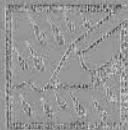


STATEMAP 2006-2007

# 1-347



*Put in the Rain*

ALL-WEATHER

Geological

FIELD BOOK

No. 540 F

INCH CM

"Rite in the Rain"  
ALL-WEATHER WRITING PAPER



## ALL-WEATHER GEOLOGICAL FIELD BOOK

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Project \_\_\_\_\_

This book is printed on "Rite in the Rain" All-Weather Writing Paper - A unique paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather. For best results, use a pencil or an all-weather pen.

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Location \_\_\_\_\_

Date 7-11-06

Project / Client

STATEMVA

W.S. Quad - NW corner  
 unpaired drainage to right

#1) 35° 51' 18.2"  
 92° 52' 28.3"  
 + 26 ft.

Limestone, micritic - vfg (Gray w/ shd. Dark  
 Gray fresh, Bedding thinning downward  
 (thin to thick), crenulated wavy?

Bedding (NW-E trending possible  
 joint face) persistent - Contact

Covered - Zones of crinoid fragments

Secondary jointing N00°W - <sup>Brach. nodds</sup>  
 N50°W \* <sup>some white</sup> petroswell

Thunder @ 1330 hrs.

\* - productive BRACH collected

FLAT lying #

Presume Pitkin lms.

Thick beds xln lms - Thin <sup>bed</sup> vfg.

Location \_\_\_\_\_

Date 7-12-06

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

~~... of Creek~~  
 #2

35 51 22.6  
 92 52 23.6 ± 23'

Highest outcrop of Pitkin

7-12-06 - Rain

- Calif Creek Rd - 0850 hrs

#3 35 52 18.7  
 92 50 14.4 ± 30'

~~Balesville/Fayetteville Contact~~

Flat lying thin bedded ss <sup>to med.</sup>

~~Balesville~~ Sandstone, fine bedded, Brown lat. shd.  
 Brown tan w/ shd, thin bedded, some  
 medium bedded, underlain by black cln  
 shale, overlain by shale @ 4" thick

Mamm?

Collected xln lms. Below shale  
 at adjacent Drainage

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#4 35 52 14.0 ±22'  
92 50 16.1

mf? vfg lens, some Calcite  
veins (small) <sup>vfg</sup> fossiliferous.  
readily fissiles in Hcl - westward  
surfaces <sup>orange bedded</sup> buff. Fresh - white.  
medium bedded, not persistent,

Also Some

white chert w/ calcite Blobs-

#5 35 52 7.6 ±20'  
92 50 26.0

25-35' thick thin bedded lower  
Thick bedded upper - Gps  
taken at creek level -  
Sandstone, Gray, <sup>fresh</sup> vfg, moss  
covered, with buff, Basalt  
contact covered.

#6 Clay Shale, with. Blk, <sup>gray + Tan.</sup> fresh Blk, ~~etc~~  
~~Dark silty~~ silty, some minor silt  
mf? not persistent, contacts rounded  
Flat lying -

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale

N50°E  
N25°W } Joints in shale  
N75°W  
N5°E } 35 52 6.2  
Shale Pit A 92 50 25.2 ±16

#7 N80°W; 5°N  
35 51 57.9  
mf? 92 50 24.5 ±30'

Joints N75°W N45°E  
abray  
Sandstone, calcareous, fossiliferous,  
very interbedded w/ shale, - sandstone  
thin - thin bedded, in pond drainage -  
shale. Black, non calcareous -

#8 Black shale <sup>silty</sup> w/ limestone concretions.  
nodes Photo - in creek bed - thin bedded

mf Shale calcareous in creek bed - non-cal-  
in A. A. A. out crop -

60°E 25°W } Joints  
70°E E-W }  
60°W

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

X ~~N45°W~~ ; 30 NE

35	50	22.8	± 24'
92	50	23.9	

Lms nodules = dark gray, fine grained  
\* Strong petro) traces near

- Fayetteville slab in Calf Creek  
#9) See Richards notes = mf =  $\begin{matrix} 35 & 50 & 17.1 \\ 52 & 50 & 11.6 \end{matrix}$  } low  
Attack

#10) Exposure of mf in Calf Creek

35	50	11.5	± 20'
92	50	7.1	

Joints = NW<sup>u</sup>W  
N20°E

[ - N50°W, 20° Dip - ]

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

~~#10~~  
#11 -

35	49	55.1	± 23'
92	49	54.3	

mf

Black shale → thin bedded, fissile

Below outcrop of Lms - probably  
mf =

#12

Limestone, Dark Gray, fine gr. Lt. Gray  
shaly xls, fossiliferous Bedded.

MP  
Gastropods - Brachyozoa - Archaeozoa  
Columnar corals - Collet Nautiloid

~~Fayetteville~~  
Fayetteville ~~Formation~~  
\* Richards collected  
In situ Bedding  
upper - planar  
Lower

Lower outcrop exposure thin bedded  
Bedding thickening upward

35	49	52.2	± 23'
92	49	47.8	

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

1 - Base covered.

Near Corners - MP  
Base of pitkin - MF

~~#12~~

35 49 53.1  
92 49 48.5 ±24

- CORAL Collected

- Light Rain - 7-13-06

#13

Shale, Black, <sup>high</sup> fissle, seen in crack  
Bed - Below Quat, Rd. top Quat.  
Shale in drainage adj to Rd  
County Rd 5 - Marsena  
Rd

350 51 42.5  
92 48 12.1 ±25'

MF?

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

N-  
Outcrop West side of Rd

Scale

#14

Shale, Black, interbedded w/ Dark  
Grey, Lms. L. Grey w/old shale  
Dark Grey trash, petro. color.  
Lms thin to med. bedded  
- Shale - laminated bedding - Clay  
shale -  
MF.

Joints - N45°W  
N-S

35 51 27.5  
92 48 19.1 ±26

#15

Limestone, Dark Grey, fine grained,  
Petro color, Rd ditch @ powerline  
MF - mostly covered - thin bedded.

35 51 22.3  
92 48 33.6 ±19'

#16

35° 51' 35.3"  
92 48 45.8 ±22'

Sandstone, with Ben/ton, fresh buff, orange, m. calc. for  
Zoned bedding, Buried, <sup>oxidation</sup> Sandstone in ss. fr. grn.  
OXIDATION throughout zone samples - mostly  
Planar bedding, some X-bedding - thin to  
med. bed. Thin clay shale, orange w/old  
Brown fresh - thin

#17 - Shale Pt  
 Shale, Black & orange, brown - Clay,  
 fissile, some lenticular bedding.  
 Some with to Brown - 60-80' thick?

Phc

Pdm

Joints - N-S  
 N85°E

35 51 33.3

92 49 8.2 ±17'

#18

Shale/sandstone contact  
 with Spring middle Block?

Phc

Pdm

Sandstone Orange Brown Fresh  
 Brown with, Iron oxide, fine  
 Grained,

Phc?

Top shale, base ss - lycopods -  
 in vfb, vfg. ss. ~5' thick.

35 51 29.7

92 49 18.6 ±25'

#19

Sandstone - Orange Brown Buff with  
 orange to rose fresh, med-grained -  
 Lenticular Bedded, Trough Bedding -  
 st. Horizontal weathering, thin to med.  
 Bedded -

Pdm?

35 50 33.1 ±21  
 92 49 4.1

#20

7-17-06

Album

NE portion of with Spring Quad  
 Hensley road off Hwy 27  
 to North - Along Bear Creek

Huntsville?

members

of Batesville?

APPEARS  
 included?

SS  
 Lms. 15' thick  
 siltstone

35 51 38.8  
 92 45 16.3 ±17'

Limstone fine to coarse - grained,  
 with light <sup>Brown</sup> clay, light to dark  
 gray fresh <sup>shale</sup> petroliferous and fresh  
 Branch fossils, flattened trilobitic Grains  
 thin bedded

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Siltstone - Green w/ thd, Dark Grey to Blk.  
Fresh. very thin bedded (0.5cm)  
micaceous.

Sandstone - Brown w/ thd, orange Brown Fresh,  
v. Eq., appears well sorted w/  
10X Loupe, Angularly undet.  
moderately resistant, thin to  
medium bedded, x-bedded-  
iron laminations?

Flat lying

Sandstone - Burketon Hdl.

#21 Lt. Green w, Green Fresh, v. eq. calcareous,  
sorting & angularly undet. w/ 10X -  
some x bedded - solutioning Along joints  
~ 10' thick, fossiliferous towards base  
Branches Abund. in zones.

35 52 13.1 ±29'  
92 45 29.4

Joints:	N40°E	N85E
	N80°E	N15W
	N70°W	N45E
	N5°W	

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

mf  
#22 <sup>92%</sup> Shale, Black Fresh, Dk Grey Blk w/ thd.  
fossil, some calcareous concretions,  
sily - 1/2" Exposed in creek bed - trace  
petro. odd. Some int. sily shale.

35 52 26.0 ±9'  
92 45 33.8

#23 mf  
Ck Shale, Black Fresh, Dk Grey w/ thd, Fossil,

35 52 7.3  
92 45 16.9 ±13'

#24 Spring →

35 51 28.9 ±18'  
92 45 3.1

#25 up creek on trail to Bear Creek  
July 27 Bridge  
Sandstone, <sup>med to fine</sup> fine Gtz, Calcareous  
v. eq, some angularly undet.  
Thin bedded, fossiliferous - Brachs.  
Abundant in zones (Lingula?)



Location \_\_\_\_\_

Date 7-17-06

Project / Client \_\_\_\_\_

Siltstone - Very thin bedded, Green  
with Dark Green to  
Black Fresh

Intabedded

siltst 23'

SS 26"

siltst covered

35 51 27.1 ± 73  
92 45 1.9

Joints: N15W  
N25W  
N10E  
N10E

Bedding planar, Some undulation  
in Bedding? Dip only 1.5°

#26

7-18-06 Wassen Hollow

Shale, Lt. Gray to Blk. with Black  
fresh. Fissile, Clay shale

35° 51 5.5 ± 22'  
92° 48 39.2

Lower 2.5' Spt. Corection - Photo

Location \_\_\_\_\_

Date 7-18-06

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

Joints:

N45SE

N-S

N15W

N15W

#27

MP

MP

Limestone, Ben. with. Dark  
Gray fresh, ffg. interbedded  
w/ shale, Lt. Gray to Blk. with,  
Black fresh, fissile, 4" thick  
Lms. with 3" shale - thin to  
med. bedded -

35 50 53.4 ± 28'  
92 49 31.4

Joints: N15W

N45SE

#28

MP

Box Canyon in Secondary drainage  
MP - Pitkin

Limestone, Gray with, Dark fresh,  
fine to, crystalline, thin to med  
bedded, Crinoids, Archæonid  
Bull 2007

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Do not see upper contact - need to  
Access on Rd. top of Downs Pt.  
Area.

35	50	39.5	$\pm 23'$
92	47	40.5	

Joints N45E  
N80W  
N50W

Hot \*

#29

Limestone, Gray with chert, Dark  
gray chert, vfg. Very thin  
Bedded, overlain by massive  
Bedded Lms, xln, oolitic-  
fossiliferous Lms.

MP  
No MF

35	50	41.9	$\pm 24'$
92	47	38.3	

oolitic  
 $\left. \begin{array}{l} 30' \\ \text{Xln Lms} \\ 1' \text{ Xln Lms } \\ 2' \text{ vfg thin bed} \end{array} \right\}$   
 vfg Lms  
 were conducting  
 fract.

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

#30

Base chert, Lms. Lt gray chert, Dark  
Gray chert, some minor fossil fragments -  
Thin ~~bedded~~ bedded

MP

Limestone, xln, fossiliferous - 220' up.  
Section -

35	50	46.4	$\pm 33'$
92	47	33.9	

#31

Uppermost shale interbedded w/  
vfg Lms. - Suspect contact  
Between mf/MP between  
pt. #30 & #31

35	50	47.6	
92	<del>47</del>	<del>33.5</del>	$\pm 35'$

#32

mf. Shale, R. in chert, Dark chert, Limestone  
few ~~some~~ concretions, probably  
float.

Shale  
Pit

35	51	42.9	$\pm 20'$
92	<del>47</del>	31.9	
	46	35	

#33 35 51 49.2 ± 34' See Richards  
92 46 13.0 notes

#34 35 52 53.7 11  
52 47

7-19-06

#35 Sandstone, Buff Gray withd,  
Lt Gray <sup>with some brown</sup> ~~with~~, bedded, thin to  
medium <sup>at top</sup> bedded, appear chunky in outcrop,  
calcareous, fine grained, with non calcareous  
35 51 16.4 ± 21'  
92 45 40.1

X-bed. flow direction to South

Also: Sandstone present just below  
Cemetery

7-19-06 Hot <sup>1000'</sup> Boyce Creek

#36 Excellent outcrop next to church.

Limestone, Lt. Gray withd, Dark Gray  
fresh, xln, some fossils (BRACHS)  
Present on withd surfaces.  
Bedding visible in Creek Bed.  
Fossils plentiful. S. of A. N.E.

Strike ~ 10° NW, only slight dip to NE

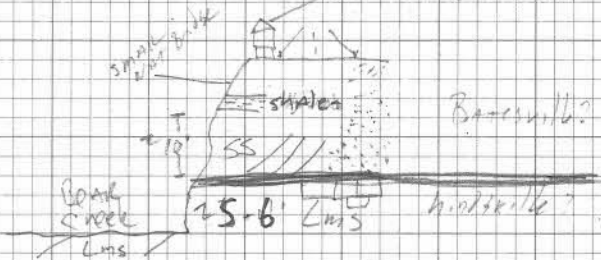
Points: MS on

E-W

Overlain by  
~~Thin bedded~~ Limestone, w/rd Gray, fresh  
Gray, calcitic to micritic, BRACHS, BRACHS  
sampled Hinksville?

Also 2" thick bed of Gray Lms w/ abundant crinoids

Overlain by: Sandstone as described  
in #35 thin to thick  
Bedded - calcareous  
see with direct



viewed looking North: O.T.S.

- Also just below last 5-6' shale layer  
~ 1.5-2' thick.

35 51 9.6 ± 16'

92 45 41.2

#37

Hot 100°F - Keep hydrated-

W/bv?

Sandstone, yellow-brown ~~thin~~ fossil.  
 Lt. Gray, vfg., calcareous, extensive  
 Lacks fire in HCL, cement lashed out?  
 x bedded; 2-4" sets in horizontal,  
 Thin bedded, few fossils - fossils frag.  
 (Crinoids) present in thin beds, persistent

35 50 0.9 ± 20'  
 92 46 4.7

Joints: N30°E

N5°W

N/S

N80°W

Boyce Behannon Proj.

#38

MF

clay  
 Shale, Black fresh, gray to  
 Blk with red, fissile,  
 Jointed - flat lying

N45°E

N60°E

N/S

N10°W

35 49 57.8 ± 27'  
 92 46 41.7

#39

A

Phc

Sandstone, vfg. - ~~grayish~~  
 Brown with, Bluff - some red fresh  
 some Fe oxide stained grains, mollus  
 contacts covered. Local, this -

35 49 49.9 ± 32  
 92 47 7.4

#40

\*

Phc

Sandstone, Brown. with Bluff fresh  
 massive bedded, x bedded trace  
 fossils, vfg. to fine, Qz. ss.  
 some Fe oxide grains. Prominent  
 Bluff former - 30-35' thick -  
 Fe oxide grains are banded-laminar -

35 49 59.4 ± 30  
 92 47 11.7

#41

MP

Flourite  
in float  
MP

Limestone; Gray, fossiliferous, Crinoids,  
 Branches, Base (a) 35 50 0.0 ± 20'  
 92 46 55.0

\* Copper Head \*

Base outcrop

(b) 35 49 59.9 ± 30  
92 46 53.1

#42

MP?

Limestone, fine grained, ~~grayish~~  
 upward to coarse grained, brown  
 with, Dark gray fresh, Abundant  
 Branches & crinoids.  
 May be near contact w/ MP?  
 SWARKY Thin bedded -

35 50 3.5 ± 35'  
 92 46 36.9

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#43

Pittkin / Fayetteville  
contact - rounded-Limestone, xln, fossiliferous, some fine  
to coarse.Black shale & micritic lens  
inter-bedded below -35 50 24.2  
92 46 30.9 ±18'

#44

Sulphur Spring Hollow Coal

7-20-06 35 48 17.1 ±17'  
92 47 0.9

MP

Limestone, xln, Gray fresh, Green  
yellow, v. thin to thick bedded,  
fossiliferous, Bryozoa - Archimedes,  
Crinoids, Branches, Phoro crinoid  
Oryx, conical nautilus -  
in creek bed.

#45

Sandstone - Buff to Tan, Fresh, white,  
Buff fresh, v.f. to f.-grained or ss,  
some Fe oxide grains, fossil molds. Some  
Mn staining, very thin bedded.55 49 57.4 ±19'  
92 46 47.6

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

Overlain by: Sandstone, orange-brown,  
Buff - pinkish fresh, x-bedded  
Laminations, outer core probably  
Iron stained - thin bedded.overlain by: Sandstone v.f. G, Red Brown fresh,  
DK Green ~~to~~ fresh, some iron  
staining, very thin bedded - ~~thin~~  
- outcrop in rd ditch -Joint: news<sup>o</sup> Horizontal bedded -  
- Sample #45 -

#46

Sandstone, Bluff face, massive bedded  
orange with red.

RW?

- GDS on top of bluff -

35 47 55.3 ±21'  
92 46 50.3

Sample for description.

#47

Sandstone, Brown, friable,  
medium-grained, or sand.  
Appears moderately sorted  
small outcrop @ top of knob35 47 42.7  
92 46 45.3 ±20'

Location \_\_\_\_\_

Date \_\_\_\_\_

Project / Client \_\_\_\_\_

- Lick Creek -

#48 Silty Shale, Black fresh, Black oxidized,  
interbedded w/ blue mic. ls - silty - sandy  
lms. ~~is~~ med. bedded - lms appears  
to have slight dip to South.

mf?

N-E; 6°

- EW; 6° South.

in creek bed GAS Taren ~ 40' @  
bearing of N25°E Fayetteville in creek bed

35	48	12.0	?	Ferrous GAS-
92	47	5.9		DATA - SEE PLOT

#49 Pitkin/Fayetteville CONTACT  
2/10 up section from last pt.  
CONTACT spring present -  
cool breeze issuing. cavern?  
not large though. overlying lms  
Block may have slumped? - covered

35	48	3.7	± 25
92	47	4.6	

#50 Quarry  
Pitkin lms - Revisit out of time  
to any 50' + High wall -

35	48	11.9	± 17'
92	47	5.9	± 17'

Location \_\_\_\_\_

Date 8-1-06

Project / Client STATEMAP 06-07

Bene Creek E of Boye Bohannon Place - Scale

In Creek bed -

#51 Fayetteville/Batesville  
CONTACT  
- In Creek bed -

Gray - Calcareous ss <sup>1/4" g</sup> overlain by  
Black fissile clay shale  
some silty, silty shale.

35 49 53.1

92 46 15.6 ± 12'

Well developed solutioning

Along joint sets -

Photo ~~at joint set~~ ~~cut~~ ~~cutting~~  
~~along joint set~~ ~~cutting~~ ~~Photo~~

Note: Upper ~ 2' oolitic lms, rip up  
clast, fossil frags.

#52 Data Pt Pitkin lms -  
in Creek Bed - Some oolitic  
fossil frags - Archonites

35	48	6.2	± 25	Orinoids
92	48	3.8		Archon.

Joints: N25°W  
N10°W

Corbel  
Newtalsid

#53

Pitkin Dam Pt

100' +/-?

Lms. Lt Gray w/d, Dark Gray Crest,  
 coarse grained, fossiliferous,  
 oolitic, Abundant Crinoid frags,  
 Beds, Mediana ~ 1 ft thick  
 outcrop in creek bed.

Joints: N50W  
 E-W  
 200SE

35 47 47.9

92 48 16.2 ±25'

Also: some fine Grained fossiliferous  
 Lms.

#54

Pitkin / Cave Hill

CONTACT

35 47 30.0 ±22'

92 48 12.0

Lms, overlain by Gey to Blk Clay  
 shale - fissile,

Interpretation: ss blocks - interpreted to have  
 slid down from above

Joints:  
N50W

E-W



#55

Sandstone, fine Grained, dk Brown  
 w/d, Beige / orange / gray fresh,

Cave  
hill?

Fe Banding, some limestone layers,  
 Lenses, ~2' thick Beds - up to 23' Beds,  
 some thin Beds ~2" thick. Thin to

Pitkin?

thick Bedded. To true thickness

Exposed in Creek Bed ~ 7' ±

Contains Crinoid 50% of

Sandstone tested fished in HCL

35 47 20.2 ±32'

92 48 16.9

8-2-06

Piney Creek → Very large main sink  
 Branch to street dry - ↓

#56

Limestone, Lt Gray w/d - Gray

Crash, coarse x. i. some oolites,  
 fossiliferous - Bedding w/d.

Pitkin

35 48 26.4 ±20'

92 47 56.2

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

STRIKE + DIP:  $N85^{\circ}W, 8^{\circ}S$ 

#57

P. H. in Lms. - Light Gray  
 w/td, Dark Gray fresh, coarse  
 Grained, fossiliferous, Bryozoan  
 Archamedites - some interbedded, v.t. Bedded  
 s.t. st. gray w/td, dk. Gray  
 fresh, calcareous - wavy bedded,  
 Thin to medium bedded, solution along  
 $N85^{\circ}W, 6^{\circ}S$  Joints -  
 Persistent

35 48 31.0 ± 27°

72 48 2.0

Joints:  $N25^{\circ}E$  $N40^{\circ}E$ 

E-W

 $N5^{\circ}W$  $N35^{\circ}E$  $N45^{\circ}E$  $N20^{\circ}E$ 

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

#58

Limestone, Green w/td, Dark Gray, blk  
 fresh, v.t.g., fossiliferous, overlain by  
 clay shale, Black fresh w/td, fossiliferous  
 Archamedites - <sup>CRINOID-RUSSE</sup> BRYOZOA - some  
 discontinuous interbeds of v.t.g.  
 DARK GRAY Lms. fresh, buff w/td  
 to Blk shale Brown

I.M.D.

I.M.D.?

UPPER  
EXTREM?

- stamp Blk?

shale ~ 10'

Photo Archamedites →

Lms ~ 8"

Lms ~ 1.5'

silt shale ~ 5" w/td

N.T.S.

Lms ~ 4.6'

@ creek bend

35 48 51.7 ± 25°

92 48 16.0

#59

Tops of shale from pt # 58  
 overlain by Limestone, thick  
 bedded ~ 3' E, prominent  
 block tetrad long, Top covered  
 fine grained Lt. Gray w/td, dk  
 Gray fresh, fossiliferous

I.M.D.?

Poor GPS - interpolate pt.

Large crinoid fragments in

from side drainage. Joints: N-S E-W  
 $N45^{\circ}E$   $N65^{\circ}E$   
 $N55^{\circ}E$   $N70^{\circ}W$



Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#60

Pitkin - ~~Dana Pt. No Contact~~

Lms, interbedded w/ shale,  
Lms. become thin bedded &  
fine grained - plant fossils  
present - Bryozoa - Annelids

Imp?

#61

Pitkin - Limestone, interbedded w/ shale,

fine grained, fossiliferous, calc. to  
Notice dip - xbedded, med. to  
thick bedded.

Imp?

N45°W; 9°SW

35 48 <sup>00.6</sup> ~~55.1~~ ± 37'  
92 48 76.0

#62

Conglomerate - Care Hill / Pitkin

Basal Care Hill Conglomerate?

Contact - Limestone concretions,  
Red & Black pebbles, fossiliferous  
Limestone Chert also present,  
Cinoid fragments -

Black pebbles are Limestone vfg.  
Not clear. 2' thick mal. bedded  
21' thick beds - some calcareous

35 49 10.3 ± 29'  
92 48 43.9

overlain by ~10' shale

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

N60°W; 10°SW

#63

Sandstone, ~~Basal~~ ~~Bedded~~ ~~fine gr.~~

Care Hill

W/Bessum withed, ~~Base~~ ~~Orange/Grey~~  
fresh, Fe staining, thin bedded,  
0.5" to 4.5" thick in creek bed,  
forms small bluff in creek

PnC

Drainage - Plane bedded with  
Blocky - ~~astrolitic~~ - plant fossils

35 49 14.7 ± 19  
92 48 46.6

E-W  
N5°W

Overlain by interbedded sandstone  
& shale.

N40°E; 5°SW

#64

Sandstone as described in #63 on

Care Hill

Westernmost interbedded stream  
@ Base - ~~x~~ bedded, plant fossils

35 49 15.3 ± 30'  
92 48 44.5

#65

Limestone, Pitkin, Dana Pt.

35 49 9.0 ± 40'  
92 48 41.5

#66 - Power Line Rd - Aroundhead dig -

upper - Sandstone, <sup>medium to massive</sup> bedded,  
Brown/orange w/td. Brown orange Fresh,

Fe Banding, Some Conical weathering - Fungus

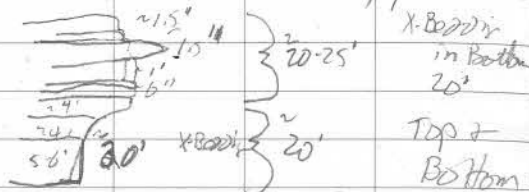
Bluff comes, on some blocks weathering

profile, v. lg to lg., Some Honeycomb

with  
Sp.?

with <sup>at top</sup> although Not extensive through

20-25' thick. dm Cal., Plane Bedded



35 48 28.9 ± 34

92 48 43.4

X-Beds flow to South.

#67

Sandstone, fine to med Grain,

Brown w/td, Beige / orange / Red

mottled, Gray Fresh, Fe Stained Gray

One Hill?

X-Bedded, Thin to thick Bedded

Top & Bottom Covered -

the

35 48 20.4 ± 22

92 48 25.8

Type Section Furo Sulphur

Springs Hollow

Scale

#68

Amillaceous Lms.

Shale, Gray w/td. No Gray Fresh, calcareous

v. thin Bedded in creek bottom - TOTAL

thickness under covered -

MP?

35 48 7.0 ± 20'

92 48 46.2

#69

Shale, Buff w/td, Gray <sup>Beau</sup> Fresh,

Abund. fossiliferous: <sup>Calcareous</sup> MDI, shells, Corals,  
Arenolites, <sup>large</sup> Crinoids, Fossils

Top & Bottom Covered -

MP?

Also some Burrows / worm tubes?

Shale

& Small. 2 1" Diameter <sup>Calcareous</sup> concretions.

Bed

35 48 4.8 ± 15'

MP

92 48 44.2

#70

Limestone, Lt Gray w/td, Dark Gray

Fresh, fine grained, oolitic, Foss. shells

Top & Bottom Covered in Creek Bed.

MP?

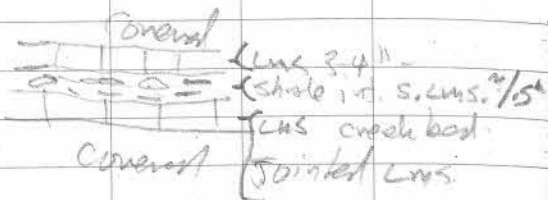
Sinks E-W

N-S

35 48 1.9 ± 20'

92 48 42.2

#71 Day Shale, w. int. sandy lms, overlain by thin bedded lms 3-4" thick in creek bed.



Shale: Lt. Gray to Buff Calc. shaly  
w/ int. Gony. - D. Gony. - Lms. - fossiliferous.  
Discont. v. thin beds.  
Lms: Thin bedded, Buff w/lt. Gray fresh  
fossiliferous, - Brachiopods (N. venosa?)

35 46 0.2 ± 11'  
92 46 40.6

Joints: N60°E  
N80°E  
N10°W

#72 Limestone, Gray w/lt. Dark Gray fresh, med. bedded 2' thick at creek bed. fine grained, oolitic, fossiliferous.

35 47 58  
92 46 39.8 ± 12'

#73 Limestone, Lt. Gray w/lt. Dark Gray fresh, thin to thick bedded - planar - w/lt. bedded - (2-12 feet exposure in creek.)

MP

fossiliferous, fine grained oolitic. Appears to have <sup>substantial</sup> dip.

Unusual Brachiopods, Rhyzotus in zones

Monocline?

Fault? up E. side

N60°E, 7°N  
35 47 59.2  
92 46 39.0  
± 75'

#74

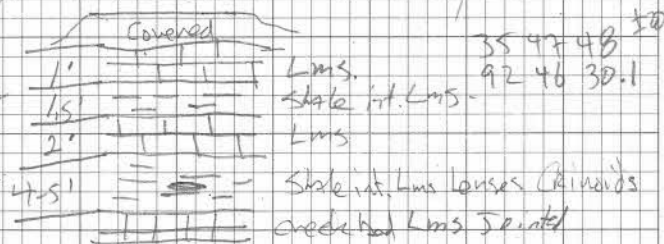
Pitkin - Limestone - Flat lying

35 42 50.2 ± 20'  
92 46 35.2

#75

Limestone interbedded w/ shale

MP  
IMO?



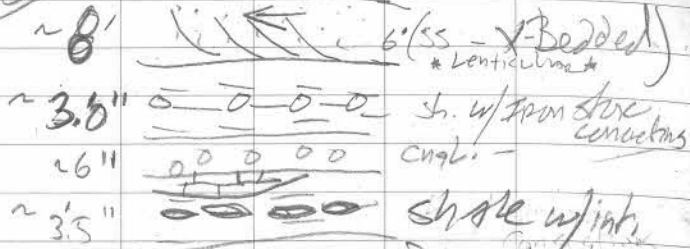
2' → Limestone Lt. Gray w/lt. Dark Gray fresh, thin lms, med. bedded - fossiliferous.

Joints: N10°W  
N60°E

Shale; Lt. Gray to Buff Lms. lenses, coarse grained, fossiliferous - thin, common in lower portion of shale

Viewed looking NE

#76



Imo

3.5' - shale: Brn drk grey, Blk w/ shd, clay, calcareous fissile. Fe concretions - overlain by Lms interbeds, xln. fossiliferous, ~1-2" thick Discontinuous beds -

6" Conglomerate: Limestone, Fe concretions, pebbles in a Lms. matrix. pebbles; ↑ 1" in diameter subangular.

3' - shale: w/ shd grey drk bl, Blk fresh, Chy shale Fe concretions - non calcareous

8' sandstone: fine to med Grained, Brown w/ shd, Beige / orange / red / grey fresh, Fe stained, X bedded some Lenticular thin red shd

35 47 40.8  
92 46 23.8

35 48 10.8  
92 44 41

25' Borden X-Bedded silt Lmy

Scale \_\_\_\_\_

#77

Top of ss, overlain by Int. ss, sh, sandy Lms, - / shale - Bed. Aisle - inter. Lms,

Imo

35 47 43.0  
92 46 21.7 ?

#78

Sandstone, Gray w/ shd / brown w/ shd, Gray, fine Grained, Thin to med Bedded, planar to wavy Bedded overlain by Dark Gray shale, int. w/ Thin Lms, Beds discont.

Imo

fossiliferous - Non Calc. Crinoids present.

35 47 40.5  
92 46 18.1 ?

Joints: N-S

N55°E  
N35°W  
N80°W

N30°E, 5°SE

(#79) 35 47 40.0  
 92 46 40.5 ± 20'  
~~18.2~~ 18.4 ± 21'

Sandstone overlain by shale-

Inv?

Sandstone: Thin to thick bedded-

May be wavy, <sup>vt</sup> fine grained

shale: Gray w/lt. No gray beds

V. thin to med. Discont.

Beds of Limestone, fossiliferous

Archeolites present (More

Addn. of fossils near

Limestone Beds) Beds 2-6" thick

and under, highly fossiliferous

Rugose, Archeolites, crinoids

\* Very similar to Lms in shale @ Payton Creek Rd. Cut

Sulphur Springs

8-9-06

(#80)

FAULT - Small fault in shale

FAULT ORIENTATION:

N70°E 31°SE

ONLY 2-6" of offset -

Basal on Fe Concretion Orientation

35 47 37.6 ± 23'  
 92 46 10.5

(#81)

Cave Hill / Prairie Grove (w. H.S. 50?)

Contract

OK to Gray Shale overlain by Bluff

forming MASSIVE Bedded SS.

Sandstone: 40-50' thick Gray, Med. Coars.

Med. Fresh - Brown, Gray, yellow/tan,

fine to med. grained, G2 SS, Bottom 15-20'

Calcareous - Ganges in Circle - Grained SS upward

persistent,

concrete lower 7/8

upper 1/8 ledge formed

\* Also some travertine near base (at contact

w/ Cave Hill - up to 1.5" thick

\* Some pitted & Honey Comb weathering -

Although Blocky overall -

- Honey Comb in upper 15-20',

35 47 26.0 ± 25

92 45 53.3

(#82)

Prairie Grove?

Sandstone Gray w/lt. Brown

Tan fresh, fine grained to med

V. thin to thin bedded

overlain by med to thick bedded SS -

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Planer & wavy Bedded, some  
V. Thin - to Laminare shale Interbeds -  
~ 15'-20' <sup>ness</sup> thickness - Exposed.

@ Powerline Crossing -

Small Fault ~100' South of Powerline

FAULT: NBSE, 47° N ~ 1' offset -  
Dr. & Inclination

- Normal Fault H.W.D. -

#83 Sandstone, Prairie Grove?, v. Thin to  
thick Bedded, some traversive, fault  
in orange? Difficult to determine  
Total Fault offset, - NBSE, 51° N?

35 47 23.6  
92 45 35.3 ± 25'

Ripple Beds present, some Lenticular  
Beds, thicker bed near top - X Bedded  
12-15' Total THICKNESS - some thin int.  
shale.

STRAKE Dip: N70° W 7° NE - @ hole w/ main  
Drainage

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

#84 Sandstone, Brown/Grey with. Blue Grey  
Brown thin - fine grain, some shale  
partings - v. thin to thin bedded -  
~~thin~~

35 47 2.4  
92 45 35.6 ± 22'

#85 Curve Hill / Prairie Grove  
CONTACT -

35 47 32.5  
92 45 40.1

Sandstone: thick Bedded, Concretions  
@ base, shale pebbles, Fresh yellow, blue calc,  
fine to med. Grained.  
Shale: GRAY, fissile, siltstone  
lenses.

#86 Curve Hill / Prairie Grove  
CONTACT - (May 27)

35 47 29.0  
92 45 46.9 ± 22'

Sandstone: Massive Bedded, Brown Orange  
with. Blue, some honeycombed  
weathering, Tan-orange - Fresh  
fine to med. Grained, some Fe staining  
NOW calc.

Shale: - Grey with, Lt. Green, fresh, fissile,  
Silty at top, thin calc.

(May 27  $\downarrow$ )

#87

Cave Hill / Prairie Grove Contract  
Witts Springs35 47 31.5  
92 45 52.3  $\pm 20'$ 

- Walk out Contract -

35 40' sandstone overlying <sup>gray</sup> shale  
more blocky - Appears absent of  
honeycomb weathering -  
massive bedded -(May 27  $\downarrow$ )

#88

Apparent Contract Cave Hill  
Prairie Grove - Witts SpringsMassive bedded ss., X bedded,  
Blocky, some honeycombs  
weathering -Shale present in flint  $\approx 10'$   
Below base of outcrop -35 47 46.3  
92 45 57.6  $\pm 29'$ 9.5  
6.0  
57.0A

8-14-06

Devil's Racetrack

Scale

\* Need to come back in winter

#89

Sandstone - Prairie Grove -  
Witts Springs50-60' thick massive bedded  
SS - X bedded, some lenticular  
parting, honeycombs weathering,  
Some calcareous ss.,  
Cinoid fragments present.

Sandstone Gray, w/ld, brown orange frag.

- fine to med grained - quartz  
pebbles, limonitic shale pebbles.35 47 24.6  $\pm 37'$   
92 46 22.4Bear Creek - 8-14-06  
cont. Frith.

#90

Sandstone - Cave Hill  
Witts SpringsBeige/orange/gray fresh, mottled  
Fe stained grains, medium to  
thick bedded, X-bedded  
med to thick bedded.35 46 10.8  
92 48 53.0  $\pm 21'$ 

Joints: N10E, N30E, N60E, N75

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#91

Sandstone: Brown Gray to Buff ~~weathered~~

Phc  
 Gray fresh, fine grained, some  
 beige iron w/fe banding - thin  
 to med. bedded, irregular bedded

① Bottom, planar at top. Top &  
 base covered -

35 45 47.7  
 92 48 32.2 ± 14

#92

Sandstone: Brown with red, Gray

Phc  
 Brown fresh, <sup>v.f.</sup> fine-grained,  
 v. thin to thin bedded - ripple

marked - Top & base covered -

silly. calcareous -

35 45 15.1  
 92 48 29.4 ± 18'

Joints: N45°E  
 N85°E  
 N-S  
 E-W

Strike & Dip: EW; 6°N

#93

Sandstone int. w/ shale: Buff to

Dark Gray with Brown, Red fresh  
 Laminate to v. thin bedded, Abund.  
 Fe (Fe cemented?) <sup>v.f.</sup> fine-grained

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

35 45 23.2

92 48 33.0 ± 15'

Int. Bed shale & siltstone: Buff to Gray  
 with red, Gray - v. brown fresh, fissile,  
 Festre concretions,

Thunderstorm

#94

Sandstone: Brown with red, <sup>Gray</sup> fresh Gray  
 to Reddish Gray, fine grained,

Phc  
 v. thin to thin bedded, ripple  
 marked, some Fe staining on outer  
 rim & surfaces - exposed in Creek Bed  
 concretions covered -

Strike & Dip: N70°W; 40°SW  
 Dip

Joints: N80°E  
 N70°E  
 N45°E  
 N-S  
 E-W

35 45 38.0

92 48 36.3 ± 23'

#95

Sandstone: <sup>Dark</sup> Brown with red,  
 Red Brown fresh, medium bedded,  
 fine-grained.

35 45 58.8

92 48 30.6 ± 20



#96

Shale: U.G. w/ld, Gray fresh  
Some silty shale - w/ld Brown  
tan, fissile. Fe concretions,  
Liesegang w/ld Barwork, lys-

Noticed abrupt color change in  
shale ~ 50' down slope from  
Point. Gray to orange tan  
shale.

35 46 2.0

Bear Creek

92 48 40.3 ± 17

8-15-06

#97

Shale: Silty, Gray fresh, Green to  
Blk. w/ld, fissile,  
Non Calcareous.

Lower  
dip?  
main  
with  
or

Some discontinuous lenticular  
Conglomeratic Sandstone lenses, ~ 1/2" to 1"  
edge to ~ 3-4" thick, shale/clay  
pebbles, calcareous, v.f.g.

- Fe concretions also present  
through out.

~ 18' + Total thickness exposed

35 43 48.5

92 47 34.4 ± 26'

#98

Sandstone: massive, covered, Greenish  
-olive, Brown w/ld. Brown Green fresh  
v.f.g., some laminar shale partings  
minor mica, very thin to thin,  
planar to ripple bedded - some Fe  
banding

35 43 22.5

92 47 32.9 ± 30'

#99

Upstream ~ 200' Above described

Sandstone: Brown w/ld, Red

Brown fresh, medium grained,

Thin bedded, (Fe rich?)

- ripple  
overlain by above described

35 43 18.8

92 47 34.4 ± 19'

#100

Sandstone: Brown w/ld, Gray  
fresh, v.f.g., Calcareous,  
some fossil fragments, clay  
pebbles, some shale partings

- lenticular solutioning -  
35 43 15.5 ± 24'

92 47 34.4 ± 24'

Joints: N-S

N45°E

N50°E

#101

Sandstone as described in  
#100 - Increase in fossil %  
Fragments, underlain by  
silty, silty shale, Green  
with Gray, Fresh-fissile  
non calcareous.  
35 43 6.3  
92 47 37.6  $\approx 22'$

#102

Sandstone: Brown with  
orange/Green/olive gray/Thin Fresh  
Brown bed / v. thin to medium bedded.  
Green silty, calcareous, planar  
to lenticular bedded -  
Other beds non calc. v. f. g. - f. g. - interbedded -  
Joints: N50°W SS.  
NS

35 42 53.7  $\pm 23'$   
92 47 38.1

$\approx 150'$  upstream

#103

S.A.A.  $\approx 20'$  Bluff on Creek -

#103

Non calc.  
Fault: EW;  $45^\circ$  N  
strike + dip south fault:  
EW;  $8^\circ$  S

- STRIKE SLIP N FAULT: S.A. South  
- Displacement undet. covered -

35 42 43.8  
92 47 35.5  $\approx 26'$

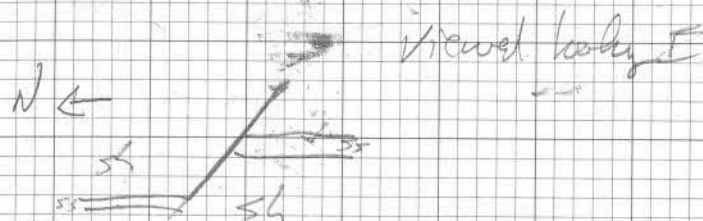
~~Sandstone interbedded w/ shale~~

Joints N85E

W10E

Silty shale int. w/ ss. - SS. S.A.A.

shale, fissile, Gray -



#104

Sandstone: olive/gray/Beise fresh  
micaceous, v. thin to thin bedded  
some shale partings, Non Calc.  
fine grained.  $\approx 10-12$  feet exposed

35 42 38.8  
92 47 38.4  $\approx 22'$

massive bedded SS: Gray-amberish  
Gray fresh, fine grained ss,  
calcareous -

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

## Name Headwaters of Bear Creek

#105

Sandstone: Buff w/whd. Lt.  
Gray fresh, v. f. g., Non  
Calcareous, micaceous,  
Very thin to massive bedded.  
~20 feet thick.

35 42 34.8  
92 47 41.8 ± 20'

Joints: N60°W  
N10°W

S&D: N45°E, 5°SE

massive bedded ss. Gray to  
purpleish Gray fresh f. graind  
Calcareous -

#106

Sandstone: orange / tan fresh  
Brown w/whd., Non Calcareous,  
v. thin thin bedded to medium, X bedded,  
med - coarse grained -

Underlain by: siltstone ~3' thick  
Gray & yellow fresh. Very thin  
bedded.

35 42 30.8  
92 42 39.2 ± 20'

Location \_\_\_\_\_ Date 8-15-06

Project / Client \_\_\_\_\_ 8-16-06

Scale

#107

Sandstone: S.A.P. - 35 42 21.1  
92 47 39.1  
Ripple marked, X-bedded 225

35 43 59.8  
92 42 17.4

#108

Richard  
Gordon  
Sandstone: Medium Grained - Non Calcareous  
Lentil outcrop in Headwaters  
Bear Creek - Covered top.

#109

8-16-06 ILLINOIS RAY OIL  
NE Corner Tully 7.5 mi.

Sandstone: Brown/Buff w/whd  
Tan, Buff, Grayish fresh fine  
Grained micaceous [slightly  
Calcareous] Lower top ran  
Calc. ]  
~20' Total thickness

Wells?  
Spring?

#12

#7

Non Calc - Thin Bedded - micaceous

Calc. Xbedded, Thin to med.  
Bedded - lower 1/2 micaceous -  
Lenticular Bedded - Blocky  
Top & bottom covered

35 43 11.5  
92 52 18.0 ± 20'

S&D: N30°E, 5°NW

Joints: N45°E

- Interpolated -

#110

S.A.P., Joints: N60°W

Thin Bedded ss. N35°W

EW 35 43 12.9 ± 38'  
92 52 13.0W/ths  
Spring?

possible fault?

offset difficult to discern

if any, no slickensides present

fault gouge not seen?

otherwise Joint. EW; 64°N

#111

S.A.A. STREKE &amp; DIA:

EW; 6°N

Thin Bedded R. Ripple Bedded - outcrop in creek  
Bottom -Joints: N50°W  
N65°W35 43 20.9 ± 23'  
92 52 64

~50' upstream: N30°W, 5°SW

Surface undulates, small scale folding?

#112

Sandstone: Brown w/td, Buff/Tan/

Gray, f.g., some shale partings,

Very thin to thin Bedded, ripple

Bedded, some Brown Red partings

35 43 25.7 ± 23'  
92 52 6.2

N20°E; 50°NW

#113

Shale: Silty, inf. ss, ss 2 1/4"

Thin, Shale Gray, fissile,

N20°E; 30°WNW

35 43 32.9 ± 38'  
92 51 55.0

#114

Silty shale, overlain by Sandstone,

Sandstone: v. thin to thin Bedded  
Tan Buff w/td, Buff tan Fresh, Medium-  
grained, Calcareous - Red to Bands outer  
shale: Silty, fine Gr. Fresh, Buff  
Gray w/td2/5' ss Joints: N10°W  
0.5' silty sh. N80°E35 43 37.6 ± 21'  
92 51 49.3

#115

Sandstone: Brown/yellowish  
w/ thin, Gray yellow. Fresh  
fossiliferous, medium <sup>to coarse</sup> grained,  
well rounded, fossils include  
Cnidid fragments, Calcareous,  
Interbedded w/ Brown Red  
Sandstone, coarse grained,

35 43 56.4

92 51 42.6

±8'

X-bedded, thin bedded -

Clay + sz. pebbles present in Gray  
SS

#116

Shale: Silty, Gray to Brown  
orange tan with, Gray/Black

Lower  
Bed?

Fresh, fissile, micaceous,  
Non Calcareous - Sandstone nodules  
in shale

35 44 3.0

92 51 6.1

±22'

Interbedded Sandstone: fine grained  
yellowish-tan, thin to  
med. bedded, appears  
cont. in limited outcrop  
exposure - ~15' TOTAL exposure

8-17-06

35 44 3.0 ±22'

92 51 6.1

#117

Just past confluence of  
intermittent stream

Wills ✓  
SPR  
(with?)  
Pond

± Sand -

Sandstone, massive bedded  
~15-20 feet thick, overlain  
by thin bedded SS -

Good outcrop along  
this drainage -

35 44 3.8

92 51 17.6 ±18'

Gray, med grained, fossiliferous

8-17-06 Mill Creek

#118

Sandstone: weathered Brown mass  
covered, thick bedded ~3' thick,

Tan - off fresh, fine-grained,  
No fizz test, micaceous,

overlain by thin bedded to 4" thick

Ripple bedded, X-bedded SS

Some laminar bedded U.f.g. SS

S.D.: N30°W, 5°SW

Joints: NB20°E

8-28-06 - Bone Creek

(RAIN)

Fill in Data Gap -  
Look for Base with Spring  
Prairie Grove - Massive Sand

#119

Sandstone: Thin Bedded, X-Bedded,  
fine grained,

8-17-06

35 40 43.2  
92 49 58.1 ± 16'

#120

Sandstone: Gray, Brown, w/td, E

Lt. Brown to Gray Fresh,  
Some sh. Partings, ripple  
Bedded, X-Bedded, Lycopods &  
(Lepidodendron sp?), Thin Bedded,  
outcrop in Creek Bed - \*

Phc

35 48 0.4  
92 48 17.2 ± 17'

Joint: N75°E  
N45°E

#121

Sandstone: Gray, Brown, w/td, Brown Turn  
fresh, fine-grained, Mass. Calc.,  
Massive Bedded, Along Road -

~10'

~15-20'

~6-8'

~20'

~1'

~3'

Covered

T.B.SS.

M.SS.

T.B.SS.

M.SS.

(Top)

35 46 23.6

92 48 51.5

(Base)

35 46 23.6

92 48 48.7

N.T.S

Overlain by thin bedded ss ~1'

Overlain by massive [SS:]

~20' Brown w/td, tan fresh, X Bedded,  
Some Fe staining, some Brown  
Mottling - minor Honeycomb weathering.

6-9' overlain by - [Sandstone]: Thin  
Bedded, Appears tan & some  
V.T. Bedded, Buff w/td & fresh - Tan -  
Some sh. Partings, V.T. = micaceous  
w/ shale partings -

2

15-20' - Covered -

#122

~10'

Sandstone: Brown Turn w/td,

Gray fresh, fine grained,

Some Fe stained grains,

Fossil frags - Crinoid fragments,

w/ calcareous pebbles -

CALCAREOUS - Lycopods



~5' Overlain by 25' of Interbedded sandstone  
v.f. bedded, AND silt shale interbeds.

25' Overlain by massive bedded to v. thin bedded  
Sandstone: Brown to dk. Brown  
to Red Brown fresh, fine grained  
Some fine to med. grained, massive to  
thin to v. thin bedded, friable ss.

25' Sandstone: Brown to tan f. fresh  
int. siltstone fine grained thin bedded  
w/ int. siltstone.

10-  
25' Sandstone: Fresh tan/Brown, with  
Brown, fine grained-  
massive bedded, trace fossils,  
Top 5' Fossiliferous Sandstone;

Brachiopods & Rugosa corals,  
Red Brown with to Buff  
Lycopods, shale pebbles, crinoids,  
Calcareous, Trilobites,  
Some Red ss. massive bedded,  
fossil content varies laterally

Overlain by Gray Clay shale,  
very slightly silty, fissile

35 46 24.5 ±23 Base  
92 48 46.6

8-29-06 Anchen Creek

#123 Shale: Blk to Gray fresh f. thin,  
Fe concretions; Brachiopods - liesegang, silt. fissile  
Int. interbedded ss. & siltst.  
Sandstone: thin bedded, fine grained -  
Gray - tan fresh -

Appears to be dipping substantially  
However probably some slumping or  
A slump block by this effect?

Strike & Dip on General Trend:

N30°W, 18°NE

35 40 22.7

- Also Appears folded -

92 46 6.0 ±24

#124 Shale: 25-30' thickness exposed,  
Gray fresh, Blk with, fissile,  
interbedded w/ Sandstone: Gray -  
Calcareous, fossiliferous crinoids,  
Brachiopods, Gastropods, Lycopods

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

- GRAY Fresh - Brown w/ shal, Qz pebbles
- Rounded, Sandstone Appears lenticular, -

- covered -

→ W

10' SS - Tan fresh - Non Calc. - P. g. <sup>sand</sup> MASSIVE

4.6' sh - int. thin ss. - slty silty - micaceous

10' SS Gray fossiliferous calcareous f.g. <sup>Lenticular</sup> thin Bedded

20' sh

- Jointed -

Creek Bed

\* JUST to West - NW Along Creek Appears to Be Sand channel cutting out shale beds - (shale is absent) Lycopods, Qz pebbles, present fossiliferous - Sandstone - MASSIVE Bedded ~ 30' total exposed thickness - of massive sand - mostly blocky, some pitting. Possibly result of Calc. ss. This sandstone ranges from Tan to Gray on fresh surface fine grained - Gray

Joints: N80°E  
N50°E  
N30°E

35 40 18.0  
92 47 8.2 ± 36'

Location \_\_\_\_\_ Date 8-30-06

Project / Client \_\_\_\_\_

10<sup>th</sup> Archey Creek + Cabin

Scale

#125

Sandstone: Lt. Tan - w/ shal

Orange Tan to Buffe fresh,

fine to medium-grained, Qz pebbles up to 1/2" diameter subrounded,

Thin Bedded, X-Bedded; 10' thick

~~Point:~~  
Point?

More exp up gradient

Dip: NSW

N80W 35 40 18.9

N65E 92 47 39.8 ± 16'

#126

Sandstone; Gray; Tan (yellow),

Red Brown fresh, Brown - w/ shal.

Massive Bedded, fine-grained

~ Calcite xls present between sand

grains - Tan yellow silty calcareous

gray calcareous, Red-Brown non Calc, ~ 20 feet thick, some Fe / Mn oxide grains.

35 40 31.1 ± 20'

92 43 13.5

- weathered profile convex to concave -

- Upsection

From

point

Along

- interbedded 4-6" Clay shale

- Sandstone + shale pos. 0-4-6"

- up to 4' Clay shale back up section

- covered by sandst thin Bedded

- over.



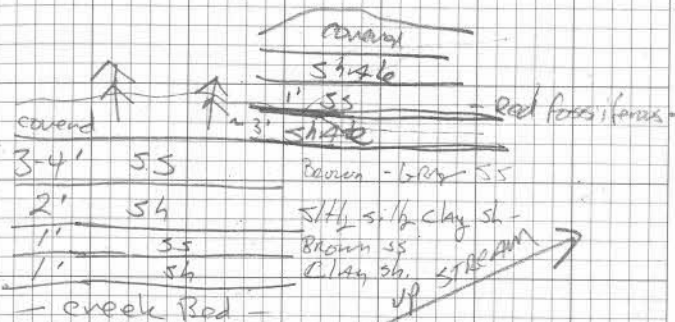
- Total thickness of SS + Int SS + sh ~ 35' - At this location
- Richard Hiked up this Buff so (quarry) refer to his notes for better description of section -
- Will continue up stream -
- Good outcrop for winter -
- Also notice X-Beds in SS.

#127 Sandstone: Tan Brown yellow to Gray fresh, calcareous, fine-grained, X bedded, massive, some honeycomb within, or pitting gray sandstone pebbles in Brown yellow SS - some orange red stained? grains - Conspicuous with profile -

35 40 42.3  
92 48 23.7 ± 31'

#128 Sandstone Interbed w/ Shale: sandstone Brown to gray fresh fine grained non calcareous, thin to med. bedded, X-bedded, lenticular, ripple bedded - some fossiliferous zones Crinoids

Shale: Blk to Gray, fissile, clay to silty silty -



Sand: Brown to gray

Excellent joints: N65°E

35 40 45.1  
92 48 32.3 ± 18'

N50°E  
N55°W  
N50°W

#129 Limy Sandstone: Gray fresh, fossiliferous, fine-grained w/ Calcite x's, X-bedded, thin bedded, some within < 1/4" int Shale: Gray Blk -

Joints: N65  
N60°W  
N65°E

35 40 55.6  
92 49 5.2 ± 25'

#130

Siltstone: Ben. Gray w/bed,  
 Gray fresh, non calc, some  
 Fe staining, micaceous, interbedded  
 Sandstone <sup>22</sup> inches thick,  
 - Gray fresh, fine-grained, calcareous

35 40 55.8 ± 47' - <sup>revised</sup> <sub>cores</sub>  
 92 49 9.8

#131

Sandstone: Ben. w/bed, Brown yellow  
 to gray fresh, fine-grained, massive  
 bedded, outer edges calcareous,  
 suspect leaching, inner non-calc.  
 Contact between siltstone & Sandstone  
 as desc. in #130. Varying amt of  
 calc, some silty calcareous -  
 S + D: N80°E; 40 NW

35 40 49.5 ± 32'  
 92 49 19.6

#132

Top of massive bedded SS =

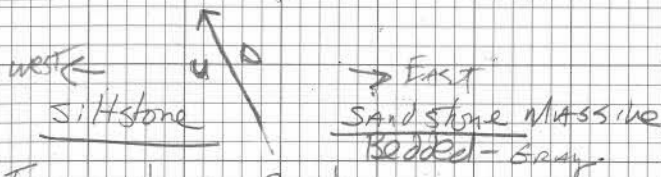
Sandstone: Gray fresh, fine-grained,  
 thin bedded, shale partings, non  
 calcareous

35 40 41.4 ± 24  
 92 49 27.3

#133

FAULT:  
 Orientation: N40°W

Strike & Dip west side  
 N65°E; 40NW



- Fault along Creek -

Siltstone: Ben Gray w/bed, Gray & calc  
 non calc,  
 underlain by Gray f.s.

35 40 44.4 ± ?  
 92 49 36.3 ± ?

Sandstone: Gray fine-grained, calc to  
 silty calcareous, massive bedded

\* ~200' length in Creek Bed - \* AT orient.  
 From pt.

#134

Siltstone overlain by v. thin

bedded gray ss ± thick to

35 40 32.8 Medium bedded ss, all f. grained  
 92 49 28.4 ± 25'

Hand Sample with  
 Siltstone with  
 thin ss. - 10' - med to thick ss. planar

Hand Sample with  
 Siltstone with  
 thin ss. - 10' - thin ss. planar

Gray ss. 75' siltstone + int. ss. lenticular

ss non calc., fine to med. grained

Brown-tan-yellow fresh, -

Middle Fork Little Red River

Tilly Quad

#135

Sandstone: Gray to Tan yellow  
fresh, fine grained calcareous  
to non calcareous, shale pebbles,  
shale partings, Bedding ranges  
from very thin to medium,  
Ripple Bedded, X-Bedded,  
Interbedded clay shale + siltstone  
thick to medium bedded near top  
Adj. to creek ~ 20' exposed

S.D.: N80°E; 50'S

Strike: N85°E	35	44	31.7 ± 38'
N-S	92	45	0.5
N60°E			

#136

Sandstone: <sup>yellow</sup> Tan to Gray fresh,  
v. fine grained, shale partings,  
v. thin to thin bedded,  
Interbedded shale: Blk to Gray  
fresh ~ 5' total thick exposed.

35	44	16.3
92	45	24.8 ± 21'

East Fork Illinois B4401

Scale \_\_\_\_\_

#137

Sandstone/siltstone: Sandstone: <sup>Tan</sup> yellow

Gray to Buff to Red Brown, shale  
partings, Fe grains, fine to med.  
grained, X-Bedded, v. thin to laminar  
bedded ss int. w/ thin bedded ss.

Siltstone: Gray to Blk fresh. Aisole,  
Int. ss -

\* Bedding ranges from laminar to  
thick bedded - Sandstone -

\* Various Calcareousness throughout.  
35 37 4.8 ± 22'  
92 50 7.0

#138

Sandstone: Tan yellow to Buff, Fe  
grains, Non Calc @ this location  
fine grained, massive bedded  
X-Bedded - ~ 15' total thickness  
exposed in Chad Bed - Rich est. 18'  
possible sporadic sandstone interbedded in  
ss.

450' to N. MASSIVE bedded ss.  
Non Calcareous -

35	37	17.9 ± 26'
92	50	12.8

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#139

Possible Fault Between #138 &amp; 139 ???

Sandstone: Gray fresh, V. fine-grained, exp. in creek bed, well jointed, Thin Bedded, Non Calc.

Joints: NS<sup>45</sup>E 35 37 31.1 ±20  
EW 92 50 9.5

#140

S<sub>TD</sub>: N75°W; 6°NE

Sandstone: TAN-Gray yellow fine Grained ss.

Thin Bedded, Non

35 37 38.0

92 50 6.6 ±25'

Calc., Dipping

Jointed, Planar to ripple

Joints: N100E Bedded  
N80W

#141

Sandstone: Gray to Burgandy Gray, fossiliferous, fine grained calcareous, solutional Along Joints, underlain by thin to med bedded ss, non calc, Brown fresh, non calc. fine Grained,

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

S<sub>TD</sub>: N80°W; 5°S

Joints: N10E

N38E 35 37 44.1 ±23'  
N50E 92 50 4.2  
EW

#142

Sandstone: Tan-Gray Brown, coarse

Brown, fine-grained, Fe Grains, MASSIVE Bedded concave @ base natural profile, Calcareous,

with  
SPPrimit.  
Gravel?

MASSIVE Bedded, X-Bedded-

med-thin

massive

med-thin

massive

} 23' Blocky

4'

8'

- Thins towards top of exposure.

35 38 5.7 ±20'

92 50 2.3

\* First noticed in Creek Bed n 150' Downstream, Better exp. At point

#143

Sandstone: Gray to Brown, wthrd., fine-grained,  
Tan/Orange/Red fresh, massive  
Bedded, jointed, on Fresh surface  
Rd., silty, friable; Some lenticular beds.

JOINT: N100E

N200W

35	36	50.1	
92	50	43.1	±26'

~15' thick

#144

Sandstone: Tan fresh, Tan Brown,  
wthrd., fine-grained, thin to  
med. bedded, calcareous, some  
Fe banding, X-bedding, some  
non calcareous (leaching?)

35	38	9.9	
92	50	8.5	±19'

~20-25' Exposure in Creek Bank

~3' interbedded shale, very slightly  
silty, Gray to Black, fissile

Overall: massive sand overlain  
by interbedded shale & thin to  
thick bedded ss.

T. Th. SS	10'-15'	← Blocky
	50'-5'-4'	← more rounded
M. SS	4'	

#145

Sandstone: Brown, wthrd., Gray  
fresh, fine- to fine-grained, calcareous  
outcrop in creek bed, thin bedded,  
well jointed.

35	38	15.7	
92	50	17.8	±40'

SD: N150E / 50E

Joints: N30W N60E  
N200W N40E  
N5E  
N35E  
N70E

#146

Sandstone: Red Brown, fine-grained  
yellow to

non calc., concave to rounded

wthrd profile, massive bedded  
in creek bank west, ~15-20'  
±25'  
some X-bedding - mottled (Fe grains)

#147

Sandstone: Tan yellow<sup>non calc</sup> to Gray<sup>calc.</sup>  
 fresh, fine-grained ss, Bedding  
 Ranges from thin Bedded on N to  
 massive Bedded to South, suspect  
 fault

← North Thin Sand / Massive Sand → South

Fault: E-W; N530  
 orient.

S. M. Sandstone: Tan Gray fresh, fine-grained,  
 massive Bedded, <sup>Red</sup> mottles (Fe oxides?), sub  
 angular to sub rounded - calcareous

GS: 35 38 29.2  
 92 50 17.6 ±25'

\* Displacement unknown, Apparent down dip  
 to North - Normal fault

\* Need supporting evidence for fault  
 Possibly joint face? Systematic -

Joints: E-W  
 N50W

\* Otherwise weathering phenom. @ joint  
 surface.

#148

Sandstone: Tan yellow fresh,  
 fine grained, non calc, thin  
 to thin Bedded, shale (blebs?),  
 Red brown mottling, x-Bedded,  
 Ripple Bedded at base.

35 38 33.6  
 92 50 17.9 ±27'

#149

Sandstone: Tan yellow, Gray fresh,  
 lt - fine-grained, Shale partings, some  
 carbonaceous plant frags, Iron Banding,  
 massive Bedded - Non Calc to Calc  
 - MASSIVE X-Beds - 10' sets -  
 well jointed - fairable somewhat

- possible fault between #148 &  
 #149

- Notice thinner Beds are calcareous

- Also ~3-4' of Gray limy ss,  
 coarse-grained @ base of west  
 Bank of creek -

Joints: N 5 W 35 38 40.6  
 N 60 W 92 50 16.5 ±23'  
 N 75 W

- compare to Billy with profile,  
 still fairable.

Location \_\_\_\_\_

Date \_\_\_\_\_

Project / Client \_\_\_\_\_

- Perhaps massive vs thin bedded sands  
 a weathering phenom. ?-?-?-?  
 otherwise tremendous amount of  
 faulting -

#150 Sandstone: <sup>DARK</sup> Brown-Gray fresh,  
 fine-grained, thin bedded, ripple bedded,  
 well cemented, non to stly. calcareous -

Joints: N50°E 35 38 41.5  
 N85°E 92 50 14.6 ±32

S&D: N25°W; 11°NE

Also. Probable fault between 149 & 150  
 massive bedded SS & thin bedded SS  
 @ ~ same elev.

#151 <sup>Thin bedded</sup> Sandstone w/ Interbedded Siltstone:

- Gray SS fresh, shale partings, v. fine to  
 fine grained, ripple bedded, micaceous,  
 siltst: Gray, some red/orange staining  
 micaceous fesse.

N65°W; 5°N-NE

\* Can't agree on orientation of  
 last outcrop.

Location \_\_\_\_\_

Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

Notice load cast ~100' up stream  
 from last pt. -

35 38 45.8 ±31'  
 92 50 12.4

#152 Sandstone: <sup>v. thin to</sup> Thin bedded, load cast,  
 Bedding is undulating - overall

flaring out, ripple bedded, Gray fresh &  
 Brownish shale partings, micaceous,  
 orange/Fe? staining/banding -

35 38 49.2 ±48'  
 92 50 11.9

#153 Siltstone w/ interbedded thin sandstone

siltst: Gray to dk, micaceous, Sandstone:  
 some Brown/orange staining

Gray f.g. ~10-15' exposed  
 S&D: N30°W; 9°NE  
 NE  
 Creek

35 39 0.0 ±27'  
 92 50 20.4

#154 Siltstone Int. w/ Thin bedded SS. - S.A.P.

~25' Exposed on SW Creek  
 Bank.

S&D: N5°W; 4°W

Siltstone	35	38	59.3
<u>thin SS.</u>	92	50	23.3 ±2

Revisit -

FAULT Orientation: N25°E, 30°E ??

possibly Lenticular Bed 'No  
Apparent Fault plane though?

#155 Sandstone: Tan, yellow Grayish  
(mottled)  
fresh, Reddish Fe grains, fine Grained  
massive Bedded, calcareous-

35	39	3.6
92	50	32.9
+ 23' Creek Bank		

~30' + TOTAL thickness exp. on SW

#156 Sandstone: Tan yellow-orange  
Red Brown-Gray mottled  
fresh fine Grained, outcrop in <sup>DR. G. M. =</sup> Red.  
Oreok bed, massive Bedded,  
S.A.A. ↓

35	39	7.1	+ 18'
92	50	33.4	

#157 Sandstone Int. Bedded siltstone:

Sandstone: Red Brown to Gray fresh,  
fine-Grained, Red-Brown Non  
Calc-Gray Calc, shale pebbles,  
fossiliferous, Calcite, ~~SS~~ Reddish, occurred just above  
Silt. Sts - Thin Bedded. X-Bedded

Siltstone: Gray, Red, micaceous  
~1 foot exposed at this local.  
~10 foot down exp on S. Bank

S.D.: E-W, 4°N

35	30	54.9
92	50	10.8 ±26'

\* Also some int thin shales &lt; 1-2"

Joints: N60°E  
N5°E

#158 Lithology Converter \* Bluff Fossiliferous  
Siltstone / MASSIVE SS - 70-75'

5' Siltstone: GRAY-BLK, fissile, micaceous  
Also some of thin Gray SS  
to thin - interbeds, V.F.G.

70-75' [Basic] Sandstone: Red-Brown Gray fine-Grained,  
fossiliferous (crinoid frags)  
V. small Red Clay pebbles ± 1/8"  
massive Bedded

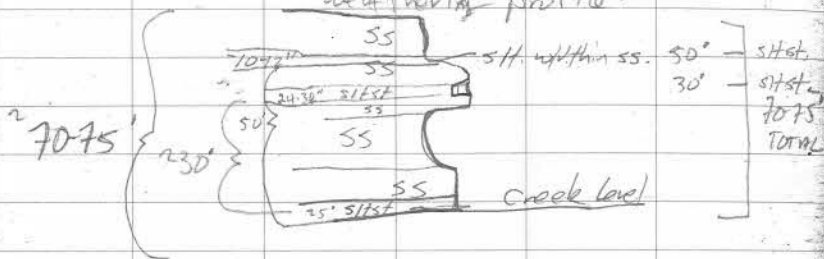
Notice Lot Fe Bedded SS - Floor -



Sandstone:

[Main Body]

- Absen. Trace fossils. <sup>Ads to</sup> siltstones.
- Some v. thin siltstone 24-30"
- Interbedded - micaceous.
- Some "Honeycomb" pitted with very minor though.
- Concave - rounded - blocky weathering profile.



S&amp;D: NBDF, 60.5

- Appears dipping into Bank on west side E. Fork Illinois Bayou.

#159

Siltstone: Gray to Blk, fissile, micaceous, Some Red Brown Fe staining?, Int. Thin ss, Gray fine grained, some minor imp. clay shale - overm. - siltst - Exposed in side drainage.

35 36 40.5  
92 50 2.9 ± 23'

9-12-06

#160

Sandstone Gray to Tan Gray to medium  
fresh, fine grained fossiliferous  
crinoid frags, calcareous,  
Base with massive, upper  
~ 5' exposed thin bedded, x-bedded  
Lycopods - Coralloid -  
overlying thin bedded sandstone.

Gray Brown, fine-grained, x-bedded  
fossiliferous - fossils loaded out  
west-hand-out, west Calc.  
Int siltst. & shale

35 36 32.4 ± 26'  
92 50 34.1

Joints N10W  
N5E

~ 20' to west Sandstone Tan  
yellow, thin bedded, fine-grained,  
fine grains (no Hbs) -

Total exposed ~ 40' - 50'

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#161

Sandstone: Tan-yellow to Red Brown

fine-grained, Iron Banding along  
Joints - (case hardening?), Bluff  
Parmae, Rounded withering. profile,  
Appears massive bedded, w/ some dispersed  
thin bedding - ∴ may be weathered

- Planum And may actually be thin bedded?
- Total thickness 40-50'

Yucca prickly pears -	35	36	30.8
- point @ top bluff	92	50	40.4
			± 19'

- Some Vertebrate pitting -

#162

Sandstone / shale

fm:  
concrete? or  
Lith?

Pch?

Shale: Gray Black Clay shale,  
fissile, some Brown staining  
(Fe<sup>2+</sup>), Iron concretions -

Thp?

Sandstone: Brown-Tan fresh, fine gr.

Some fossil shell fragments,  
Calcareous - X-bedded, thin  
to v thin - to med bedded -  
Above.

35	36	21.4
92	50	59.1
		± 24'

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

overlying "20' calcareous -

Sandstone may be slump block

Overlain by thin calc. ss w/ some  
int. siltst.

Above Slump? Thin to med bedded  
SS. Abund. Fossil fossils -

SS: Orange-Tan, fine-grained, Fe Banding  
Thin to med bedded @ top, non calc.

Top of outcrop:

#163

Sandstone: Tan Orange, fine

Grained, massive bedded, concrete

to rounded with. profile, Iron  
Banding, Calcareous -

35 36 15.2  
92 51 25.4  
± 25'

Also Blue shale in creek bed  
Between pt #162 & #163

240-50' bluff on South Bank.

#164

Lime  
Sandstone: Gray Fresh, Abundant,

Crinoid fragments, outcrop in creek  
bed, fine to med grained w/ few coarse  
grains

fossil frags up to 1/4" diameter  
orange/red clay pebbles 1/4" -

Joints: N75W 35 36 17.3  $\pm 15'$   
 NS 92 51 36.2

#165

Fhp?

Sandstone: Light Gray, Fine Grained  
 Calcareous, Brown with, Calcareous,  
 massive overlain by thin bedded  
 ss overlain by thin bedded ss.  
 Thin to med. Blocky

Blocky T.-m ss 4'

M. ss 6'

F. ss. 4'

M. ss 6'

} 2-20' Total  
Thickness

on creek Bank

→ Fossiliferous, Rounded as pebbles

35 36 2.7  $\pm 19'$   
 92 52 17.0

- Also thin shab int.?
- Trace fossils - Good - present in thin beds

9-13-06

#166

Sandstone: Gray - Brown - Blocky  
 (Fragments - Mottling), Fine grained,  
 Iron Banding Along joint faces,  
 Some yellow iron staining / weathering  
 Adj. to Fe banding, Non calc.  
 to slightly calc., thin to massive  
 bedded, some iron ore banding,  
 Concave, Rounded to Blocky with profile,  
 X-bedded, Less argill weathering  
 predominantly Along joints. Although  
 present throughout -  
 Also white to tan ss Adj. to Fe bands  
 probably due to leaching of Fe from ss  
 into bands - ? ↑  
cement

25-20' massive to med bed.

24' thin to thick ss

Joints N250E  
 N100E  
 N350E

- Also white ss partings - Laminated -  
 within Gray - Brown ss

\* - Deformation bands present in creek

- Deformation trending E-W -

Bands ^

35 32 27.6

92 45 6.9 ±21.1

#167 Sandstone: Gray fresh, Brown, mass covered with, fine-grained, concave with very profile, massive bedded, 220 feet exposed on South side drainage, calcareous, no apparent limestones or def.

Banding -

35 32 21.9 ±23'

92 45 22.4

#168 Sandstone Lt Gray fresh, fine-grained, calcareous. Thin to massive bedded, 25' Exposed on North side Creek, massive bedded concave, thin bedded

Top 2' small ledge gutter - Jointed: N50E  
with profile -

N60E

N75E

N5

N15W

N82W

35 32 16.5 ±24

92 45 50.6

#169 Shale: Gray, Brown fresh, with, gray Red/Brown, clay shale, fissile, 23' exposed in Creek bed -

35 32 23.6

92 46 16.3 ±47'

#170 Sandstone: Exposed in Creek bed, Brown with, Gray fresh, fine-grained, bedding indet due to limited exposure.

SD: N35SE / 20S

Joint: N50E, N70W,

Spring above Pt #170 ~40' North side drainage

Also extensive outcrop in Creek just to the West of Pt #170

35 32 27.8 ±28'

92 46 18.3

#171 Sandstone: Gray fresh, fine-grained, thin to med. bedded, planar bedded, some tan-red Fe banding / weathering, exposed in creek bed -

Joints: N-S

35 32 35.4 ±25'

92 46 21.1

9-14-06

#172

Shale: Gray Green, Clay to silty  
fissile to laminated bedded, some  
Fe staining Orange-Tan, outcrop  
in Creek bed-

9-14-06

35 32 25.5 ±16'  
92 46 57.7

#173

Shale/Sandstone

Shale/SS contact south fork  
Little Red River - (Rex Quad)

Shale: Gray to Blk., Interbedded  
wh. to whrd, Tan-Brown  
siltstone, some fault cutting  
siltsto sh., fissile, ~2-3'  
exposed @ creek Base,

~2' Gray fossiliferous SS

overlies the shale, crinoids

trilobites, *Bellerophon?*, lenticular  
fine-grained - max - 2' - shale pebbles 2"

@ Base - overlain by ~20' white Sandstone,  
micaceous, fine-grained, thin  
bedded - some med. TRACE fossils  
(plant fossils) - ~10' long tree -

35 33 29.9 ±21'  
92 49 35.7

West Prong - Trib of Brushy

#174

Sandstone: Gray Green, Buff whrd.,  
fine-grained, v. thin to thin bedded  
shale partings, minor Fe staining -

Joints NS

N70°E

N50°W

Irregular Bedded, N50°E - N60°W x-Bedded

35 33 21.3 ±27'

92 49 1.0

N10°G - LT Gray

#175

Sandstone: Tan Green, micaceous,

fine-grained, shale partings,

3-4 inch shale pebbles - Rip up?, v. thin to  
thin bedded, some Red Brown Fe  
staining - Appears to be Bluff  
former - ~10' Exposed

35 33 23.8

92 48 50.3 ±21'

Rich West fault

Dan East fault

#176

Dip: N30°W, 8°NE

N50°W, 5°E

Sandstone: Gray Green fine-grained,  
micaceous, v. thin to thin bedded, Fe staining,

35 33 27.1

92 48 39.1

~20' Exposed on NW Branch

I 23'

Blocky - wavy to planar bedded,  
Some small x-Bedding? shale parting

Fault?: N60°W, 52°NE

Joints: NS,

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#177

Sandstone: Gray Tan, micaceous  
 Fine-grained, shale partings,  
 Fe staining, v. thin to thin  
 Bedded, wavy to planar Bedded,  
 some ripple Bedding.

± S&D varies probably undulating surface,  
 to S & to N-NEW-? or X-Bedding

Joints: N45°E

N15°E

N40°W

35	33	32.3	
92	48	24.7	±25'

#178

Sandstone: Tan Green, Brown withd,  
 fine-med.-grained, massive Bedded,  
 ~3' Exposed on N side drainage.  
 [overlain by v. thin to thin Bedded ss]

- Hackly withd. profile -
- X-Beds with out
- massive result of weathering?

35	33	28.8	±17'
92	48	13.3	

Location \_\_\_\_\_ Date 9-19-06

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

#179

Sandstone: Tan Green, fine-med.  
 Grained, Thin Bedded, shale  
 Partings - Some Fe staining -  
 Exposed in creek bed - ripple Bedded

SANDS	N10°E	35	33	27.6	
	N55°E	92	48	11.7	±17'

#180

Sandstone: Tan, fine-med grained,  
 thin-massive Bedded, channel Bedded,  
 lenticular

35	33	28.6	±18'
92	47	59.5	

9-19-06

South Fork Little Red River

#181

Sandstone: <sup>yellow</sup> Tan to Brown withd, some to grainsy,  
 weathering, massive Bedded @ base  
 Bedding ranges from thin to thick  
 Above - withd. profile, concave to

Joints: N75°E weathering, massive Bedded @ base  
 N10°E Bedding ranges from thin to thick  
 Above - withd. profile, concave to  
 convex -

35	35	57.5	- Rounding to
92	46	0.8	scalloped -

± 27' - Exposure on E creek bank & in Creek  
 Bed -

- Sandstone is fine-grained
- Beds appear to pinch & swell

35	36	7.7	±24'
92	45	59.3	

Sandstone:

~~Thin~~ ~~Grey~~ Gritty - Tan SS, Calcareous, well cemented, x-Bedded, Ripple

#182

Beds, massive bedded ~ 4' exposed on W creek bank in Creek Bed -

\* Calderon photo

- Karstic with appearance in Creek Bed - otherwise blocky to rounded with appearance (Richard sample)

Joints: NS, EW, NWSE - Some Leisegang. Same @ Wilson Creek S. Bank - 100' upstream -

#183

Sandstone: Tan yellow fresh, fine-grained, some mottling (Fe)? calcareous, Leisegang Banding, plant fossils, "Lycopods"; massive bedded, with preferential concave, convex, rounded, blocky.

(at base of bedding) - Bedding ranges from

thin to massive, some x-bedding + even some subtle having here x-bedding.

230' Exposed thickness exposed ~ 50' from northernmost Creek Bed Wilson Creek -

35	36	15.2	±27'
92	45	47.9	

#184 Sandstone: Tan yellow fresh, fine-grained, massive bedded, x-bedded, blocky, some 7-beds, concave, convex, rounded, blocky with. Profile - some

thin to thick beds - (result of x-bedding?) Leisegang Banding - lenticular beds, channel beds?

Joints N55°E, N65°E, N110°W

- 220' Exposed on W Bank - Wilson Calc.

35	36	28.7	±30'
92	45	6.4	

#185 Sandstone / Siltstone interstratified / Sandstone

Top: Sandstone: Brown to tan with, Grey fresh, calcareous, fine-grained, massive basal ~ 5' thin to med. x-bedded (good), blocky with. App. to rounded @ top

Siltstone/shale: blk to grey, fissile, some silty sh. - covered -

SS. ~10' massive rounded - 5' thin to med blocky

silt/sh ~6'

SS ~0.5' thin

Bottom: Sandstone: Grey fresh, fine-grained, silt calc. Appears thin bedded, in creek bed, ~ 6" exp.

Joins: N100E  
N550E

35	36	32.8	±23'
92	45	46.6	

#186

Siltstone/shale overlies massive sandstone @ this locality forms a ~30' bluff siltst. sh / sandstone (massive) siltstone/shale -  
At base upon siltst. sh ab yellow sulphur? leaching from shale @ sh/SS contact? ~20' up bluff face. Desc - S.A.P. #186

silt shale - 6-8'  
sulphur  
SS - massive - 15-20'  
siltst ~3.4'

S.A.P. EW 305

35	36	36.0	±17'
92	45	54.7	

#187

Down section <sup>→ upstream</sup> - Lowermost siltst pinches out & becomes thin bedded SS w/ Int siltst sh. Lowermost SS becomes massive bedded below thin bedded SS & siltst sh -

35	36	41.7	±19'
92	46	3.6	

MASSIVE SS -  
Int thin SS & siltst sh -  
MASSIVE SS - Gray fig. calc

Overall appears to be pinching & swelling of units laterally:

#188

Toe-Q15 - ~30-40 wide @ toe main channel, probably result of removal of veg.

N30°E orientation ~100' up slope from pt.

35	37	2.4	±23'
92	46	9.1	

#189

Sandstone: Tan yellow, fresh, Gray with white Red Brown, fine-grained, thin bedded to massive bedded. Exp in Green bed -

S.A.P.

N100E  
N550E  
N70W



9-19-06

9-20-06

35	37	5.2	±20'
92	46	8.3	

#190

9-20-06

Sandstone: Brown - Red Brown

Pbg?

Pebble  
Grove?

Fresh, Gray w/ thd, calcareous  
ranges from north side, fine to  
med. gravel, massive bedded,  
overlain by thin bedded ss.

2/5' massive, 40' thin bedded  
w/ thd profile s/lt concave  
massive,

- very minor horizontal pitting

- X-bedded

- Flatten down stream side

Horizontal pitting (photo)

35	34	44.3	±24'
92	46	10.4	

#191

Sandstone: Gray, Tan Gray,

F-grained, Thin bedded, Ripple bedded,

X-bedded, shak/slt stri? PARTINGS-Lamination

~6' exposed on Creek Bank N- overlies

Cave Hill?

Point @ Contact: Massive bedded ss / Thin bedded

ss. As desc. in #190 &amp; 191

up from Creek Bed on Slope \*

35	34	20.7	±22'
92	45	59.8	

9-20-06

#192

Contact in Creek Mouth /  
Thin bedded ss -

35	31	19.7	±18'
92	46	1.8	

#193

Sandstone: Gray, Tan, Fresh,

fossiliferous, minor frags calcareous,  
X-bedded, undulating bedding planes,  
few clay pebbles, Thin bedded -

2250' exposed on South Bank  
w/ thd profile Blocky predominantly,  
@ creek bed more concave -



35	34	111.6	±24'
92	45	47.1	

#194

LARGE ss Boulder ~45-50' tall  
~30' wide - AT edge of Creek

N side Note crenulated contours

@ this loc. - Boulder on side?

∴ exaggerated height? -

35	34	0.2	±22'
92	45	9.0	

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

✓ #195 Sandstone: Brown w/ Gray streaks, some  
pre-gray, fine-med. Grained, shale partings  
some, X-Bedded - out crop in Crude  
Bed - Calcareous, (varies)

Siltstone: 2/foot, interbedded, Gray  
some brown, w/ thrd. Lt. Gray @ this  
pt. in Crude Bed -

- sample -

Joints: N10E

N35E  
N85E

35 35 22.3  
92 46 12.3 ±26'

9-21-06

✓ #196 Sandstone: Tan yellow fresh, some  
Red-Brown mottling, micaceous, Non Calc,  
X-Bedded, some calcareous in X-Beds,  
massive Bedded to thick Bedded  
Rounded w/ thrd. profile Concave @ Base,  
Rippled X-Beds? see pattern

Also Herringbone X-Beds

35 35 49.5  
92 46 5.8  
±24

Location \_\_\_\_\_ Date 9-21-06

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

Typically concave @ creek level  
Primary rounded often w/ 3E, some  
Blocky Beds  
Some slight undulation along bedding planes -  
- fine-grained - 25-30' Exposed - Bluffs  
West Bank

- Side Drainage unnamed -

✓ #197 Sandstone: Ranges from Tan yellow  
to Gray, Lt. Gray, Gray green,  
Ranges from Calc to non Calc  
fine-grained, some thin to thick  
Beds, Herringbone X-Bedding -

- South Bank - Also Irregular  
undulation channel  
Beds - ??

12-15' (massive  
SS) thin to thick bedded  
26-28' creek

\* Also Gray Green SS contains mica  
- some shale pebbles @ Base Massive SS -  
in channel Beds? -

35 36 5.5  
92 46 7.9 ±21'

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#198 Q15 - Point Taron  
westernmost extent  
TOTAL length of the  
~ TO the EAST -  
320' @ price

300

35	36	10.1	+29
92	46	11.1	-

Rock in creek Bed: Sandstone:  
fine grained massive as described in  
#197.

#199 Sandstone: Tan, Gray, Tan yellow  
massive to v. thin bedded, calc to  
non calc, ~100' North of Creek on  
Bank. Parallel to concave  
with profile -

~10' {  
Coronal  
thick  
thin  
thin to thick  
massive  
covered

35	36	11.7	+22'
92	46	13.5	-

Location \_\_\_\_\_ Date 9-21-06

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

#200 Shale: Dark Gray, fissile,  
Clay shale, Brown-Tan Fe  
staining?, Limited exposure  
in creek Bed - with Dark Gray  
35 36 15.9 +19'  
92 46 29.8 -

#201 Shale / Conglomerate Contact  
at Top of shale

Conglomeratic - Conglomerate: Clay & shale pebbles,  
matrix supported, pebbles Bk  
Gray to Red, overall fresh  
color is Gray to Red Brown  
Red Brown primary due to  
weathering, fossiliferous, crinoid  
fragments, brachiopods, stags,  
fizz Hcl. Gastropods,  
~1 foot thick -

Bluff - ss ~~map 25' 30-35'~~  
sh ~25'-30'  
cal cap 1'  
sh 4-5' Exposed

Shale silty silt Lt. Gray @ top

Sandstone: Gray tan to buff fresh, fine to med. grained, Fe Banding, Non calc.

Blocky, non calcareous,  
Bedding thin to thick, X-Bedded w/  
ripple beds -

35 36 13.7 ± 22'  
92 46 46.6

- North Bank Side drainage -

10-2-06

#202

Sandstone: withd Brown  
Gray Fresh, fine to med grained,  
massive bedded. concave to  
rounded withing. profile,  
Appear to be some thin beds  
@ top ~35' thick on west side  
Creek - Calcareous - Thin bedded  
ss. Blocky with profile.

35 30 0.3 ± 14'  
92 48 31.5

~15' massive + 20' overlying  
Thin bedded ss. to thick bedded  
X-bedded

#203

Sandstone withd Gray Brown,  
Fresh Gray to Tan Gray fine-  
to v.f. grained Thin to med bedded  
in creek bed, a w. thick  
interval of shale, planar-ripple  
bedded, some Fe stained planes

SED: E-W, NW

shale silty, Gray to  
Block some  
minor Fe oxide  
staining, fissile

Joints: N10°E primary -  
N70°W

35 30 33.9 ± 18'  
92 48 50.1

#204

Sandstone withd Buff Brown, Tan  
Buff to yellow red streaks, Laminat-  
ions, vertical worm burrows  
Brach fossil (spores), fine-grained,  
Lamination Banding Along joint  
sets, Fe oxide rich Along joints  
Non to calcareous some minor  
rust withing in creek bed.  
X-bedded.

~~21 foot thick~~

35 30 41.3 ± 22'  
92 48 51.4

#205 Sandstone: Brown-Gray withrd, Buff  
Tan-Gray fresh. fine-grained, med.  
Bedded, Ripple Bedded, well cemented,  
Some thin Beds-

S&D: N10°E; 40E

Joints N10°E

N60°W

N70°W

35 30 41.6 ± 19'  
92 48 58.0 ± 19'

10-3-06 with Spring Quad -  
Calf Creek

#206

Mb.

Chert: withrd white chert,  
Tripartitic, Red Fe staining,  
present in creek bed - small.  
Vugs filled w/ clay

35 52 14.1  
92 50 4.5 ± 17'

#207

Mb

Limestone: Lt. Gray fresh, Gray  
withrd, xln, fossiliferous, Bryozoa,  
crinoids, fragments, KARST  
features in creek bed - shell  
frag.?

S&D - Boone: N50°E; 11°SE (Richard?) -  
Record

Joints: N50°E

N50°W

35 52 20.6 ± 20'  
92 50 3.3

#208

CONTACT Mb / Mbun

Pt. silt. N. of with Spring  
Quad, Lt Gray clay  
Lms. overlain by Dark  
Gray, fine-grained Lms,  
overlain by interbedded  
Lms, sh, ss.

(5) sh ~ 4' "viewed  
(4) ss ~ 6" looking  
(3) sh ~ 5' west  
(2) Lms ~ 2' (thin ss. / c?)  
(1) ss ~ 2'  
(6) - Lms - creek bed windsuite?

Actual contact: 20' to S.

~~X~~ shale: Black, Gray, Tan, fissile, some  
silt.

(2) Lms: Dark Gray, Fresh, Lt. Gray, tan  
withrd. fine grained, Abch.  
Branches,

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

(4) Sandstone, Tan Lt Gray fresh, Tan whtd  
calcareous, v. f. Grained, fossiliferous,  
Brachi. (Ling. etc.),

(1) Sandstone: Tan to Gray fresh, Gray  
wtd., v. thin Bedded, v. f. g. sandstone,  
calcareous.

(6) Lms: Lt. Gray fresh, Gray wtd.,  
silty xln., fossiliferous,

STO: N55W, 60NE 35 52 33.0  
Joints: N45E 92 49 57.8 ±30  
W45W

(#209) Boone: chert, white, Gray fresh  
weathered, fossiliferous, in  
Creek bed

35 52 4.7  
92 50 17.6 ±19'

Location \_\_\_\_\_ Date 10-3-06

Project / Client \_\_\_\_\_

Scale \_\_\_\_\_

(#210) Boone: chert, white, Gray  
fresh, weathered, outcrop  
in creek bed - fossiliferous,  
Brachi. minor Qz veining

35 51 31.6  
92 50 30.5 ±18'

(#211) Boone / Midum Contact

MB = Chert: white, Gray, wtd.,  
fossiliferous

overlap by: Tan Brown, some  
Midum = Gray, Sandstone, v. f. g.,  
v. thin Bedded, Non Calcareous  
probably result of leaching of  
Calcite as outcrop in creek bed.

35 51 13.1 ±18'  
92 50 34.7

(#212) Midum: Limestone, Gray, fossiliferous  
Brachi. sandy (Hindsville)

v. thin to massive Bedded,  
Baryte, tr. whites, Brachi,

(x-Bedded) Crinoid stems - 35 51 1.2  
~30 ft thick - 92 50 31.1 ±23'

v. thin ss some minor shale, just above creek

#213 Mbum / Mt Contact  
 Gray lms overlain by Black  
 fissile shale - No outcrop of  
 shale however Abundant plants  
 Above - 35 50 56.2  
 92 50 25.8 ±26

#214 Mbum / Mt Contact  
 Gray lms overlain by Black  
 fissile clay shale -  
 35 50 57.3 ±26'  
 92 50 29.9

#215 Mt - Dark Gray fine grained  
 Lms, petroliciferous odor, int.  
 Joints: N40°E Black fissile clay shale,  
 N80°E outcrop in creek bed - medium  
 N50°E Bedded Lms.  
 N15°E  
 S.D. N55°W 6.5m E? 35 50 36.9 ±20'  
 92 50 29.7

#216 Mbum? Gray, calcareous ss,  
 v. fine grained, v-bedded, thin  
 thick bedded.  
 35 51 18.2 ±22' Lt gray whtd. Limited outcrop  
 92 50 43.4 Possible seasonal spring  
 Top of Mbum?

Boone

Scale \_\_\_\_\_

#217 Limestone Gray whtd,  
 Lt Gray fresh fine to  
 shaly xln., fossiliferous, Brachi.  
 ≈ 30' Buffer exposed  
 Behind Cabin -  
 Thin to med bedded.  
 No obvious cleat however  
 35 51 49.5 ±28  
 92 50 31.3

10-4-06

#218 Boone / Mbum Contact  
 Below pt #3 - Lt. Gray  
 xln. oolitic, fossiliferous,  
 cherty lms -  
 35 52 19.3 ±21  
 92 50 17.2

#219 Boone / Mbum Contact  
 (Hindsville)  
 Boone Limestone: <sup>conspic</sup> xln., fossiliferous,  
 Crinoid ss, Brachi. Lt Gray to white  
 Hindsville: Limestone: Dark Gray xln.  
 sandy - oolitic,

petroliferous odor, crinoids &  
Brachs,

35 51 35.5  
92 50 45.7 ±23

#220 mbum / mf Contact

mbv: Lt. Gray fine, Calcareous, SS, fine grained,  
outcrop in creek bed.

mf: shale: Black, clay / fissile  
Gray to Black with, Black Crust  
Some concretions, septarian  
modules, some strolites in  
concretions, Black petrolif.  
odor

Tanks: SS of  
NADW

35 51 34.9  
92 50 55.7 ±21

#221 mf - Limestone fine-grained  
micritic, fossiliferous, Brachs,

Mp

Conal Colonial Bed in place,  
Black clay interbedded

JUST Above also shale int. beds

- Richard  
Disagrees  
w/ contact -

Very thin - approx thin to  
Thick Bedded Limestone

This may be mf / mp  
contact?

~25-30' Bluff - Blocky with

Profile -

35 51 36.7  
92 51 11.5 ±27

#222

CAVE ENTRANCE ~20' Along  
Fracture - cool breeze  
some strolites, flowstone

35 51 36.8  
92 51 11.8 ±24

#223

#223

37.5  
Sandstone: 35 51 ~~34.4~~  
92 51 22.3

DWL

21.0  
Buff orange, med. Grained  
Thick Bedded planar Bedded  
- Large Boulders Below -



35 51 35.5 ± 23'  
92 50 48.7

#224

Sandstone: Tan/Grey, weathers

Grey, fine-grained, <sup>thin, not</sup> thick

Pch?

Bedded Laminated, plant fossils

Lenticles in flows &amp; crinoids -

- pt. on Highway in drainage

35 51 51.4 ± 21  
92 51 9.7

#225

Sandstone: Conglomeratic,

Round Blk. clast pebbles,

Carbonized wood, white clast pebbles Also, ~1.5" in diameter

Pch.

GRAY Fresh, calcareous, med.-grained

Base Pch? overlain by Tan weathered shale - may be flint?

35 51 52.4 ± 24  
92 51 7.9

#226

Limestone: fine to xv. Lt Gray, stylolitic, calcite blocks, pisoliths, crinoids, limited exposures on Hwy ditch - larger boulders on E side Hwy, highest LWS, in Rd ditch.

MP

35 51 57.2

92 50 59.8

10-5-06

Brook Creek - Max. Creek

#227

Sandstone: Gray to Tan Gray

fresh, fine-grained, ripple

Bedded, blocky, w/ wind profile,

minor Int. clay shale,

v. thin to thin Bedded -

very slightly calcareous -

210' Exposed on West walk

Bed -

35 31 14.2

92 49 12.5

S&amp;S: NW 1/4, 4056

± 20'

#228

Sandstone: white-orange, some orange-

Brown fresh, <sup>orange-</sup> Brown weathered.

fine-grained, massive to thin Bedded,

slightly friable - (split bed?) 320' Exp. E. -

some Fe staining - laminations.

concrete to rounded with profile - x-Bedded, some horizontal w/ing.

Some small Bluff shellers up Brown  
1.427 pt in Mississ SS.

35 31 24.7 ± 19'  
92 49 18.6

#229 (Shale: Blue to Gray fresh, Gray to  
10-15' <sup>ft</sup> ← Tan with rd, fissile - silty silty,  
Int. Brown v. friable SS, 2" thick, fossiliferous

underlain by: Sandy limestone, Gray  
to Red Gray <sup>with</sup> Abundant fossil  
fragments, shells & Crinoids,  
2/1' ← Lowermost horizon contains  
shale pebbles & is Gray fresh, has  
less abundant fossil frags.  
2/1' part in thickness Torn  
pebbles 1" - 1/4" rounded -

35 31 33.8 ± 19'  
92 49 30.3

#230

Sandstone: Gray orange-gray fresh  
v. fine grained ss, thin bedded,  
well cemented, outcrop in creek  
Bed 1 well jointed, Fe banding  
laminations.

Joints:  
10° E  
30° E  
50° E  
70° E

#231

Limey Sandstone  
Sandy Limestone: Gray to Red  
Gray, fossil frag. mostly porous  
~~matrix~~ Crinoid fragments.  
some small non abundant shale  
pebbles, up to 1/2 inch -

35 31 35.8  
92 49 46.5 ± 22'

#232

\* Lithology correct

Sandy Lms as descr. in

#231 overlain by

Sandstone: White orange.  
Some orange Brown fresh  
orange Brown with rd. in Mississ  
Bedded, x-Bedded, Leisegang  
weathering, 10-15' thick  
EXPOSED on E side drainage -  
Fe banding, fine-grained -  
to med. - grained -

Joints: N 85° E

N 10° W

35 31 37.1 ± 27'  
92 49 49.2

#233

Abundant deformation bands  
in rubble, boulders -35 31 42.6 ± 21'  
92 49 55.2

Liney Sandstone:

#234

Sandy Limestone: Gray to Red Gray

fossiliferous (fragments) calcareous  
sand is fine-grained -

first exposure

35 31 42.7 ± 22'  
92 49 56.5

#235

Lithology Contact (sharp)

Sandy Limestone as desc'd in #234  
overlain by sandstone as  
described in #234 -Deformation bands > 1-inch #  
oriented E-W35 31 43.2 ± 30'  
92 49 59.0

10-11-06

LOST CORNER QUAD

#236

Shale: wh. Dark Gray, Gray  
to Tan, dk Gray to blk. fresh,  
fissile35 31 3.7 ± 30'  
92 48 13.2

#237

Sandstone / shale lithology  
CONTACT

Sandstone: Gray to tan Gray

fresh, Brown-Red-Brown lithol.

mainly fine-grained, thin bedded -  
some med. Grainedmoderately to poorly sorted, subangular  
well cemented to poorly cemented.35 31 14.6 ± 29'  
92 48 2.9

underlain by: Shale: clay,

Black to dk Gray, fissile,  
some Tan with shale.

22'	ss	← lenses in shale - where in creek bed - shale pebbles
24'	sh	

JOINTS? Boxwork? Leise quarry / Iron bands

N 60 E  
N 90 W  
N 45 E

✓ #238 Sandstone: Tan fresh, some calcite  
containing, friable, massive bedded  
concrete to blocky with profile,  
calcining @ Base



Fire-Geared

Fe lined large scale case HARDLY  
w/ weathering of cone.

- Looks like inverted Bowl - Leisegang -

- Some deformation Bands

more abundant in

Flats Below

35	31	35.1
92	47	56.4 ± 29'

✓ #239 Shale: Black to dk Gray  
fresh, fissile,

this appears to be @ same  
elevation as massive.

ss possible Fruit Return??

#238 & 239

35	31	36.8
92	47	57.8 ± 17'

## Bedding Contact

Scale

✓ #240 Massive Bedded ss as desc'd in  
#238 overlain by

Sandstone: Lt. Gray fresh,  
V. fine-grained, Gritty with d,  
V. thin to thin bedded

some minor shale @ Base  
Above massive ss -

~30-40' thick -

- Bluff frames -

- Asterzonia (sp?) feeding traces -  
(in Flats @ Base water table)

- concrete to complex weathering  
profile -

± Bedded Contact

35	31	46.3
92	47	56.1

± 21'

concrete

✓ #241 - Also ~1.5' shale int. of thin ss  
- up creek @ this locale

Basal ss above shale contains coarse dk  
grains & shale pebbles - poorly sorted -

35	32	2	± 30'
92	47	49.9	

± 30'

(ss) still thin bedded

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

210' up section siltstone overlain by  
Thick Redd ss-

✓ #242 <sup>lt. red</sup>  
Limy ss. fine to xln, curv'd  
clayments, Gray hash,  
x-bedded 35 32 7.0 ± 19'  
92 47 49.7 ± 19'

10-12-06

Bear Creek - Lt. Rain 15 feet

#243 Sandstone; Lt Gray to Gray  
fresh; fine-grained numerous  
shale partings; slt. calcareous -  
spotty, v. thin to thin bedded - Abn trace  
35 46 2.9 Fossils in  
92 43 10.4 ± 16' slabs here  
(in place?)  
\* yes confirmed

Joints: N60W  
N40E  
N50E  
N30W  
NS  
N85W

Creek Bed exp. @ confluence of  
Jenny Harness Hollow & Bear Creek

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

Lithology Contact \_\_\_\_\_ Scale

✓ #244 Sandstone @ described in #243  
underlain by shale:  
Contact sharp -  
Shale: Black - Dark Gray, f. ssile,  
Contains concretions in upper  
1 to 1.5-foot concretions  
are micritic, Dark Gray hash,  
orange red-brown with rd,  
calcareous to non calcareous -  
Heavy - high specific gravity  
Septarian concretions (some) -  
Also some discontinuous conglomerate  
containing fossil fragments, + shale  
pebbles, concretions (some) present.  
@ contact although discont. -

\* Also some thin Lush beds above.  
Thin ss in float -  
Abundant fossils Annelids  
Crinoids Gastropods Trilobites  
Nautolites - Branches - Fossil  
hash -

2100' Downstream note a fossiliferous  
concretions + trace fossils +  
plant fossil in shale -

35 46 4.1  
92 48 5.8 ± 16'

#245

Conic Nautiloid -

+ coiled - 2-inch

thick Red in thin

shale - limonitic -

continuous Red of

Imp?

Siltstone: ~~light ss~~ Gray fresh

orange whtd, fossiliferous

2" thick, fossiliferous calcareous

35 46 9.2 ± 25'

92 48 1.9

#246

Shale: Black to Dark Gray whtd &amp;

fresh, fossiliferous, fissle,

conchs, Conic Nautiloids,

numerous concretions throughout

silty, silty

Imp?

\* over one abundant fossils

within shale from pt

#244 downstream to

this pt.

Conchs, Branches, pyrite,

plant/wood? fragments, Bivalves -

\* Collected numerous fossils here -

35 46 21.0

92 48 0.4 ± 13'

Rain / Fog

#247

Groups One Red

wh. to orange in m to lower

covered rd -

Sandstone: Lt Gray to Tan fresh,

friable, <sup>pyrite</sup> coarse-grained, some

Fe Banding, oxidation on outer surfaces,

Brown <sup>clay</sup> ~~clay~~, thin bedded, x-bedded

Pa?

pt. @ Base of outcrop -

- some mud beds -

- poorly sorted

- subangular to subrounded -

35 30 36.6 ± 28'

92 51 6.5

10-17-06

Witts Springs -

START  
DAY 8:30

MA

#248

Shale: BL fresh, fissle,

Blk to Brown weathered -

Joints N60°E

N35°W

N45°W

N50°W

N60°W

N70°W

N80°W

N90°W

35 52 25.7 ± 29'

92 47 3.9

#249 MF/MP ~~Contract?~~  
 covered -

micritic blk to dk  
 gray Lms overlain  
 by Lt gray fossiliferous  
 Lms - crinoids / Annelid ex -

Looks too high to me - DKs -

35 52 22.9 ±15'  
 92 46 56.6

#250 Pch/PPW or DP.

Contract - covered

Sandstone: Buff to Red Brown Fresh.

Buff to Brown mottled Red, fine-grained, Also  
 (Fe Green?) Red Brown ss Fresh, Thin to

massive bedded, spongy calc.

- minor lenticular to block weathering
- X-bedded massive
- minor Honeycomb/pitting

Small  
 Spring

(at this  
 level)

35 51 51.6 ±25'  
 92 46 26.7

JOINTS: N50°E  
 N30°W

- Some lenticular channels -

#251 Pch/PPW or PP

Contract covered -

Good horizontal / Lenticular

35 51 57.1 pitting @ this point

92 46 38.5 Richard photo

±30' sandstone as described in #250

- Some Red shale pebbles in X-Beds  
 & calcite xls, minor fossil frags.

#252 Pch/PPW or PP

35 51 52.8

92 46 19.7 ±25'

Contract covered

As described in 250-251 -

#253

MP - Highest Floor observed -

35 52 24.0 ±35'  
 92 46 47.9

#254

MP/MP Contract

shrap - side drainage -

Lms chert blk MP

MP

35 52 21.9

92 46 59.5

Boxed canyon

Str: N10°W; 50° NE ±25'

#255

Mf/MP Contact?

- sharp to

Mf: Black fissile sh. int. w/  
Dark Gray to Blk m. quartz

Lms -

overlain by

MP: Lt. Gray Lms, massive Bedded  
fossils/forams -

35 52 19.0

92 47 6.2

±19'

#256

Mf?

fissile calcareous Gray shale,  
Concretions - upper part? ?

35 52 14.7

92 47 17.6

#257

MP/Mf Contact?  $\checkmark$ 

35 52 2.2 ±20'

92 47 10.9

Arrive @ Cabin 5:00 - Dinner - Map work  
from 8-10:15 pm

Leave next morning Emma's side -

Napier Hollow - Lost Cove Scale

#258

Sandstone:

Quartz

S&amp;D

N40°E; 50NW

Appx.

-60°E; 5-6° NW ?

Tan fresh, massive Bedded

fine grained,

35 36 18.8

92 50 14.7

±17'

Thin Bedded Stone, Gray fresh,

fine-grained, calcareous, Lycopods

- Bedded channel Bedded -

#259

Siltstone/shale/Sandstone

- thick Bedded ss - lenticular -

\* over all: Int. shale asstst.

35 36 19.9

92 50 10.0

±20'

Gray to dark Gray, fissile

fine fossils, fine mica present,

\* Does not correlate w South side  
of NAPIER - FAULT -

N40°E; 90NW

35 52 19.9

92 50 10.0

±20'

sh sstst overlain by massive

Bedded ss, orange Brown fresh

Fe oxide banding, fine to

med grained, Abund. micaceous

bands - 15-20' thick

#260

Sandstone: Gray fresh, fine-grained.

Shale partings - Sft. Calc.

to Calc., Thin Bedded, Blocky, South side

35 36 14.0

92 50 0.4

±22'

Napier Hollow. (Bedding seems to vary

from thin to massive - mostly thin)

- 30-40' thick - (prob dep on  
calc.)



#261 Sandstone: Gray, fine-grained, some  
crinoid segments, calcareous, massive  
to thin bedded, concave to blocky  
with appearance - ~ 30-35' thick  
STYOLITIC ✓ 35 36 16.5  
92 49 52.4 ± ?

#262 Sandstone: Gray, Tan, orange tan gray,  
massive bedded, fine-grained, calcareous,  
concave to blocky weathering profile, Leisegang  
(fossils present: Corals, Cnidarians, sponges,  
- SPARE presence -) within to laminar calcite  
veins, ~ 2-inch int. bed. shale near  
base outcrop - thin ss - also wood-  
prints N25°E  
35 35 20.1  
92 49 25.2  
± 33'

#263 Sandstone Boulder w/ Deformation  
Bands - 35 36 20.3 ± 22'  
92 49 23.0

#264 Sandstone boulders w/ Abundant defor. m.  
Banding - 3 Black Bands - Should  
walk up this area - Knobs when Bams  
clear at - 35 36 19.4  
92 49 25.2 ± 22'

#265 Sandstone: Deformation Bands  
massive bedded overlain by thin to within  
bedded ss - 35 36 21.1 ± 17'  
92 49 27.4

10-31-06

#266 MP/MA Top of thin Int. shale  
& micrite; Above, Thin to Thick bedded  
Lms. (2'), very fine to  
35 51 23.9  
92 48 31.0  
x in Lms Above, Fossiliferous  
Crinoids, Bryozoa, Bryozoa  
± 22' Arched bed - Styolitic bedded

#267 LMS: coarse grained fossiliferous  
colitic - 35 51 25.1  
MP 92 48 30.9 ± 22'

#268 S.A.A. MP 35 51 25.8  
92 48 26.2

#269 S.A.A. MP 35 51 28.5 ± 24'  
92 48 21.9

#270 CONTACT ShmRA  
Phc / IPhc? Pw  
shale overlain by Sandstone  
Buff to mottled Burgandy, fine  
grained, med to thick bedded  
Leisegang banding, some horz.  
weathering, plant fossils,  
concave to blocky, with profile  
E ss covered 5/4 to med to 2' - calcareous  
212-15' Exposed - Also some  
discont. Rags coarse sand w/ 02  
pebbles & shale pebbles  
35 50 39.1 ± 35'  
92 48 34.0

#271

Contact Mp / Phe

covered - pit. on top Lms. outcrop  
Lms. Lt Gray <sup>dk gray</sup> oolitic, thick to med.

some massive Bedded, Yln - to fn Gray

35 50 52.4 ± 20'  
92 48 25.2

#272

Mp / Phe Contact ?

covered - Pit in saddle

- This may be low - highest observed -

35 51 32.5 ± 21'  
92 47 25.8

#273

Mp - Data pt Above oolitic

Lms. Highly fossiliferous Lms.

Abundant Graptolites, Archamedias;

Some Branches, upper Pit in

LARGE CREWWORKS : 35 51 38.4 ± 20'  
92 47 17.2

#274

Mp / Phe

Top of outcrop Mp in Rd

Contact covered - 35 51 45.1  
92 47 12.3

± 20'

#275

Mp / Phe

Contact covered, Highest observed

35 51 46.9 ± 18'  
92 47 13.5

#276

Mp / Phe contact covered

- oolitic - 35 51 14.5 ± 19'  
92 47 38.0

#277

Mp DATA PT. DORSING

Contact covered - Mp / Phe Phe

Halox obs Float - 35 50 59.3  
± 16' 92 47 41.9

#278

Mp / Phe Contact covered

Highest Pit in - Gray Rd

Lower - 35 51 32.3 ± 19'  
92 48 41.7

11-1-06

#279

DATA POINT Phe

Sandstone; Buff w/ Tan laminations

Fresh, fine-grained, some oxidation

+ Banding, This is massive Bedded,

Some (3'-4') Apple Bedded, x-Bedded - 35 52 4.4  
92 47 5.9

#280

Mp / Phe Contact covered ± 21'

- Top Pit in outcrop covered above

35 52 9.4  
92 49 11.3  
Lms. Fine-gr. Lms, med - thick

Bedded Lt Gray to dk Gray

Fossiliferous, Archamedias

Genoids, Below this pt some

Int. Silt - Some small scale

x-Banding? - oolitic in places

#281

Mp / Phe Base of High Bluff -

- covered ?? Very thin bed of shale  
Contact ??? Block fissile

Excellent Mp Bluff  
 35 52 11.6 From pt # 280 ✓  
 92 49 2.4 Looks like pt. / contact may be  
 ±36' slightly high -

Below pt. Shale Blk, Gssb,  
 to thin bedded micritic  
 Lms, petrifera below

MF

35 52 13.0

92 49 0.1

±20'

#282

Mp. Dark Gray to Lt Gray  
 Fossiliferous Lms, fine-grained  
 Med to thick bedded.  
 Base of Mp Below covered  
 w/ rubble -

35 51 58.1

92 48 41.9

±43'

35 51 58.1

92 48 41.9

±43'

#283

Mp/Phc Contact Covered  
 Top most floor (Lms) Above  
 5-10' Above last outcrop-  
 of Mp. Above ss. floor -

35 51 51.1

92 48 41.8

±44'

#284

Hand sample

Phc massive ss, buff mottled  
 to red, fine-grained ss,  
 Abundant honeycomb weathering,  
 some x-bedding "10"

35 51 48.6

92 48 45.9

±33'

#285

Dark pt. Phc?

Sandstone: Tan w/ brown mottles,  
 fine-grained, massive where  
 thin & bed weathering, ~~thin~~ x-bed's  
 cut across -

35 50 31.7

92 48 37.2

±24'

#286

TOP MASSIVE SS. 40+ feet to  
 Base - unable to pass - massive  
 Blk, possibly Phc or Phg

35 49 32.5

92 48 16.4

±34'

Also Base of thin bedded  
 Carbonaceous/Limey ss, fossiliferous (coninoid)  
 Red clay pebbles, some  
 coarse, into thin beds  
 of shale, 1/2" thick.

M. Bluff

Lower Bluff

Pine Grove

M. Bluff

with

shells

x-bedded - Inevitable bedded -  
 continue to block with possible  
 some minor fragment & irregular  
 Need to observe base

OR All Phc

massive ss.

Also Bedding changes

#287

BASE MASSIVE SS. thin to thick to massive 7-8'

11-2-06

Call creek w.

35 49 34.8

92 48 16.2

#288

Phc Dark pt.

Sandstone: Buff w/ red/orange  
 mottles, fine-grained, red-thick  
 bedded, Above pt Birch fossil  
 clay shale -

35 50 14.7

92 50 54.7

±19'

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

#299

Mp / Pbc CONTACT  
 Covered, highest Pitkin  
 In place - 7/10' Exposed -

35 50 22.0

92 50 49.7

±23'

Lt Gray to Dr Gray Lms.  
 fine-grained, med-thick bedded -  
 fossiliferous - <sup>some</sup> corals - <sup>oolitic</sup> -  
 Top seems sandy - sec hand samples -

#290

Mp / Pbc CONTACT  
 Covered, Highest Pitkin in place

CONT up pt. 299 - 35 50 25.1

92 50 48.1

Top

#291

Base Pbm - Rubble Below ±24'  
 probably Pbm / Pbc CONTACT 240'

35 50 13.4

92 51 24.3

±18'

Covered - whitish, fresh reddish  
 coarse-grained ss., cor pebbles, x-bed

#292

PW DATA pt. or Pbl -

Sandstone: olive green, v. f. g. f. g.  
 some silty, thin bedded  
 micaceous

35 50 12.2

92 51 17.9

±34'

#292 - 335 : RH, SA, J.H

Location \_\_\_\_\_ Date 11-20-06

Project / Client W. Hs spring type Ref sect

Scale \_\_\_\_\_

#335

Pbm / Pbc

CONTACT Covered, Top of

Thin to massive bedded ss

x-bedded - Lenticles, fine to

course-gr., mottled, or pebbles,

Some v. coarse gran. with

gray white to tan, fresh tan.

Pbm: 230'

#336

Pbm / Pbl or Pw?

Sandstone underlain by

Shale: Tan Brown with

gray + tan fresh, micaceous,

fissile, some silty + siltst.

#337

Pbm / Pbl or Pw?

CONTACT Covered ±18'

Base ss. - probably High?

#338

Pbm / Pbc

CONTACT Covered Top ss.

35 47 21.9 ±21

92 52 8.8

#339

Pbm / Pbc

CONTACT Covered in

small creek - some thin

ss beds above - 35 47 25.4

±14' 92 52 2.3

#340 Pbm / Pby 35 49 1.2  
 Contact covered 92 52 19.1 ±14  
 - may be sily low -

#341 Pbm / Abm 35 49 21.5  
 Contact covered 92 52 9.7 ±11  
 exp in sm. debris

#342 Pbm / Pby 35 49 26.4  
 Sandstone in bed 92 52 10.9 ±11

#343 Pbm / Pby pt. 35 49 36.7  
 Sandstone in bed 92 52 13.0  
 ±17

#344 Phc - Dapt pt.  
 Shale: Tan - Gray w/hd.  
 Fissile, some silt st. &  
 v. the ss. v. f.g.  
 some Fe concretions  
 35 49 56.6 ±21  
 92 52 26.8

#345 Phc / Pw Pdp?  
 Contact covered / sharp  
 35 49 58.1 Base thin bedded ss, v. bedded  
 92 52 7.7 x-beds have shale pebbles  
 +30  
 (2) p. p. p. Calc. to non calc., 20'-25'  
 Also Some thick beds 10-15' thick  
 1' siltst (shale Beluapt - Gray tone  
 fissile Phc  
 10' above Base fine - coarse - graded ss  
 Contact - coarse w/ ss pebbles (Lam deposits?)  
 minor l. o. p. s., NO cl. w. s.  
 35 49 58.1 - Tan - Gray fresh -  
 92 52 7.7 Gray to tan w/hd.  
 +30 - MASSIVE Beyond pt. 2nd pt.  
 @ Contact - channel??

Tails: ISSUE

with sed. def. plane  
 structures

#346 Phc / Pw Pdp? 35 49 50.1 ±26  
 92 51 58.8  
 Contact w/ massive ss  
 210' exp.

#347 Phc / Pw Pdp? thick to thin bed  
 35 49 51.7; 92 52 51.0 ss bed -

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

- Atolea -  
 Pbu - Boyd  
 Pbm - middle Rynd ss  
 Pw - Witts Spring Fm  
 prairie Grove } Equivalents  
 Phc - Cave Hill Member of (Hrb)  
 JMD?  
 Mp - Pitkin  
 mf - Fayetteville  
 mbum - Batesville  
 Mb - Boone

# 347 cont. Possible Slump in  
 on this side

Location \_\_\_\_\_ Date \_\_\_\_\_

Project / Client \_\_\_\_\_

138

The m  
the  
FBEDDING:

&gt; 3 feet = MASSIVE

2-3 feet = Thick

1-2 feet = Med.

1" to 4" = Thin

0.4" - 1" = V. Thin

&lt; .4" = LAMINATE