀ Y	G		lt. brn		
bryozoan or/and brachiopod lime wkst + pkst	⌀ ✗ ⌀ Y	G				brach's are silicified
	⌀ ~3cm long					
	⌀ Y					
			VUG surrounds chert			

NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU "B"		11-31-18w			1131 & 1132	



ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
arg lime mdst			VUGS (.4cm) <1%			
hefty arg lime mdst			VUG (1.5cm)			Strong PF stain GAS
skel lime grst						
	ϕ ϕ # Y	ⓒalc	BP & WP (minor <2%)	wh skel part in brn lmst w/ green glauconite		Chert replaces brachs
	ϕ ϕ	⑤				
arg lime mdst	Y rare		VUGS (.4cm) 1%	lt brn/grn w/ brn mottling		vertical hairline fractures
arg lime mdst		▽ rare		lt brn w/ dk brn mottling brn-grn lt brn w/ dk brn mottle		

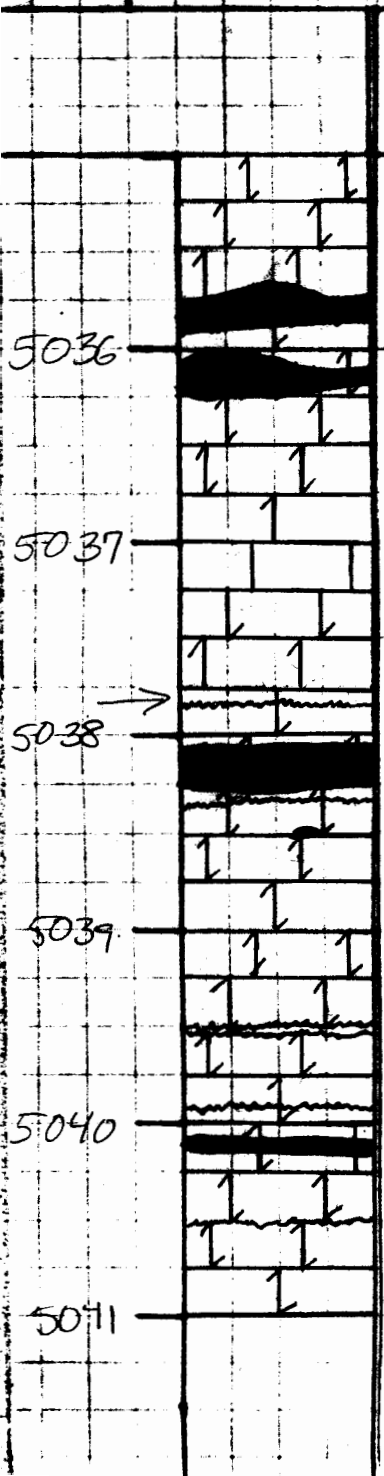
NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU "B"	C NW SE	11-31-18				1

	ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
5023	arg. lime(?) mdst			~~multiple~~ ?	grn-brn		
				VUG (1.5cm)	lt. brn		Mdst has strong PF stain (& MPS)
5024		# Y ⊘ ⊘ ⊘		FR (filled)	lt. brn lmst		black+white chert with mdst layers
	cherty lime mdst						
				VUG (3mm) cr secondary			
5025		Y # ⊘ ⊘ ⊘			lt. brn/ gray lmst		
							black mottling
5026	cherty bryozoan lime grst lmst	Y # ⊘ ⊘ ⊘?		microporosity	wh chert dk gry lmst		Y ? ⊘ ? ⊘ ? skel grains (⊘ ?, .25mm-.5mm) have interior microporosity, are black, and have white coatings
							~3mm ~10mm # ?
5027					dk gray		No Fe despite rare red particles
		Y ⊘ # ⊘					minor chert repl. of grains
							some skeletal grains are black
5028	lm pkst.	Y ⊘ ⊘ ⊘?					
							mdst lenses
							black mottling
5029							

NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU "B"		11-31-18w				

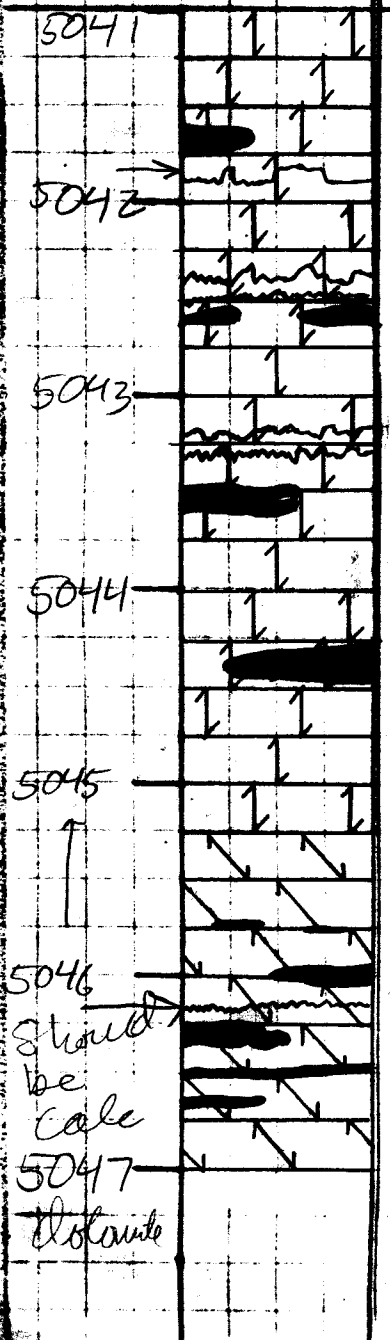
	ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
5029	fossiliferous lm w/rst	Y # ⊘ ⊘ ⊘			grnish brn lmst		black mottling in lt brn mdst
5030		Y ⊘ # ⊘ ⊘					microstylolite seams black mottling (chert?)
5031		Y ⊘ ⊘					
5032		Y ⊘ ⊘					Fine grained mdst takes PF stain
5033	arch. dolopkst	Y ⊘ ⊘ ⊘	▽				
5034		Y ⊘ ⊘	▽		lt. brn lmst gry+blk chert		Fine grained mdst lenses take PF stain white portions of chert take PF stain
5035							

NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU "B"		11-18-18w			1136+1135	



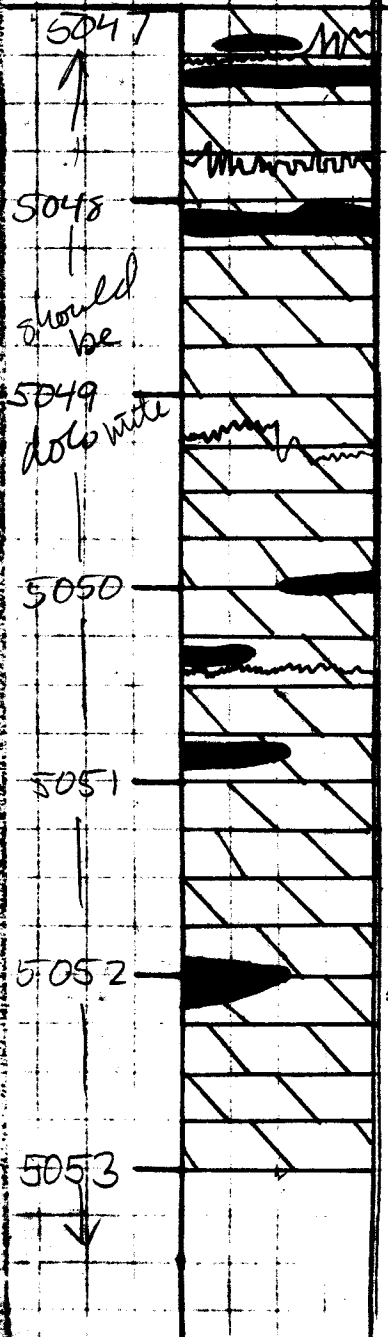
ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
						black mottling along vertical cracks
	# ? ⊕ ?	▽ ▽				grn size smaller
	# ⊕ ? ⊕ ?					insol resid. (& stylolites) concentrated in layers of larger grn size some grns take PF stain (around stylolite)
	⊕ ⊕ #					minor chert repl. ⊕ + ⊕ grn size ~ .5 mm blk insol resid.
	⊕	▽ ■ ? ▽		LT BRN LMST WH + GRY CHRT		TRACE BLK MOTTLING (■ ?) (OIL ?) MATRIX TAKING V. FAINT PF STAIN
	⊖ ? # ⊕	⌇				
	⊖ ? # ⊕	⌇ ⌇		WH CHRT IN LT BRN LMST		

NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU "B"		11-18-18W				



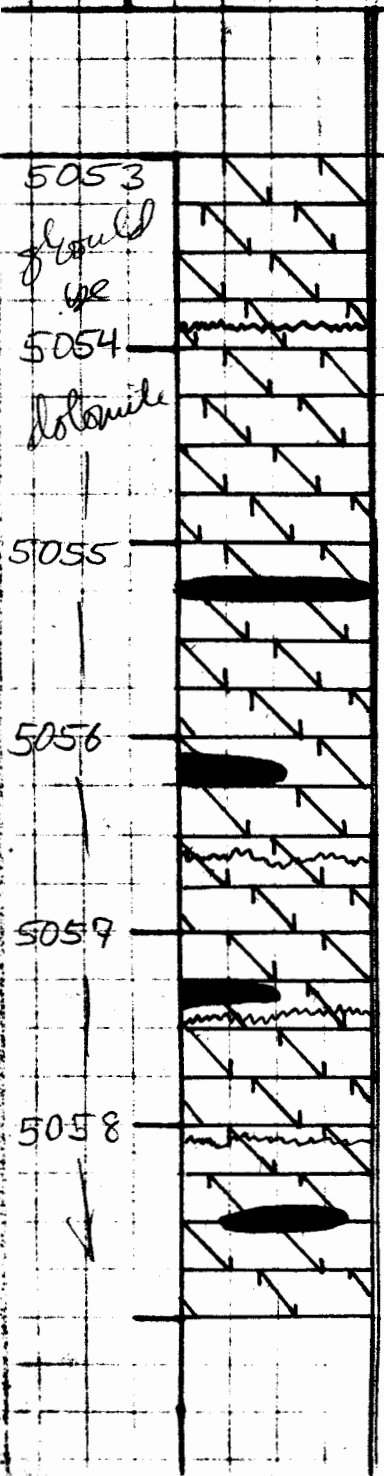
ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
	⊖ ∛ ⌓ #					ech. very small (~ ⊖)
				LT BRN		
		GTR				Does not take PF stain except in deeply etched layers
chrty Lm vpkst	⊖ ∛ ⌓ #					
						transition indeterminate
	⌓					
						1" Layer w/ traces of chert lots black/brn mottling. Same layer takes PF stain
CHRTY, dolo LM MK ST	⊖ # ⌓	(GTR) VUG filled with dolo	TRACE BRYOMOLDIC POROSITY	LT BRN w/ BRN MOTTLES	V.S.	Fine grnd MOST TAKES PF stain & PURPLE ARS STAIN

NO.	LEASE	SPOT	LOCATION 11-31-18w	COUNTY	INTERVAL	BOX NO.	PAGE



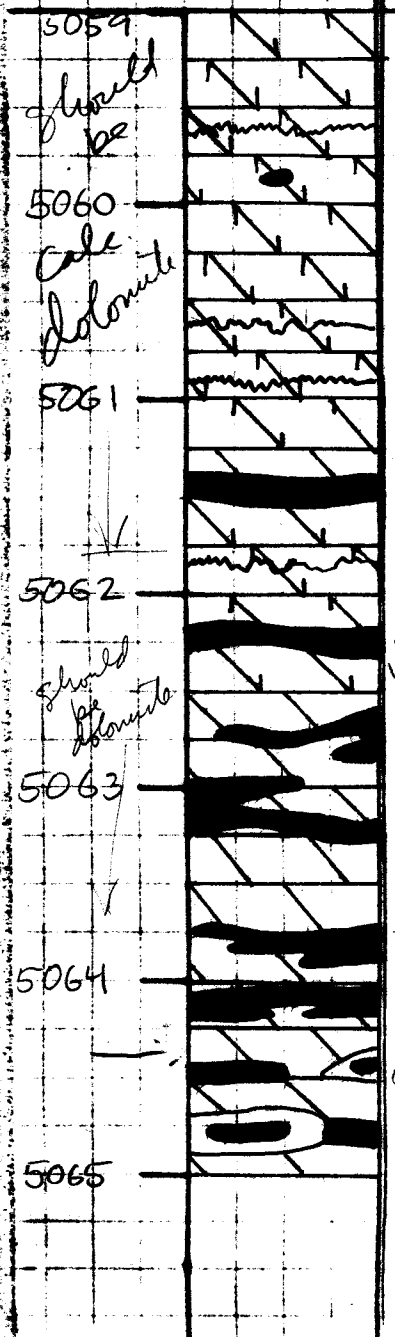
ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
	⊟ #					Most "wkst" is actually microfossil pkst and some pkst is probably grst
						some layers w/ Fe
						pyryte around chert nodule
				lt. gry lm + wh+gry chert		chert has porous wh. Fe-calcitic rim
sli. chrty lm wkst						very little Fe
sli chrty lm wkst						

NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU "B"		11-31-18w				



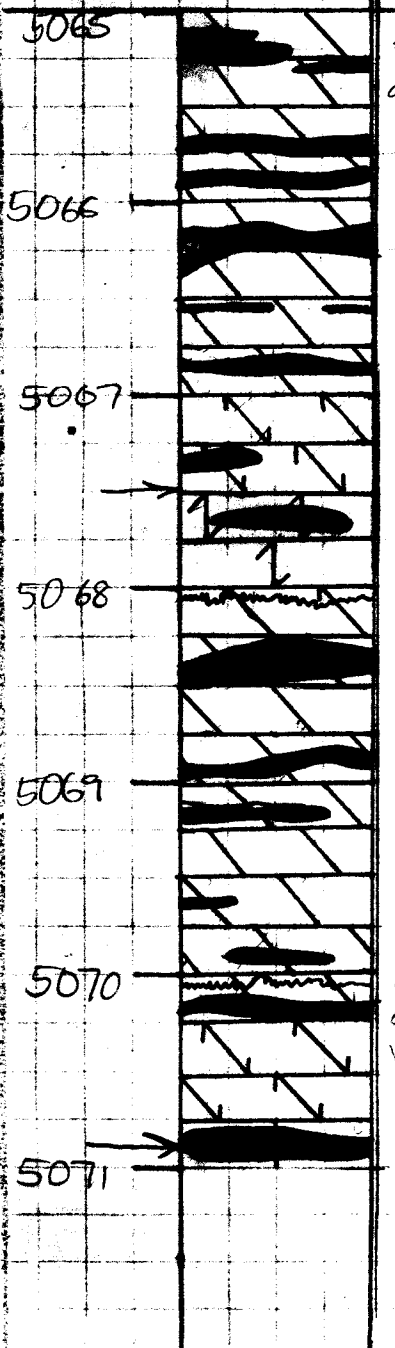
ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
lm wkst	B #					no Fe content
chty lm wkst						slight Fe content
chty lm wkst						
				lt. gry lm wht gry chrt		

NO.	LEASE	SPOT	LOCATION 11-31-18w	COUNTY	INTERVAL	BOX NO.	PAGE



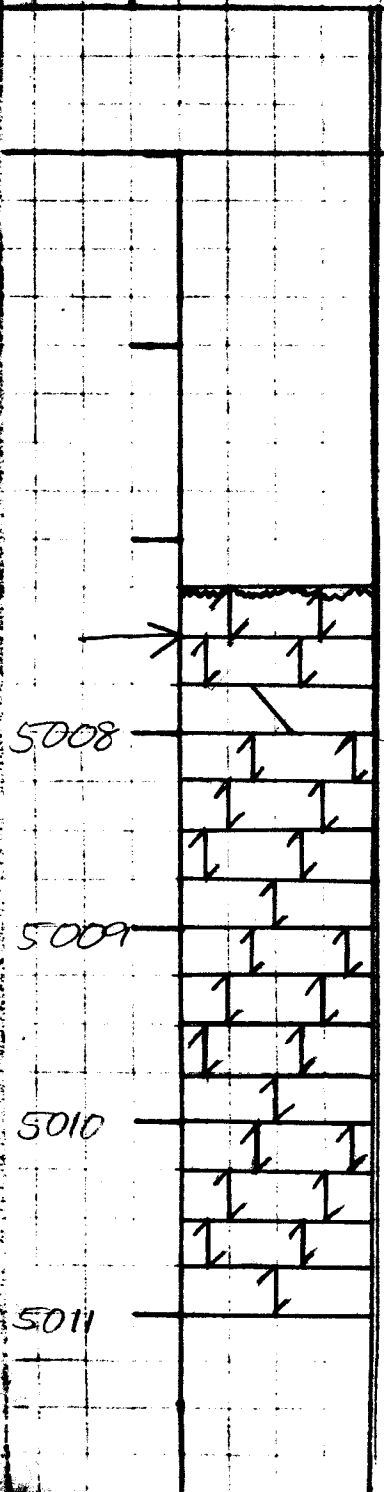
ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
	Y					
lm wkst	Y	G				Fe-content ~ 0 Fe concentrated in fine grained layers
chrty lm wkst	Y					Fe-content decreasing
v. chrty dolo wkst		G				stains indicate layers of low Fe dolomitic CC and high Fe CC ?
	Y	▽				
v. chrty dolo lm wkst	Y	▽ wh. glob. chrt replacing Fe CC ▽		CHT: WH LM GRY		wh. globular chrt replaces Fe cc

NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU B		11-31-18w			1142	



ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
v chrty dolo lm wkst	Y			dk gry + md gry wh. chrt		
	Y	ANHYDRITE		lt brn ANH in dk gry + wh. chrt in gry lmst		lt. brn anhydrite in chrt nodule chert has white, porous, Fe-CC rims and dk gry solid chert centers. Stains suggest Fe-bearing calcite alternating with brn streaks of nonferroan CC (or Dolomite?) dk brn mineral does not etch or take ARS as well as lighter CC
	Y in chert B # ϒ ϴ f ab ab c	pkst might actually be dolomitized grst				
		FR				
	Y			wh chrt in gry + lt brn lmst		chert contains calcite in rim
		Δ				
	Y	Δ				shale seam
		Δ				
v. chrty dolo. lm wkst	Y ϕ	ⓖ r Δ	BP	chrt: wh lmst: gry + lt. brn		dolomite more common in darker streaks
		Δ				Chert is white, v.sl. porous w/ black mottling

NO.	LEASE	SPOT	LOCATION	COUNTY	INTERVAL	BOX NO.	PAGE
1	BOISSEAU "B"		11-31-18	COMANCHE			



ROCK NAME	FOSSILS AND PARTICLES	DIAGENETIC FEATURES	POROSITY	COLOR	OIL STAIN S M H	COMMENTS
						Cored interval is mainly mid-to upper Warsaw possibly Salem
cherty skel lime pkst	Y			lt brn		
lime mdst cherty skel. lime pkst	Y					brachs + crinoids silicified
	Y					silicified brachs
	Y			lt brn		

GAS

B5007 1×2 too thick

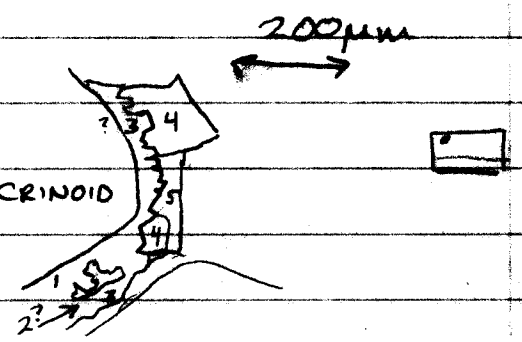
Crinoid-bryozoan dolograinstone or dolopackstone

⊖ ab ⊖ ab ⊖ c ⊖ r (▭ to left of pellet)

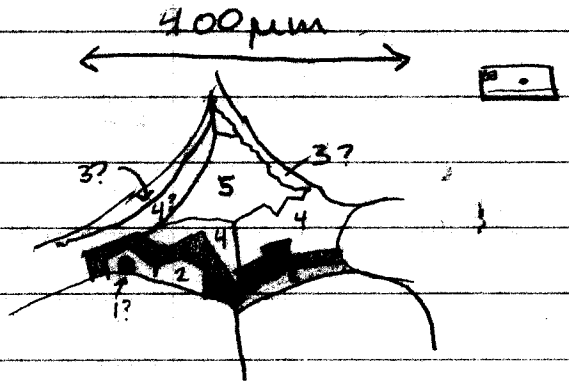
- crinoids are pervasively silicified
- dolomite (range 10 μm → 180 μm, $\bar{x} \simeq$ 25 μm)
- peloid (3 mm) has similar size dolomite as matrix and is penetrated by crinoid
- crinoid size (200 μm → 2 mm)

possibly same generation

1. PB_3O (non Fe CC)
2. PB_3O (Fe CC)?
3. PB_3O (non Fe CC)
4. $PB_{3+4}O$ (Fe-CC)
5. PB_3O (high Fe CC)



?? 1. PB_3O (non Fe CC)
2. PB_3O (Fe-CC)
3. PB_3O (non Fe CC)
4. PB_3O (Fe-CC)
5. PE_4 (high Fe CC)

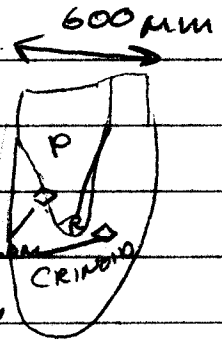


*MIRROR IMAGE

B5015 2×3

Crinoid dolowackestone
Øc Øc Øm

dolomite (range 5 μm → 150 μm, $\bar{x} \simeq$ 20 μm)



1. PB_4O (nonFeCC)
2. $PE_{4.5}O$ (FeCC)
both cement generations preceded dolomitization

B5015

crinoid-brachiopod dolowackestone

⊟ ab ⊗ ab "Lyopora supports" ab ⊗ c

dolomite (range 20μm → 150μm, $\bar{x}$ ~ 30μm)
some crinoids are ferroan c c

B5015

Crinoid dolopackstone (wackestone?)

⊖ ab ♀ minor "Lyopora support"

crinoids range from 200μm → 9mm
silicified "Lyopora supports"
dolomite ranges from 20μm → 100μm

1 BOISSEAU "B" B5019- (2+3)

Crinoid-Brachiopod-Bryozoan grainstone

⊖ ab ⊘ ab ⊼c #c (+ brach spines

+ "Lyopora supports"

PE4O (+ CC overgrowths on ⊖)

PE4() (Fe-CC, sometimes PE4O)

chert replacement of brachs + ⊖ common

B5019+ 2x3 too thin

Crinoid-Bryozoan Grainstone

ø ab ψ ab ϕ c # ab

some dolomite in WP ($\bar{x}$ ≈ 20μm range 10μm → 40μm)
crinoids range from 400μm → 1600μm
chert common in brach frags + crinoids

1. PE_4O (non Fe cc)
2. PE_4O (Fe-cc)

B5020 2×3

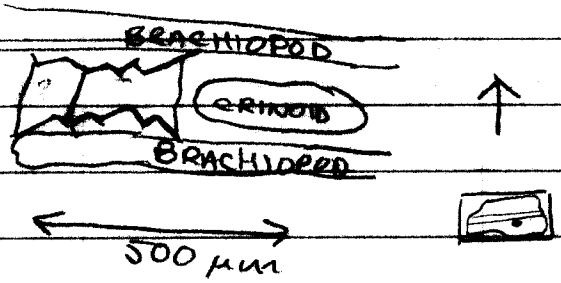
Crinoid-bryozoan-brachiopod grainstone
Ø ab ∞ ab #c ∅ ab

- brachiopods are typically silicified
- some brachs are pseudopunctate

- some brachs are impunctate

- some dolomite in patches of matrix
- crinoid sizes (300μm → 2mm, $\bar{x} \simeq$ 800μm)

1. PB_4 (on Brach) or PE_4O (on crinoid) (non-Fe CC)
2. PE_4 or PE_4O (Fe-CC)



B5020 2×3 ~~too~~ thick

Crinoid bryozoan cherty, slightly dolomitic grainstone

ϑ ab #ab ♈c ♌c

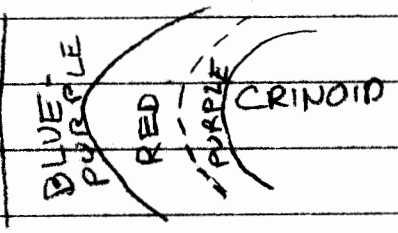
dolomite in WP ($\bar{x} \approx 30\mu m$)

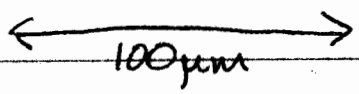
1 PE4O

(Fe-CC → → non Fe CC)

2 PE4O

(high Fe-CC)



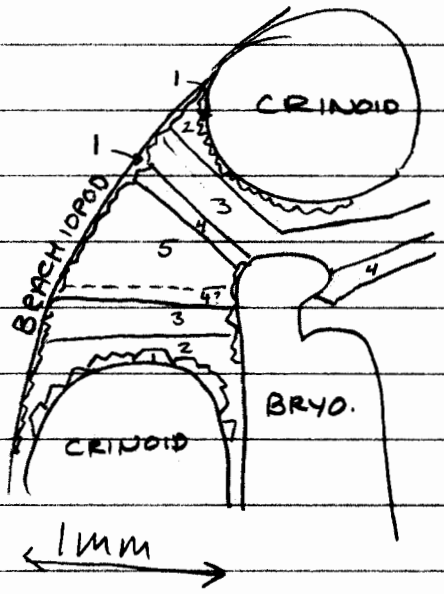


B5025-

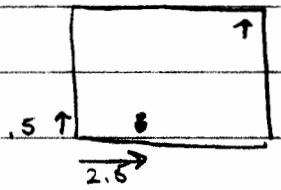
Crinoid-bryozoan cherty grainstone

⊖ ab ♈ ab # ab ⊕ ab + "Lyopora support"

crinoids have disseminated chert in centers
"Lyopora" is heavily silicified on edges



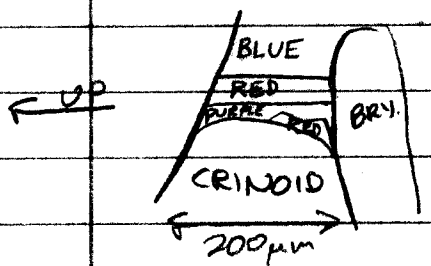
1. (CC) PB_3O red
2. (Fe-CC) PE_3O purple
3. (CC) PE_3O red
4. (Fe-CC) PE_3O purple
5. (Fe-CC or subcrete) PE_4 blue/purple



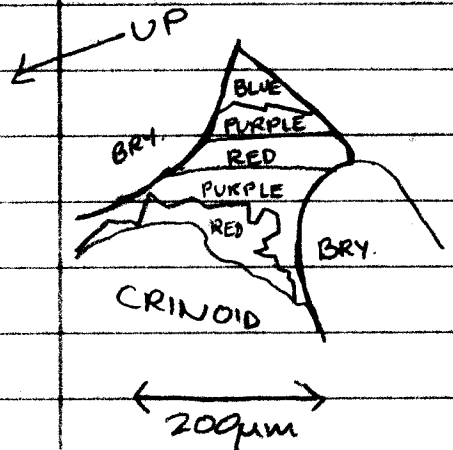
B5025 2×3"

Crinoid-bryozoan-brachiopod grainstone

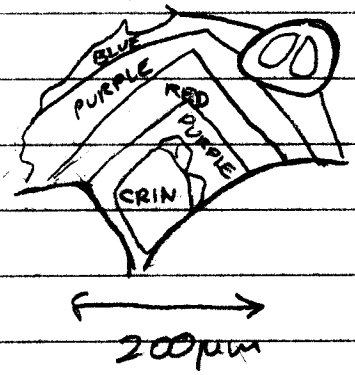
⊖ ab #ab ⊄ ab ⅋c + "Lyopora"



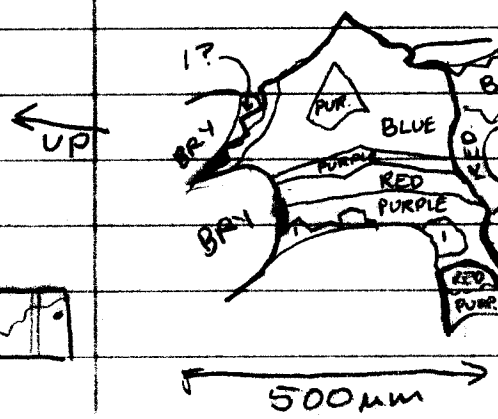
1. PB_3O (non Fe-CC)
2. PE_3O (Fe-CC)
3. PE_3O (non-Fe CC)
4. PE_4O (high Fe CC or Ankerite)



1. PB_3O (non Fe·CC
2. PE_3O (Fe-CC)
3. PE_3O (non Fe CC)
4. PB_3O (Fe-CC)
5. PE_3O (high Fe CC or Ankerite)



1. PB_3O (non Fe CC)
2. PE_4O (Fe-CC)
3. PE_4O (non Fe CC)
4. PE_4O (Fe-CC)
5. PE_4O (high Fe CC or Ankerite)



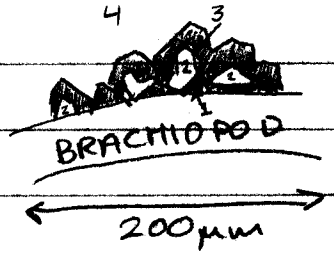
1. PB_3O
2. PE_3O
3. PE_3O
4. PE_3O
5. PE_4O
6. PE_4O

OVER

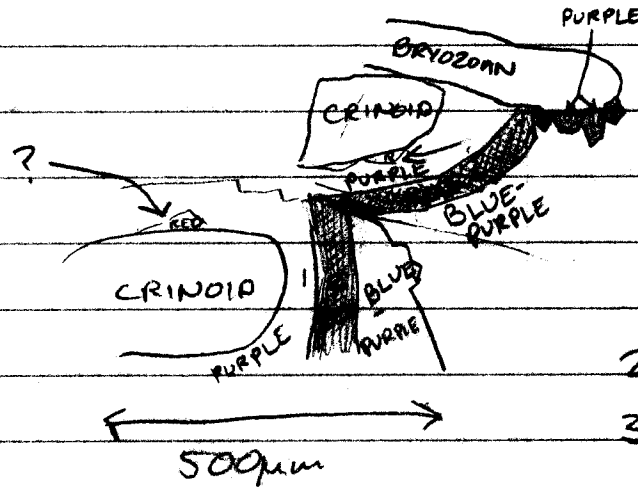
B5025 2×3

Crinoid-bryozoan grainstone
ab ab # ab ab

brachiopods are typically silicified
some crinoids are partially silicified in centers



1. PB_2O (non Fe CC)
2. PB_3O (Fe-CC)
3. PB_3O (non Fe CC)
4. PE_4O (high Fe CC)



? possible PB_3O (non-Fe CC)
1. PE_3O (Fe-CC)
2. PE_3O (non Fe-CC)
3. PE_4O (high Fe CC)

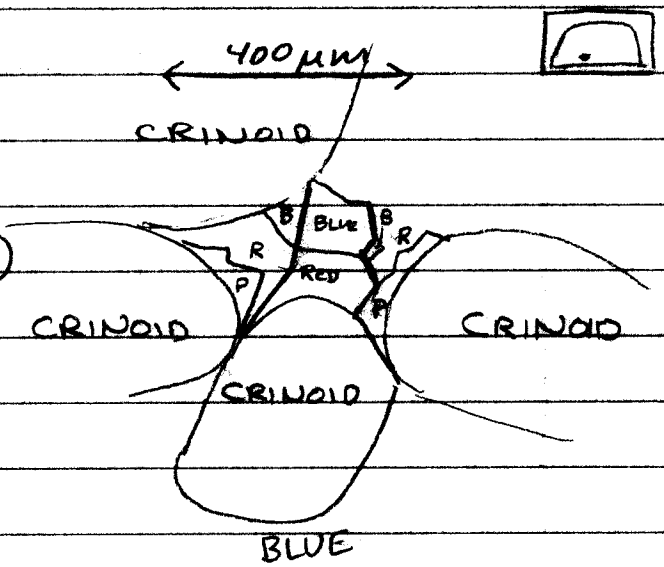
sequence on bryozoan ① PB_3C (Fe-CC) ② PB_3C (non Fe CC) ③ PE_4 (high Fe CC)

B5026 2×3 slightly toothick

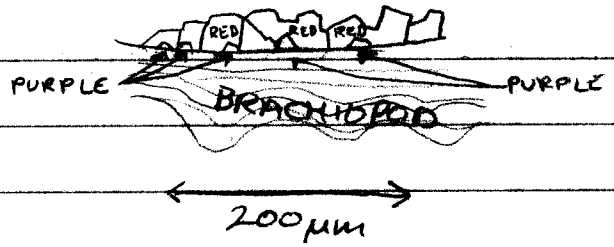
Crinoid-bryozoan grainstone
ab c m m

- very little BP porosity
- oil stain is concentrated in WP in crinoids and bryozoans
- crinoids (range 200μm → 2mm $\bar{x} \simeq 600\mu m$)

1. PB_3O (Fe-CC)
2. PB_4O (non Fe CC)
3. PE_4O (high Fe CC)



1. PB_3 (Fe-CC)
2. PB_4 (non Fe-CC)
3. PE_4 (high Fe-CC)



B502G (2×3')

Crinoid-bryozoan grainstone

@ ab ¥ ab # ab ¢ c

crinoids have some disseminated chert
in cavities
oil stain in WP

PB3-4 & PE3-4O (Fe-cc)

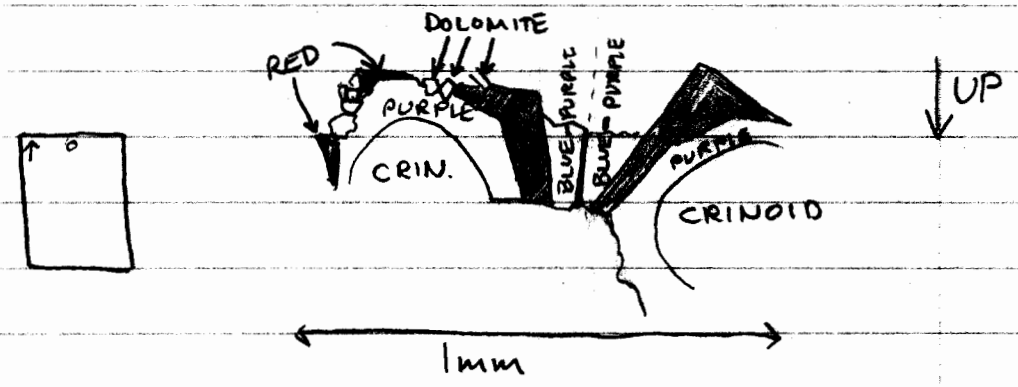
PE4O (non-Fe-cc)

B5029 2×3"

Crinoid-bryozoan (filled) dolopackstone
⊖ ab ⊛ ab # ab ⊕ c

- dolomite (range 15 → 80μm, $\bar{x} \simeq 25\mu m$)
- dolomite primarily in matrix but penetrates grains as well
- What remains of matrix (that which is not dolomitized) is ferroan
- In some cases, PB_3O (non Fe CC) precedes PE_3O (Fe-CC)

1. PE_3O (Fe-CC)
2. PE_3O (non Fe-CC)
3. PE_3O (high Fe-CC)



1 BOISSEAU "B" B5033 2×3"

Crinoid filled-dolopackstone

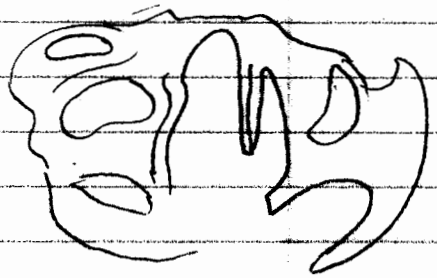
Ø ab ≠c ♈r #min

some crinoids are <200μm & some >3mm

dolomite matrix ($\bar{x}$ = 30μm, range 20μm → 90μm)

crinoids have PE Om (Fe-CC)
followed by PE Om (non Fe-CC)

chert replaces brachs & some crinoids?



← 0.5mm →

B5037-2 2x3"

Crinoid-bryozoan grainstone

⊖ ab #c ⊗c ⊕c

most brachs + some crinoids are partially silicified

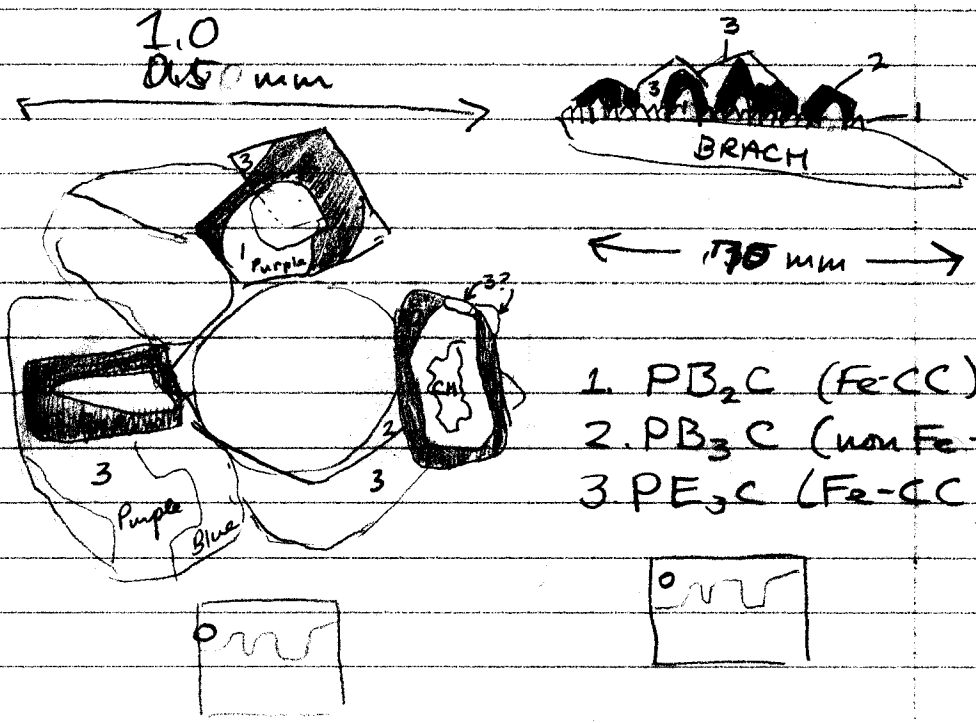
1. PE4O (Fe-cc)
2. PE4O (non Fe cc)
3. possible PE4 (high Fe-cc)

1 Baisseau B B5041 2≠3 two thick

cherty Crinoid grainstone

⊖ ab #c ∮c

dolomite in patches (for instance in WP) $\bar{x} \cong \frac{14}{9}$ µm



1. PE_3O (Fe)
2. PE_4O
3. PE_4O (Fe)
4. possible anhedrite phase of 3

1. PB_2C (Fe-CC)
2. PB_3C (non Fe-CC)
3. PE_3C (Fe-CC)

B5046 2×3

Dolowackestone

θ m ☒ m ϕ m

dolomite (range 15 μm → 80 μm, $\bar{x}$ ≃ 30 μm)

pervasive silicification

some PE_6 ferroan dolomite in VUG

B5041

cherty v. sli. dolomitic lime grst

θ_{ab} 0.15 → 1.0mm $\bar{x}$ ~ 0.5mm

#C ☒ (very fragmented) < 0 ϕ?

1. PE_4 Red
2. PE_4 Purple
3. PE_4 Red } not always present
4. PE_4 Purple }
5. PE_4 Blue

B 5064

dolomite (range 12μm → 200μm, $\bar{x}$ ≈ 30μm)

B67

sli. silicious

Echinoderm dolopackstone + dol wackestone

ø ab #c 8c of

ø ~ 0.4mm

very fine grained particles and very dolomitized

dolomite ~ 0.03mm

layers of wkst + pkst

packstone might actually be dolomitized grst

B5071 2×3"

Crinoid-bryozoan (filled) dolopackstone +
" " dolowackestone (bottom of slide)

□ ab ✡ ab ⊖ c

dolomite (range 16μm → 120μm, $\bar{x}$ ~ 30μm)
crinoid frag. size range 150μm → 250μm

Chanute Mississippian, Bardeau B, T 31 S, R 18 W, CNW SE sec. 11, Comanche Co., KS.

2142 KB

5000

5

5010

Thallus → 5015

5020

Algal zone 5025

5030

Algal chart 5035

5040

45

5050

55

5060

5

5070

5155 TD

LS, greenish-tan, highly leached / vuggy, Lyrapora, Wortheniella

LS, tan

LS, Karst-tan fenestrate bryozoans, Lyrapora, Tournayella

Sh, green, glauconitic, platy Orbiculoidea

LS, greyish-tan, pelmatozoan, bryozoan, Lyrapora, Cranaena, dolomitic / "Dillonoy" texture

LS, lithic, greyish-green, mottled, sponge holes, spicule, brachiopod with brownish-green, chert nodules, Anthracospirifer (chead.) type

dolomitic, silty

salty, tannish green, chert nodules, dolomitized

LS, fossiliferous, brownish tan, pelmatozoan

LS, "salt + pepper" in tan, echinodermal, fusulinid

LS

LS, mottled, dolomitic, silty

LS, silty, platy tan, sponge spicules

LS, grey, silicified crinoidal stems, Archaeolithophyllum

LS, grey-green, bioclastic, silty lime, thin chert beds

LS, greenish-tan, silty, bioclastic, chert nodules, endothyrids / sponges

" " " silty, bioclastic, chert nodules / sponges

" tan, bioclastic, silty, phylloid algae, chert nodules / sponges, glauconitic

" " " silty " " " " + bryozoan, extra. dolomitized

" " " " " " "

" " " " " " "

sphalerite + fluorite in chert nodule

Sphalerite

"

"

Cuttings 5160 Endothyrids in fresh chert with sponges in it

Barker B

Ore is all Warsaw 1 2 3 Miss

Osap?

Osap?

4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000
5100
LKN
MARM
CHER
MISS
ANADARKO 1-Boisseau B elev. 2142 KB
NW-SE 1-3S-1Ew Comanche Co.
Alford Fld.
DETAIL LOG
5" = 100'
SPONTANEOUS-POTENTIAL
millivolts
DEPTHS
RESISTIVITY
ohms – m²/m