

MOBILE DRILL

Log book # 8

APR 98 / July 98



Ben Meadows

1-800-241-6401

LEVEL BOOK

#101596

STATE MAP 98

Ambient 98

W/ # 17669 / 17731

17669
Bright Hour

17670
Cacton

17671

17677

17688

17688

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17688

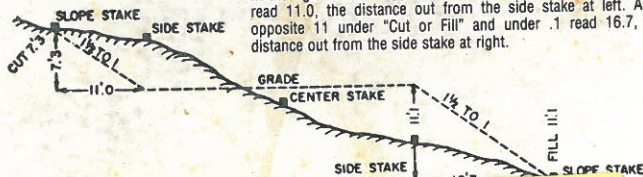
17688

17688

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or
Fill

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40

Joe Budd
Bradwell Bay
Garcon pt #1 - no well
Ck Kiskimune
LA Belle NW
Riverwoods
CHIAN
C41AS
BWRSF site 2
Garcon pt #2
Dixon ck - no well

North
C41AS
Ck Kiskimune

Cut or
Fill

0
1
2
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39
40

The paper in this book is made of 50% high grade rag stock with a WATER RESISTING surface sizing.

Spencer M.
Apr -
813-621-5804

17669
Bright Hour
Rack #1

17670
CAELTON
2X4 #2

17671
ATHENY

17677
Coke Kiskimune
1st Ave

17688
Belle NW

[illegible]

pers cell (850) 545-8013
(850) 545 8125

7688
Belle NW

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W17669

(streaks of orange
are gooey bentonite
and rust) →

BRIGHT HOUR RANCH #1
W-2 W17669

CB, JBS 6:30am start.

Lat: 27° 12.161' N

Lon: 81° 42.020 W E1W 23'

0-2.5 push core } good recov.
2.5-5.0 push core } 'U.C. @ ~3'
5.0-7.0 push core }

sediment falling in to 3'
need to pump hole clear to
set sampler.

7-8.5 core sample, good recov.

tan/brn sand, easy drilling.

8.5-10.75 core sample. good recov.

tan/brn sand, some clay.

10.75-11.25 same.

11.25-13.75 same. more clay (streaks of orange?)

13.75-16.25 same. hole filled
in w/ 4' sediment.

pump clear.

16.25-18.5 coarse sand, tan-brn
w/ possible organics, some clay
easy drilling.

17669
Bright Hour
Ranch #1

17670
CAELTON
2X4 #2

17671
OTHENY

17677
Lake Kilmister
Belle NW

17688
Belle NW

18.5-21 slight color change to
more yellow/tan/brn.
hole filled in 6'

21-21.75 pumped sample. Drilled
like clay, but only coarse
sand retrieved.

21.75-24' core sample. 500 feed/500 rot.
fill in 2' - sample fell out
bottom. pump sample, pump
past bit to 28.5

29.0-36.5 core sample. tan med. grn.
sand w/ some clay blocks.
~~lost~~ lost some sample - pump to
35.0 fine sand, tan, w/
some phos. specs., some
clay. Drilled Augers to 34.5
to take next core.

34.5-37 core sample. gray coarse to
med. sand, phosphatic, some
tiny blocks of clay.

37-39. core. coarser sand, gray,
phosphatic. Good recovery.

39-41 gray-olive sand, clay
content increasing down interval.
phosphatic.

41-43.25 less sand → clay
content increasing, darker
in color - olive.

43.25-43.75 Dark olive increase
of clay content still sandy.
easy drilling, no filling.

43.75-45.75 dark green claysand.
tiny specs of phos.
easy drilling.

45.75-47.75 same.

47.75-49 same.

49-51 same.

51-53 same. material is
drier, stiffer. takes
more rotation + feed
pressure to drill.

53-54 same.

54-56 same.

56-57.25 same w/ patches
stringers of clay.

Riverwoods

CAELTON
284 #2

ITHENY

lake Kilmister

Belle NW

57.25-60. same.

60-62. same. lt. olive claysand
w/ phos. specs.

62.-63.5 same.

63.5-64. same.

64.-66. same.

66-68. same, ~~stiffer~~ clay is
stiffer, dryer. Harder to
drill.

68-69. same.

69.-72.25 same.

72.25-73.75 same w/ traces
of white shell frags. phos. incrs.
73.75-75 coarse clayey sand, olive
with phos. increasing,
traces of white shell frags.
shell frags are chalky

End Day @ 7pm

11687
Riverwoods
17610
CAELTON
284 #2
17671
THENEY
17677
Cape Killumet Belle NW
17688

4-3

Start day @ 6:48 am

Hole depth @ 75', 2' of sed. to pump clean.

75-75.6 Very slow, hard drilling
literally going a mm at a
time. Sample is sandy
clay w/ phos. Hard, dry
~~clay blocks~~. cemented sand.

75-77 very slow, hard drilling.
900 psi feed / 600 psi rotation.
Sample is hard, dry crumbly
clayey sand w/ phosphate.
It greenish gray in color.
some chalky white shell
frags.

77-78.75 changes to olive green
clay, dry w/ some chalky
shell frags. (Drilling easy)

78.75-80.25 same.

80.25-82.25 same, less shell

82.25-84. same. slow, easy drilling.

84.0-86.0 same - appears to be more sand - cave in.

86.0-87.5 Drilling is "crunchy" at first, then smooth, easy. same material, more shell frags.

87.5-89 same.

89. 90.5 harder material - 14SA are at refusal.

TD. pull flight, Augers sit at ~88'. Ready to wire line.

On road @ 11:30 am

Return to TLH @ 6:15pm

888888

17684 Riverwoods
17610 Caelton 284 #2
17671 17HENY
17677 Lake Kilmorie Belle NW
17688

4-6-98

7

KC + DH return to Bright Horn
Ranch - 7 AM start.

change over rig to NQWL
load water tank

90.5 - 92.25 - hard rubble grey
limestone shell mallee

92.25 - 94.5' lt gy bn shell mallee
ls

94.5 - 96.5' same w dk gy bed
ls at bottom

96.5 - 99.5' SAME

end day 8:00 PM
New rig depth
record

102294 - rig end mileage

4-7 KC, DH, HM 7:30 AM start
drill to 105.8' TD - clayey section
stripping pump. tried mayo's down
grout - blew hose

pumped 2 bags quick grout
~90 - 70' filled w/cbgs to -2'

8
then place plug bentonite
chips - sand on top to
Z&D

Move to CARLTON 2x4 RANCH

W# 17670

W17670

S T R

LAT 27° 07.092

LONG 81° 46.719

Elev ~53

+300'

push 0-2.5'

" 2.5-5' - v por recovery

- plugged at top w clay sd.
5-7' w/ spl at top - bailed at
btm. fine sand

7-11' pumped sand - w grey clay
matrix

11-14' pumped spl, 11-~13 grey clay
+ ty + phos sdy ~13-14
lt grey/cream clay w gtz & phos sd
+ shell

14-16'

16-18.5' cream clay w shell + rock frag.
+ gtz sd

End day 8:55 pm

Riverwoods

CARLTON
2x4 #2

THENEY

Lake Killebrew
at Oak

17688
Belle NW

4-8-98 KC, DH 7:30 AM START 9
net to Carlton 2x4

18.5-21' creamy clay w/ shell + rock frag.
- bulged splr

21-23' AS ABOVE - creamy thin blue
grey, shelly phosphatic calc clay
rubble at top of run is outcrop of
bed chert.

23-25' stiffer last 1.25' - phos
sand - not as much clay or carb.
sed pulled in to TSA - drilled
down 1.25' w/o sampler - pushed

at 25-26' pushed sample
grey sand, phosphatic sl. shelly
v slightly clayey

26-28.5' pushed splr same

28.5-31' w/ splr - SAME - sl. clayey

31-34' pushed - same

34-35' ol. gn clay phos sd

35-36 ~ 35.75' hit hard
sand ol. bn clay sd

36-37 7.75' SAME

37-38 7.75' SAME - INCR clay

~~38~~ 37.75-39.75' ~ 39' start rubble drilling

~~37.75~~ ol. gn clayey sand, sl. shelly

Riverwoods

C41A-N

MATHEW

Lake Killebrew Belle NW

- 39.75 - 41.25 bl. gn chg sd + sdg¹⁰
clay, some pebbles + rooted shell
41.25 - 42.75 bl. gn chg sd w shell
42.75 - 44.25 same
44.25 - 45.75 same
46.25 - 47.25 same
47.25 - 49.25 same - grayer at base
49.25 - 61.25 same
61.25 - 53' btm more calcareous
rock layer abn 52.5
53 - 55 poor recovery - plugged
near top of run - purged to
55 - clear HSA - purged spl
from vicinity of 55.
55 - 57' rubble drilling cream/gray
carbonate w sd + chg, phos + shell
57 - 57.75' carbonate - rubble - more spl used
plugged off
57.75 - 58.5' Hgy carbonate, mud
matrix for sd + phos, shelly, ls frags.
- keeps sucking into tube
58.5 - 61' purged - gray ls frags w
clay/carb matrix ls clunks w
calcite cement, some bryozoan?
clunks
61 - 63.5 - drilled like rock - purged
spl same as above - ~1' left in
HSA - purged as sup. sample

called 62.5-63.5' - shell moldic

ls, sl, sdy, sl. phos

63.5 - switch over to NQWL

63.25 - 64.25 grey + lt br shell moldic
limestone

64.25 - 66.75' lt br shell moldic ls

66.75 - 69.5 lt br + grey shell moldic
ls. phosphate increasing

END day 800 pm

4-9-98 730 AM START KL, DH

decision to TD hole + move
to Methary site.

★ dropped box ⁶¹ 66.5 - 69.5 - internal
order is approximately correct
but specific order is not for
internal 62.5-69.5

69.5 - 74.5' ls as above alternating with
clayey zones

74.5' TD

Pulled WC rod + TSA to 36'
hole filled to 61'
pup 2 bars quick growth

61-40 pulled remaining hsa paged
add bag quick govt at 40'
- setting govt return at ls.

poned 1 bag benchmark chips in upper
2 ft. of hole - plug at -1. 1. dms
remaining 1 ft. w cuttings

~~Ferry Rig + trailer to the K. Simmet~~
~~St. Ak. north 70N 900pm~~

clutch fan, shocks / suspension,
brakes, vibration pm.

4-9-98

W17671

13

Matheny site Hardee Co
W# W17671

LAT 27° 25.092' +300'

CON 81° 43.437'

STR T35S, R26E, sec 21 DAC

Elev ~65

0-2.5' push spl dk br sd

2.5-3.5 same

3.5-4 bn hardpan

4-5' bn hardpan

5-6.5' bn hardpan

6.5-8.5' sn ch sd

8.5-9.5- same

9.5 bn ch sd.

10.5- ~11 bn ch sd.

~~11-13.5~~ 11-13.5 lt gy ch sd.

13.5-16 lt gy bn ch sd.

16-18.5 lt bn ch sd.

18.5-21 lt bn ch sd.

21-23.5 lt gy phos. ch sd.

23.5-26 med gy sl ch v phos
sd.

26-28.5- same

28.5-32 purged spe med gy
phos. ch sd.

Riverwoods

C41A-N

MATHEHY

Lake Killebrew

Belle NW

4.10 KL, DH 730 AM start 14
load core, return Mathew site
pull shaft's. pump 2 bags quick
grout 19.0' - bailed out
upper 1.5' and place plug
of bentonite chips. top off
& mended up cuttings

Levy rig & trailer to LK
Kissimmee St. Park, return
TLH 900 PM

Riverwoods

C411A-N

411A-S

17677
Lake Kissimmee
St Park

17688

Loctite

1x2 for blocks

~~steel~~ tied boots

Crimping stapler

~~duct tape~~

~~packing tape~~

silicone

safety glasses

CEMENT

- ENR mfg order
- 3/4 x 1/8 x 4' strap steel
- dust masks
- repl. lenses for goggles

4-21-98 KC + SM to LK Kissimmee
STATE PARK AMBIENT site.

ENR 2843 still in shop.

stapler, stapler, wood blocks
+ steel tied boots all still
in pu

W 17677

513ddc T 295 R 29E

LAT 27° 57.2' N 261

CON 81° 22.1' N 125

pdop 3.0
x 300'

0-2.5' push grey to bn sd.

2.5-4.0' push SSP - same

4-6. push mostly ft bn sd

6-8.5' 1 bn sd then dk break
(cement) sand.

8.5 - ~9.75' SSP. dk bn sand

End drilling 600 pm

KC to lake water - pu cement,
rubber boots, lumber for blocks
2 hrs

17681
Riverwoods

17691
C 411A - N

17693
411A - S

17677
Lake Kissimmee Belle NW
st pack

17688

4-22-98 7:30 START

16

prep hsm clear
run we spec -

- 9.75 - 11.25 humate stained gtz sdr gran
fine matrix - v poor recovery
- 11.25 - 12.75' ssp - med gk br sd,
sl clayey
- 12.75 - 15.25' lt to dk br gtz sd
w granules, humate matrix
- 15.25 - 15.5' hard humate cemented
sand. not to pull spec more in
- 15.5 - 17.75' bailed spec med brn sd +
gnt gtz granules
- 17.75 - 18.75' ssp. - brn clay sd as above
- sample bailed - loose in tube
- 18.75 - 21.25' pumped spec - as above
possibly some silt
- 21.25 - 23.5' ^{sp} or brn sd w gtz gran.
humate + clay matrix
- 23.5 - 26' pumped spec as above - possibly
silt
- 26 - 28.5' pumped spec - as above
- 28.5 - 31 " " " "
- 31 - 33.5 " " " "
- 33.5 - 36' out of orange sand into
green / Hg matrix sand - micaceous

17687
Riverwoods

17691
C411A - N

17693
C411A - S

17700
Acacia Pt #

17688
La Belle NW

still some iron cemented clasts &

qty granular

36-38.5' pumped - fine vlt. gr. qty sd
w qty granular, minor clay matrix

38.5-41' pumped lt yellow gr. sd some
almost orange.

41-43.5' pumped vlt. gr. dr. gr. gr. sd
sd w mica + qty granular

43.5-46' pumped spl. dr. gr.
clay matrix - f. gr. sd, some
clay blebs

46-48.5' pumped spl. - as above
slightly darker green

48.5-51' pumped - as above w/o clay blebs

51-53.5' pumped spl. lt olive - more
dk dr. clay blebs

53.5-56 soft drilling both fwd +
rotation - 2 spls collected

top spl in sand as above

bottom spl in primarily sp. soft plastic
stagnant silty sand? dy.

56-57' bailed sample - dr. gr. f. ^{sd}
+ silt w clay matrix - soft drilling

57-58.5' pumped spl. - as above
(lose more matrix pumping)

58.5' - 61' pumped ol. gr & ss w clay blebs⁸
or above

61 - 63.5' SAME

63.5 - 66 "

66 - 68.5' SAME

68.5 - 71 "

71 - 73.5' " TD

- NOTE bailed sample
collected at TD (basically plug
out of the bottom of the corehole
indicate that the clay bleb
litho (silty/sandy clay) may
be the predominant litho +
the sands are washed free
of the matrix.

pumped 1 bag quick gravel
69 - ~59' attempted to
wash in bentonite chips - plugged
at 38' in bsa (45' in hole)
pushed plug out w sampler sys

hole filled to 52'

SET 48.5' well arm - only pumped
3 gpm w 10' SCN + evidently
filled in w red/orange sand
from above 33.5' ,

portland cement
1" pvc 10'
4' 5/16" chain

19
attemp to pull well up 10'
- screen broke off
drill in 35' hsa, pump clear
set ~~30.5'~~ ^{35'} ~~32.5'~~ ^{32.5'} casing
w 5' screen ~ 25-30 27.5-32.5'

pump + deep - hole drilling in
as hsa pulled - pumped up to
~ 9 gpm clearing up down.

pump 6 bags portland ^{18.5-3'} ~~21'~~

End day 700 pm then
drive to LK water to pour
cement - return 900

chg oil + filter on rig

cement settled to - 3'
pumped + bags to top off + set
prod. csq.

pumped + surged - surge block,
vented at ~ 9 gpm
sl. cloudy lt gl. water

INV on rig

5 bags quick grout

1 bag hole plug

1-2 bags cement

3 x 10' 2" CSG

20

well construction summary

monitor well TD 38.0' TOC

stickup 3.0' 35' LSD

2.5' Tailpipe

5.0' screen - 27.5 - 32.5' LSD

no filter sand added - all formation.

Neat cement grout - 18 to

1st.

static WL 3.0' DLS

17684
Riverwoods

17691
C41A - N

17693
C41A - S

17700
Accon Pt #

17688
La Belle NW

0-23.5' UDSC
 23.5-68' Talim
 Buck?
 68-70' unnamed
 sand
 Crs elevation

W 17688 LABELLE NW 21
 Glades Co Ambient site - Hwy 74

SEC 2 ab T 41 R 28
 LAT 26° 56.708N
 LONG 81° 29.32 W
 elev

G. H. M. + JBS

4-27-98 Tam start. Drive to pick
 up rig @ Kissimmee S. pk. →
 Then to Glades Co. site.
 End day @ 8:00pm.

4-28-98 Tam start

Hand dig - 3' 6" cuttings.

2-4.5' push core.

4.5-5.5' push core.

Set bit / sampling equip.

5.5-6.5' full sample. Organic / sand.

Sand fill in bottom - 3'.

No pump except grout pump.

Not very strong. We are
 having problems getting bottom
 to clear.

pull flights back up 3'

6.5-7' full 2.5' run only bottom 6"
 is sample.

Riverwoods

C 41A - N

41A - S

7700

17688
 Labelle NW

2' fill in bottom. pump
clean w/ grovt pump. (SLOW!)

7-9.5 drill down + pump. No recov.?
9.5-11.5 sample. bad recov.

2' in bottom of bit, drill add'l
foot. → then pump.

11.5-12.5 End of pump int. is fine
white sand w/ ~~sand~~ clayey
water. Bottom fill w/ sand.

Drill add'l foot.

12.5-13.5 Pumped sample. - fine, white
sand w/ some clay. (greenish tint)

13.5-16 sampler in. white fine sand,
followed by coarse phosphatic
gravel (phs. Hard ground at end.)

16-18.5 plastic lt green/gray clay.

18.5-20 sp. sp. Good recov. Same.

20-22' same.

22-24.5 same w/ weathered shell, carbonate
strand.

24.5-26.5 clayey sand. gray-tan.

26.5-28.25 clay sand w/ hard clay strands.

28.25-29.75 Same.

29.75-31.25 hard, dry clay.

End Day @ 7 pm

Riverwoods

C41A - N

C41A - S

7700
Acres Pt # 2
E1F # 2

4-29-98

H.M. + GBS Start day @ 6:45

31.25 - 33 hard, dry lt. green-gray clay w/ hard strands of olive clay.

33-34.5 more plastic, lt green-gray clay w/ strands of white, carbonate-? Rotation pressure is irregular through this material.

34.5-37 same. Getting darker green.

37-38.5 Getting more sand. lt. grn. tiny specs of phos., ~~small~~ Heavy mins.

38.5-40 Split Spoon Sample.

40-42 sandy clay lt green-gray

42-43.25 same.

43.25-46.5 mottled clay sandy clay.

46.5-47.5 (split spoon 1' - 6" too far.)

47.5-49.5 Hard, dry green-gray clay/plastic

49.5-51.5 same.

51.5-53. Split spoon. clay expanded inside tube.

53-55.5 hard, plastic green-gray clay.

55.5-57. same.

57-58.5 Split spoon. (expanded.)

58.5-60.5 same hard, plastic green-gray clay.

60.5-62.5 same w/ some shell present.

62.5-63 Rig hits refusal at bottom of run. Material is very hard pan - sandcemented w/?

63-63.25 No real recovery. Sample appears to beavings.

Temporary TD ~ 63.25'

prep for evacuating site:

pulled one HSA out of the ground ~ 59' of auger in ground w/ 1" stick up. Hole covered w/ cuttings. Footer plate and Footer are in place. Site is ~ 75yds east of int.

end day at 1:15 am 4-30-98

Riverwoods

C 41A - N

41A - S

7700

Area Pt # 2

2 spark plugs RJ19LM
pull cord skip bs,
2pc - screw in muffler

25

5-6-98 KC 730 AM start
to TPA - per spec then to Labella New
site (w 100' E of A-6L-13)
- per Rig + trailer at Palmdale Tower
install mechanical water temperature
and oil pressure gauges (Hacker
had overheating Temp gauge + fluct.
oil press last wk -

to site set back up on hole -
w 10' sediment in bottom - pumped out
then closed up due to thunder +
lightning - to Labella then
return back to camp. end day
800pm

5-7-98

KC + SM 730 start - gas up
then to site - Rig has been broken
into - driver side window busted -
locks to tool boxes cut -

Reset 100' tape, 100' fiberglass
tape, 25' Stanley contractor tape
measure + 3/8-1/4 drive socket set
set

3/4" elbow

6 2" MASTER LOCKS 3358

grease gun

tape measure - 25'

tape measure 100'

shop towels

26

63.25' - 64.25' M6 drill w/2
run - hard penetration - seems

softer at btm. - spec

poured - locked - punched

thru hard zone into green

phos clay - plastic - got 2' spl for
1' run

64.25 - 65.75' gn plastic shelly, phos
clay + sdy clay

65.75 - 66.5' ssp stiffer clay

66.5 - 68' ol. gn clay

68 - 70' ol. gn clay sd w phos +
gt 2 pbls.

- also collected pumped (washed)
spec at 70'

70 - 70.25' gt 3 + phos sd + gravel w lt gy
calc (?) matrix - have spec from
spl R shoe + pump spec

70.25 - 71.5' ol. gn clayey phosph. sd.
bottom most ~ 2" mod cemented.

71.5 - 73' ol. gn clay phos sd. - lowermost
1 inch is cemented with calcareous?
cent.

73. ~ 73.5' ol. gy coarse plussp. sd
+ clayey sd.

~ 73.5 - 78.5' two pumped spls lt gy
fine sd.

Riverwoods

C 411A - N

411A - S

7700

Accon Pt # 2

ESF # 2

78.5-80.5' pumped lt. sl. fine sd w clay matrix
 80.5-80.75' mod cemented fine sd.
 80.75-83.5' pumped spl - mod cemented
 sd

83.5-85' - bailed + pumped spls
 drills harder started getting dk bn
 cemented sand duster
 85-86' TO AS above spl

86' well over

3' TP

10' SCN

∴ 72.5' CSG - cut 5' CSG off
 at top of auger ~ 1' + 4'

washed in finer pack + natural
 collapse to 63.5' b.s

pulled KSA's to 63.5'

pack up + move rig, gear up rig
 return to camp 900 pm

5-8-88 7:45 start. put new
 tape measures etc then to site
 pull KSA's - sand collapsing

RIVERWOODS

C41A-N

C41A-S

7700
ACROSS Pt #27701
E5F #2

filling hole once next 20'
 of hose were pulled (ie 35-40' left in
 hole.

washed down + circulated
 sand with centrifugal pump +
 jet development as caps
 pumped 5# bags quick grout
 50' - surface

washed out bentonite to 6' bcs
 pumped 2 bags portland to surface
 set manhole cover
 top of csq 2" bcs

17691
 Riverwoods

17691
 C41A-N

17693
 C41A-S

17700
 Accor Pt #2
 17701
 RIF #2

5-12-98

17689

29

Riverwoods, Highlands Co.
JBS + CB 6 am start.
Begin work @ 2:30 pm

Lat 27° 22' 906 W (54")
Lon 81° 06' 615 W (37")

T 355 R 32E S 34d (11R)

Day 1

- 0-2.5 push core - sand w/
dk organics
- 2.5-4 push core - hit refusal.
hard sand zone - red color
- 4-6.5 sampler in - refusal. Bumped
nose in one place + continued.
bad recovery
- 6.5-8 Bad recovery
- 8-10.5 Bad recovery. bump nose back out.
- 10.5-12 Split spoon, good recov., feel out
bottom.
- 12-13.25 Hard drilling. Bump nose back in.
50% recov.
- 13.25-14.25 med. hard drilling. Organic
reddish brn. sand w/ sand
pebbles med. grain.

16.25-18.75 same w/ what seems to be
some blebs of clay.

18.75-20.25 split spoon. good recov.
(med - hard drilling.) Same.

20.25-22.75 med-fine grn sand ~~and~~ reddish
brn. in color, lightening this
run to tan. (Because of
previous pumping to clear?)

22.75-23.75 fine-med sand tan w/ some
clay. 3' sand/fill in
bottom of pipe

End Day. @ 7:15pm

Day 2

5-13-98 JBS + CB Tam start.
pump clear to bottom.

23.5-26.25 - 50% recov. sand w/ pieces
of organic material - wood.
2' of fill in bottom.

26.25-28.75 pumped sample. tan
sand w/ organics.

28.75-33 ~~split spoon~~ (drilled and pumped)
tan sand w/ gray
clay blebs.

- 33.0-34.0 pumped sample. fine-med. grn sand w/ gray clay blebs.
- 34.0-36.8 Sample gray-blue clayey sand. (Top 1/2 of run probably affected by previous pumping.) Good recov.
- 36.5-39 Top 1/2 same green-blue clay sand. Bottom 1/2 contact w/ shell bed in clayey sand.
- 39-40.5 Split spn. Same material
- 40.5-43.0 Sandy clay w/ shell. blue-green. (phosphatic)
- 43-44.5 bluegreen-gray clayey sand w/ bits of shell + phosphate. Sampler plugged off. (?) Pebbles
- 44.5-46 same.
- 46-47.5 Sp. spn. No Recov. drilled extremely soft. Fell out Bottom.
- 47.5-48.5 soft lt. grn-blue sandy clay w/ shell. Soft drilling
- 48.75-50.25 Sp. spn. good recov. same soft lt. grn-blue sandy clay w/ shell. Soft drill.
- 50.25-52.5 Good recov. lt. gray sandy clay w/ shell mat. & Bryozoans on sters

17719
Dixon CK

C41A-N

17693
C41A-S17700
Accon Pt #2
EIP #2

52.5-54.0 sandy clay lt. gray w/
phosphate specs. Shell content
decreasing Good Recov.

54-55.5 Sp. Spn. Sample. good recov
easy drilling. open hole.

55.5-57.5 gray, phosphatic sand w/
some shell flecks. okay recov.
med-hard drilling. (fine-med grn)

57.5-58.5 gray med grn sand w/ shell
clay content increasing down
interval.

58.5-60.5 gray clayey sand, phosphatic
w/ shell. Contact w/
plastic clay - blue gray at
last 1 ft of interval.

60.5-62.0 Sp. Spn. Good recov. same as
above but clay content +
phosphate increasing down
interval. easy drilling.

62.0-64.0 clayey sand w/ weathered
shell + phos specs.

64-66.0 same.

66-68.0 same.

68-70. same.

70-72. same w/ increase in clay
content at bottom. Very Dry.

17719
Dixon Ck

17691
C411A-N

17693
C411A-S

17700
new pt #2
17701
pt #2

12'-13.5' same lt blue-gray clayey
sand, phosphatic w/ trace
shell frags. easy drilling
good recov.

13.5'-15.5' same.

15.5'-17.5' same w/ clay content
increasing at bottom. →
shell content increasing. color
darkening to dk grey-grn.

17.5'-18.5' dark grey-grn. plastic clay
w/ whole shells. easy drilling
(tight.)

18.5'-20.5' same only dryer, less shell.

20.5'-22.5' same only even ^{more} shell.
easy drilling.

22.5'-25.0' same dk green-grey clay
sand. Sand increasing
shell content decreasing.
hard cemented sand (carb)
at bottom.

17D

pull HSA to 45' - open hole
to 66.

pump 2 bags Bent. grt to
46' END DAY. 7pm

17719
DIXON CK

17641
C41A-N

17693
41A-S

17700
Acres Pt #2
ESP #2

5-14-98 Tam start - JBS+CB
to LaBelle NW to develop well.
W.L.: 3.5 b/s
GPM ~ 3.5

Method - pump/surge. Pumping
1 tub full of water followed
by surging w/ surge block.
Repeat pumping until water
clears up → etc.

Unable to get hoses^{to} pass clamp
link → unable to get to
bottom of well. Hose approx.
55' down. Lifted ~ 1/3 cup of
sand out of well.

Well developed well. Water is very
clear. Surging clouds up water,
develops out within 10 min.

Back to Riverwoods site
at ~ 3pm.

17119
Dixon Cr

11641
C411A-N

17693
C411A-S

7700
new Pt #2
2

Riverwoods.

Bent. Grt to 43'. pull Augers
to 33.5 - hole fills in w/
~~can~~ clayey sand cuttings. Drop
in Bent. chips (hand full.) @
33.5. pull Augers to 28.5
Set casing.

Casing TD - 29.75
screen - 16.75 - 26.75
6.5 bags 20-30
3 bags neat cement grt. from
12' ~~12'~~ to surface.
~ 4 gpm

W17691

9-23-98
0 - ~63' udx
~63' - TO Qsu
(PCPC)

5-19-98

36

KC + SM to highlands to meet
CAROLE Milliman - setup on
site - KC w/CAROLE to next
site.

W17691

C-41A North

S 21 dda T 375 R 32E

LAT 27° 14.934 (56") ^{PODOP}

CON 81° 07.673 (40") 2.3' ± 300'

Elev 32'

0-2.5' push - dense sand

2.5-4' push dense sand

4-6.25' brown + white sand

6.25-7.75' ssp brown sand

7.75-9.75' - fine sand v little

recovered - cable off reel. ran

out by time we got it fixed (purple)
add 1 sample

9.75-11' fine sand - no recovery w

3pcr - bailed sample

11-12.5' bailed spc - fine sd w
bn clumpy matrix

end day 8:30 pm / 5/29/98 start 730A

12.5-13.5' bailed sample. f. bn sd as above

(13.25-16.25' bailed spl sand as above. softer than #1 foot - organic & clay cemented blebs

16.25-18.25' bailed spl - f. sd. lt. bn, less organic matt.

18.25-20.5' lt bn sd, fine, dk

gy/blk clay stringer - bailed spl 20.5-23.5' bailed spl. As above

23.5-26' purpl spl as above

26-27.25' copper part. drilled as above - lost 3" soft. stopped

run - purpl spl - sd then black clay - lost jet cap off end of pipe - washed to 29.5'

29.5-32.5' purpl spl fine sd w dk clay blebs

32.5-34.0' purpl spl clean fine sd

34-35.75' purpl spl fine sd w incr black silty/sandy clay blebs

~~35.75~~ 35.75-38.5' same but much more clay

38.5-41' purpl - same as above

41-43.5' wl spl soft med grey clayey sand

17719
Dixon CK

17730
WEST #10

17693
C41A-S

17700
near Pt #2
EST #2

SUNSCREEN

large blocks

first aid kit

large divider

safety glasses

elec tape

tef. tape

125' 7/32 galv. cable

38

43.5 - 45.5' - pumped spl -
COARSE grey sand & clay
drilled down to 45.5

45.5 - 47' ssp - NO usable spl recovered

47 - 48.5' bl. gn sdy clay/clysd

48.5 - 50 ssp spl - sand locked
temporarily - v poor recovery

60 - 52.5' wl spl - sand locked

big time - cut cbl, pull all hsa's
spend remainder of pm getting
sampler unstuck

retrieved 1.5' gal (50-51.5')

End day 8:45 pm

5-21-98 7:30 A. start.

hole filled in to 6.25 bts

ran in 52.5' hsa.

pump out plug

51.5 - 52.5 NOSM

52.5 - 55.6 bl. gy clayey sand.
abd. heavy minerals

55.5 - 58' grey clayey sd. - pumped -
small shell fragments common

58 - 60.5' grey clayey sd. - pumped -
sl^{more} shelly, abd silty clay bldgs.
see sep. spl - prob. all this litho

Toney Drilling

- 15 Auger repair bush
(died $3\frac{1}{4}$ - short bolts)
- 10 Auger plugs
- 18 Auger bolts (short type)

- 1" press hook x 7'
king nipple each end
- 1" x 50' press hook
king nipple each end
- 2 split bushings - Mobile
Lead cyl

To Oketchewee gear up rig
and day (21st) 900pm

39

60.5 - 66' - two pumped runs
81 94 silty clay w. steel fragments
driller like soft homogeneous material
- prob litho like coarse spec section
not the sand

66-69' AS above - possibly slightly
spiller

- bottom of hole is dense clay
(wash pipe & bouncer off -
bailer won't pick it up.)

69' TD

set 10' SCW
3' tp
20' CSG TONLS

pump + surge - natural fill
to 8' 6LS

2 bags bentonite chips 8-5.5'
pump + surge w. vented block
pumps up to 15gpm thru 50' x 1"
hook

pump 3 bags portland cement 5.5-LS

~~29.5"~~ Stickup 5-22-730 AM start
3 bags redi mix concrete for pad

$$\begin{array}{r} 9'8'' \\ 2'5'' \\ \hline 7'3'' \end{array}$$

~~36'2"~~
~~2'5"~~
~~33'9"~~

INV. ON RIG

5 bags quick grout

1 bag hole plug

2 bags 20-30 SAND

3 bags quick concrete

6 20' x 2" CSG

1 5' x 2" CSG

1 5' x 2" SCN

40

29 ~~30~~" stickup
3'2" ~~36~~" CSG
20' CSG
10' SCN
3' TP

Well TD 36'2" (top of CSG)
" " 33'8" LS

SCREEN 20'8" - 30'8"

pumps 159pm clear water

STATIC WATER level 9'8" b TOL

7.25 bLS

RETN TLM 720pm

17719

DIXON CK

WEST #10

C41A-S

17693

7700

ALCOA Pt #2

17701

EST #2

9-23-98
0-38.5' upsl
38.5' QJM
(P-CPC)

* New Bailer works
great. !!

Sand locked. →
Sand locked. →
(got sampler loose by filling
Augers w/ water and pulling
sampler up 3-4" & back down.)
Took about ~ 5 min.

17693

41

5-25-98 CB, JBS Tam start
to Highlands C-41A Sof Hwy 70.
Arrive at site 4pm.

Lat : ~~27°~~ 27° 13' 21"

Lon : 81° 04' 06"

T 37S R 33E S 31 aa

Elev ~ 28'

0-2.5 push core

2.5-7.0 pumped sample. Blew most
of sample out bottom. Very, V.
fine, buff sand. ~~water @ 7'~~

7-9.0 sampler run. No recovery

10-11.25 sampler run. Bad recov. 6"

very fine. (Briefly sand locked.)

11.25-14.0 pumped sample/Bailed. Same.

14.0-19.0 pumped sample. Buff sand.

somewhat coarser, root pieces.

19.0-22.0 pumped. Very organic, silt, roots.

22.0-23.5 Bailed sample. Very fine.

flowing sands. grayish.

Augers are tight - getting
frozen into sand. Need high
rotation, reaming frequently.

End Day @ 8pm

17719
Dixon CK

17730
WESF #10

17693
C41A-S

17700
Accon Pt #2
ESF #2

5-26-98 CB, JBS

42

10:45 am start.

23.5-26.0 Bailed sample. V.V. fine sand. Augers frozen easily. Frequent reaming.

26.0-28.5 Bailed sample. V.V. Fine.

28.5-31.0 Bailed sample. vv. fine. grayish color.

31.0-33.5 Bailed sample. V.V. fine phosphatic sand, grayish

33.5-36.0 Bailed sample. same. vv. fine grayish phos. sand.

36.0-38.5 Bailed sample. Same.

38.5-41.0 Bailed sample. V.V. fine grayish phos. sand w/ shell frags.

41.0-43.5 Bailed sample. V.V. fine grayish & phos. sand w/ shell frags.

43.5-46.0 Bailed / plumped sample. First 6' same as above. Last 2' is shell bed w/ whole shell, frags, and phos pebbles.

46.0-48.0 Sampler in. 50% recov. coarser (med) gray sand w/ shell phos. H. blue-gray clay of sand. last 4'.

7' shell fill in Augers - 7
pump clean to bottom.

Sampler back in.

48.0-50.5 No Sample. (?) pushed
easy, core catcher in
place. Measured hole ->
clean to bottom. (?)

50.5-52.0 Bad recov. light gray
clay fine sand w/ shell
+ some phos.

52.0-53.5 lt. gray-blue clayey sand
w/ shell + phos. (whole
oyster shell present.)
Good recov. - hole filled
in 2' w/ material.

53.5-55.5 Drilled 2' to pump sample.
Pump broke. Tried to
use graft pump - not enough
flow. Tried to Bail -
No sample.

Fix shp pump. Still
unable to keep - 6" from
filling in. Unable to get
sampler in.

55.5-57.0 pumped sample. Fine
sand + clayey material

17719
DIXON CK

17730
WESF #10

17731
WINTER CK

17700
GALCON Pt #2
17701
Pt #2

Grout from 7-0' →
2 bags neat cement.

Bent. Grout 10-7'

44
is lost. Sample is shell frags
+ phosphate pebbles. Unable
to keep bottom of hole open.
57.0-61.5 pumped samples. Sample is
mostly whole + frag. shells,
phos. pebbles and blebs
of dk. gray clay. (Fines
are prob. lost.) Bottom
will not stay open.

61.5-63.0 pump sample. Same as above.

63.0-64.0 pump sample.

TD Decide to TD here.
Late in evening, need to
set well, grout, develop.

Hit no confiner. hole backfills
w/ cuttings to 40'

Casing assembly 39'. 3' t.p.
10' screen, etc. Set well in
fine formation sand. (Can
not get filter pack in.)
- Casing drops 2' while
pulling augers. Cannot
retrieve. (Add coupling + ext.)

Develop until 7:25 end day

17719
DIXON CK

17730
WEST #10

17731
WESTWATER CK

17700
GARCON Pt #2

17701
EUF #2

warehouse
combo

~~2210~~ 2710

5-27-98

45

6:50 am start.

prepare flush mount, develop.

1ETN T2H EARLY AM 28th

well depth
screen int.
static wt.
well yield

GPM - 4.0

17719
DIXON CK

17730
WESF #10

17731
WINTER CK

17700
GREEN PT #2

17701
ESF #2

W17700

46

GARCON Pt #2

6-9-98 KC, CB to GARCON Pt
meet Steve Brown - select
exact site for well

- 2943/trailer combo still
drives squirly - swung
up loose trailer legs. better
but not solved

SEC SE 2 T15 R 28W ^{pg 2, 8}
LAT 30°31'55" > map 93656
LON 87°03'14" .281 17"
Elev ~24'

0-2.5' push spc

2.5-4' ssp - driven - fine
sand

4-4.25' no sm

4.25-6.75' w/spl bn, gy + gl or
sand + clayey sand

6.75-8.75' yellow + lt bn sand

8.75-10.25' ssp spl lt bn sd
SATURATED

8.10.25-12.75' red or sand upper

- 3-4" thin clay clay
 12.75' - 14.75' grey plastic clay
 14.75' - 16.25' ssp - grey plastic clay
 16.25' - 18.75' gy clay
 18.75' - 20.75' wlspl grey clay
 20.75' - 22.25' ssp spl grey clay
 plastic - soft.
 22.25' - 23.75' grey clay, some
 odiferous plant(?)
 23.75' - 25.75' 2.5' mowed - clay, soft
 as above - sandier at btm
 25.75' - 27.25' ssp spl - grey clayey
 sand
 27.25' - 28.75' grey clayey sand -
 first water flow into hole
 since top of clay
 28.75' - 30.75' - clayey sand +
 silt - poor recovery
 30.75' - 32.25' ssp - no recovery
 sl. clay sand - bailed spl
 drained thru + 1 screen
 bailed spl at 32.25' - 32.5'
 end coring for day

17719
Dixon CK17730
WEST #1017731
WESTWATER CK17701
WEST #2

~~grease gun~~
Nat 471270 seal
~~fall towel~~

Threaded PVC caps

to Autoparts store in Milton⁴⁸
for grease gun & spec seals
End day 8:30 pm

6-10-98 7:15A start
Air up trailer tire, RR on ttr.

32.25 - 33.75' ssp no recovery -
hole clean to bottom

33.75 - 35.5' - ol. gr + med gray clayey
sand - temp sand bailed

35.5 - 37' lt. gy sl. clay sd

37 - 39' lt. gy sand - v. sl. clayey

- lost part of spl on retrieval

- purged down clear - sep. purged
spl

39-41' lt. bn/gy sand

41-~~42.5~~ 42.5' ssp spl - FAILED
recovered only ~ 2" sand

sd flowing into hsa - taking
water too fast for 1" hose
sucks in with bailer

SWL 15.6 bls w ttr to 43'
42.5-43.5' bailed spl clean sand
w blebs gray clayey sand

17719
DIXON CK

17730
WEST #10

17731
REUNTER CK

17701
BUELF #2

43.5' - 45.5' drilled in w/o sampler⁴⁹
1' sediment in pipe - would not
bail

Pulled 3 1/4" hsa's - drilled in
43.5' of 6 3/8 hsa - out of water
- to town - got trailer tire
repaired + tire chain added
- to see if the rain groove
tires are the stability prob
in river.

END DAY 800 pm

6-11-98 KCFB 7:15 start
- 10' of sand + silt in btm
of hsa - end plug must
have broken -

made recirc adaptor 3" +
+ bentonite + core blocks -
circulated sediment out

installed 45.25' Assy

40' CSG

5' SCN

.25' END CAP - NO room
for tailpipe - thin sand
zone.

17719
DIXON CK

17730
WEST #10

17731
KENTWATER CK

17701
BUESF #2

50
pump + surge ~ 9:30pm - sl. cloudy
" real leonade water (greyish)
turns limonite yellow on standing
5 hp pump started self deti.

FORMATION SAND Plus 4 bags
20.30 to 31.75' b/s

After pumping + surging w.
30' hsa in hole for tremmies
4 bags Quik Grout - pulling
hsa's as needed to unmask
addl. volume

Quik grout 31.75 - 34'.
washed out bottom to
~ 8' (quade water level)

pump 2 bags portland cement
21 → 8' b/s

cleanup site - return camp 8:00pm

6-12-98 7:20 start
grout settled to ~ 2' b/s - Added
1 bag of quickcrete to - 1'

5' SCREEN
NO tail pipe due
to thin sand zone

51
1 bag 20-30 SAND to set
manhole cover

top of casing 1.5" b/s (orig.)
static wc 17.5' b TOC

- pumped ~ 2.5 hr - cant surge -
only running pump. wont pull the
lift w/o foot valve
WATER pumped clear

6-30-98 KC, CB - setw further
deep.

well to 43.0' top of cs
top of cs 3.5" below
top of manhole cover
static wc 18.0' b TOC

Surge well w surge block.
pump + surge at 4-9 gpm
~ 5 hr

End day 8:10 pm

17719
DIXON CK

17730
WOLF #10

17731
ESTIMATE CK

17701
BWSF #2

W 17701

52

Blackwater River State Forest
Site #2

S 29²⁴dd T 4n R 27w
LAT 30° 49. ~~34~~ 203²¹ pd op
Lon 86° 57. ~~44~~ 35²¹ 415^{3.8}
Elev 210'

7:30 am start. JBS, S.M.
arrive at 12:30

- 0-25 push core. clay sand. orange.
25-50 push core. switch over to
HSA set up for sampling.
4-6.5 good recov. clayey sand.
6.5-8.25 bad. sampler plugged off.
- Hole going crooked. -
move rig forward ~ 6"
Does not help. Plug hole and
start over 2' over.
perched ground water @ 8'.
9-10 sp. sp. Very hard, packed
sand. med grn. / orange.
10-12.5 Bad recovery. Sample
is sappy. Same. Orange
clayey sand.
12.5-14. Same - Bad recov.

17719
Dixon CK

17730
WESF #10

17731
Blackwater CK

17701
WESF #2

Bad T-storm coming.
Have to pack up and wait.
End Day at 5:30.

6/24/ 7 am start. UBS, SM

14-16.5 good sample, easy run.

Top half - orang. clayey
sand. Bottom is mottled
Buff and Brick red clay.

16.5-18 sp. spw. (no indication of
water & loose plugged off w/ Filter
cage)

18-20.5 easy push. good recov.

Mottled red/buff clay varying
from clayey sand - sandy clay.

20.5-23. easy. Mainly lf. gray
clay mottled w/ some brick
red + orange.

23-24.5 sp. spw. good recov.
Same material.

24.5-27. good rec. bowed sampler
clay is very plastic.

27-28.5 good rec. Filled entire
sampler. No Down press.
High rot.

17719
DIXON CK

17730
WESF #10

17731
WESTWATER CK

- 28.5 - 30. Sp. spn. good recov.
- 30 - 32.0 good recov. lt. gray clay w/ iron stain - 7 pink at bott.
- 32 - 34.0 same lt. gray clay w/ iron stain. half of interval is pinkish.
- 34.0 - 35.0 Sp. spn. good recov. same. lateral. Plastic lt. gray mottled clay.
- 35 - 37.0 good rec. same lt gray mottled clay. (mottled w/ brick red & orange.)
- 37.0 - 39.0 bad rec. Hit clean sand zone and water. Water found @ 37'. Sample is shrimp colored sand w/ some clay changing to a lt orange to buff clean sand below.
- 6" in bottom. Tried to bail. Pumping to clear, but water was just going into formation, no return at all. 6" still in bottom.

- (pulled augers up 8' to get sampler in.)
- 37.0-44.0 No recov. Bailed out of bottom. 1'6" of material in HSA. Pump.
- 41.0-43.0 No recov. Bailed. mod grn white sand w/ pinkish silt.
- 43.0-44.0 pumped sample. Coarser grained white sand.
- 44.0-47.0 pumped. coarse white sand. TD

pull HSA - Go back in w/ 670. Clay is too sticky. bringing rotation up to 1200 psi. leave site at 7:30pm.

@
Truck is having major transmission problems. Does not want to go over 50mph. Stop to check fluids. Put in 1/3 container of trans. fluid. End Day at 11:30pm.

10/25 pull 6 5/8 augers and go
back in w/ smaller.
Have lots of trouble getting
wood plug out. pull back up
to ~~surface~~ hole to knock out plug
Drift back in and pump sand
clean w/ circ. system.

Install 2" casing.
52.25' from L.S.
5' screen
3' T.P.

Formation fills in around
screen to 39'. ~~slushy~~
slushy clay to ~ 8'. pull augers and
prepare to jet/tremmie in
Bentonite.

Not enough water for process.
(no way to get water w/
no pick up.)

End Day 6:30pm

17719
Dixon CK

17730
WEST #10

17731
Estimate CK

6/26 7:30 am start.
(stop to eat breakfast -
half hour.)

JBS, SM arrive at site
and do all prep work and
clean up while waiting for
C.B. to bring Suburban.

Casing T.D. 52.25' BL.S.
W.L. 35.5' BL.S.
stickup: ~ 2.5' stickup

Tremmie in 5 bags bentonite from
21' surface (2' below surface)
Displace extra bentonite.
w/ grout from 7' - surface

5 bags bent.
4 bags cement.

Need to go back and finish
up pad and develop.

SAGCRETE (2)
 1 1/4" A/C (2)
 1 1/4" A/C COUPLINGS (2)
 1 1/4" FEMALE THREADED END CAP
 mixing tub

54.25
 52.00
 2.25

58
 6-29-98 - KC-CB - 730 AM sta. ch
 nbn to Blackwater River St. For
 site #2

54'6" TD (top of csg)
 38'0 SWC (toc)

pumped well w 1" hose +
 foot valve cycled by wireline
 in conjunction with centrifugal
 pumps - pumps ~ 3 gpm under
 those circumstances.

Pulled damaged protective csg
 (locking tab broken off.)
 set new prot. csg - mix 3
 bags portland, add in 3
 bags 20-30 sand. will
 need to complete in AM.

Note: when displacing bentonite
 grout - use lots of water
 to flush clean before pumping
 cement. -

displacing grout w cement incorporated
 bentonite in grout - no strength.

end day 8:15 pm

17719
 Dixon CK

17730
 West #10

17731
 Westwater CK

6-30-98 KC, CB 7:30 A 59

start. - pm materials then
to site. complete surface
pad

continue development -

4 gpm. ~~drill~~ discontinued
development due to increasing
pvc shavings + wear on
foot valve. - pulling some
brown with sand + water

* when purging - need to
purge to bottom to clear out
any possible shavings remaining

go to Garcon Pt #2 site
to complete development

end day 8:10 pm

17719
DIXON CK

17730
WESF #10

17731
WATER CK

190' elev

7-1-98 7:30 start

W# **W17719**

SEC 31 T6N R 27W

CAT 30° 58' 48"

CON 86° 59' 03"

SANTA ROSA Co

Blackwater River St. Forest

Site 4 - Dixon Creek

elev ~ 190'

0-2.5' push spl - thin soil then
stiff clay / clayey sand

2.5-4' - ssp

4-5.25' push spl - y.l. + orange
clayey sand

5.25-8.5' gray, orange + blk red mottled
clay

8.5-10.0' ssp

10-12.5' gray, orange + blk red mottled
clay

12.5-15' gray + brick red mottled clay

15-16.5' ssp. - sandier

16.5-17.5' orange, brick red + gray
mottled clayey sand

17.5-19' or blk + gray sdy clay

19-21.5 same.

21.5-23 ssp

23-24.5' orange bn + gray mottled clay ⁶¹

24.5-25.5' or bn + gray clay + clay sd

25.5-28 same - becoming orange.

Iron oxide lens in base

28-29 ssp. - sandier - hard penetration
first water at ~28.5'

29-31' - hard penetration -

plugged off at ~1'. shortensplit 1"

31-33' gl. + cream sand + clay sand

33-34 ssp. gl. clayey sd, mica.

34-36.5' - back in clay - laminated
+ mottled - bulged split

36.5-38.0' gl. or sand upper 1/2

dk gy sand then dk gy clay in
lower 1/2. Wood fragments at base

38-39.25' ssp - dk gy clay
w/wood

39.25'

thunderstorms move in ~5:15
wait till 6 pm - call it quits
return town 7:30

17730
BUDSF #10

1731
ESTIMATE CK

7-2-98 7AM START

39.25 - 40.75 gray clayey sand

40.75 - 42.25

42.25 - 43.75 ssp - ~~dk~~ lt gray clay

43.75 - 45.5' dk gy sn sdy clay

45.5 - 47.5' gray clay sd

47.5 - 49.5' same

49.5 - 51.5' clay or above, thin -

8" sand zone - last 2" clay

51.5 - 53.5' lt gray sd + clay sd.

53.5 - 55.5' as above - getting darker
+ clayey toward base55.5 - 57.5' blue green + orange mottled
clayey sand

57.5 - 59.5' greenish y. clay

59.5 - 63.5' greenish yellow clay + clayey sd

63.5' TEMP TD

pulled 1 ft. plugged auger w
tapered plughole is 45' S of edge FR 2
0.4 mi E of Dikon Ek bridge

LEAVE TCH 4:00 PM

7-9 8am start.

Return to site to plug + abandon.

Backspinning augers takes clay to 35'.

Pull augers to 10'

Pump 2.5 bags bent. grout
pull remaining augers.

pump 2 bags H. cement grt.
~ 1' below surface.

Fill in w/ cuttings and
sand to bring up to
ground surface.

Take Trailer back to BURSF.
Bring rig back.

Return @ 6:15 pm

17730
BURSF #10

7731
Estimate OK

Okaloosa
CO
205' elev

W 17730

64

7-21-98

Blackwater River

Site No. 10

CB + JBS

7am

Start from FGS whse.

Lat $30^{\circ} 52.367' N$ (22")

Lon $96^{\circ} 39.761' W$ (46")

T 4N R. 24W S 5 SW SE

0-2.5 pushcore. tan/grey sand.

2.5-5' pushcore. tan/orange mottled clay.

5-6.5' Sampling assembly in good recover. mottled grayish tan and orange hard, dry clay. Very slow drilling.

6.5-8 sp. spn. 50% recover. same.

Have to stop to replace 1. tooth on the sampler retrieved. (broke off?)

8-10.5 good recover. very slow drilling. (high rotation.) clay is mottled orange and light grey.

10.5-13.5 Water level at ~ 13'. same material.

17730
BUESF #10
BLACKWATER CR

3' sand in bottom of hole
have to stop and pump. ←

end Day
@ 7:15pm. →

13.5-15.25 sp. spn. Same mate.
orange + lt. grey sandy clay.
dry. very slow drilling.

15.25-17.25 sample is wet. Same
material w/ sand content
increasing.

17.25-19.0 sample has even more
sand. med. grn. same mottled
orange and lt. grey clay.

19.0-20.5 sp. spn. Sand, coarse
w/ some clay. (orange.)

20.5-22.5 sampler plugged off in
clay. First 6" is coarse
sand, then back into sandy
clay. water has disappeared.

22.5-24 brick-red and greyish tan
mottled clay. red is almost
purple. Very Tight.

24-25.5 same material w/ some
fill at top. (sp. spn.)

25.5-28 tan and grey mottled
sandy clay w/ some spots
of brick-red clay

28-29. Same.

29-30. Same. very dry. Slow
end Day. drilling, High rotation.

06., JPS. 7:30 am start.

→ open hole, ~~water~~ water @ ~14'

30-31.0 same tan and grey mottled.

31-33.0 same.

33-34.0 orange. sandy clay.
soft.

34-34.5 short run - sampler
plugged. Bump nose
in 1 notch.

34.5-36.0 brick red and tan
mottled clay. ^{w/ chunks} of sand stone.

36.0-38.0 deep red w/ iron cemented
sand stone. Very hard
and dry.

38-40.0 blue-gray sticky clay
w/ fine sandy lenses
of same color. Contact
@ 38.1

~~40.0~~
40.0-41.5 same material.

41.5-43.0 sampler bowed and
stuck. → Releases
w/out losing sample.
Material is same.

43.0-44.0 sample appears to be
pure clay. Same
blue grey color.

Sampler stuck - bowed
badly at bottom.

Free sample. Do not lose any — sampler completely full. Will try drilling at lower rotation.

~~44.0~~ pin jammed on right side auger rack. I go underneath to hammer pin out and cut my head on corner of metal plate on auger rack. $\frac{1}{8}$ " deep puncture wound. Take a break.

44.0-45.5 C.B. → same material. light grey and dark blue-grey clay.

45.5-47 same mottled light and dark clay.

47-49.0 Clay color is light grey
49.0-50.75 clay is even lighter in color. light blueish grey.

50.75-52.25 C.B. → slow drilling. sticky. high rotation. Need to add Feed press.

52.25-54.0 sampler stuck, bowed. horribly sticky. clay light blue-grey w/ iron staining

54.0-55.5 No sample. sandy material

Craig
Drilling

Crane

Drilling



- 55.5 - 57.0 good recover. Sandy clay. light blue-grey and iron stained notes
- 57.0 - 59.0 good recover. very sandy clay. coarse sand. mostly light blue-grey w/ some iron staining.
- 59.0 - 61.0 same. bottom half is a little more sandy.
- 61.0 - 63.0 Top half more sandy, getting back into clay zone at bottom.
- 63.0 - 64.0 grey clay coarse sand some rounded quartz pebbles.
- 64.0 - 66.5 grey coarse clayey sand.
- 66.5 - 69.0 grey coarse clayey sand. clay content increases at end of int.
- End Day. T.D. hole here. (No more boxes anyway.)
- 7:30 pm.

C.B.

JBZ. 7:30 am start

69

Check hydraulic leak
on rig.
arrive at site & pull auger to
45'. Back fills to 52'.
pull two more flights to
35'. Back fills to ~40'.
Fills in to 35' w/ back
spinning.

Pump down 2 bags bent.
Brings bent up to 12'.
pull remaining auger.

Pump down 2 bags
cement & put - Brings it
to within 1' of surface.
Also added ripped 1/2 bag
quikrete to this, mainly
to dispose of torn bag.
Add cuttings to bring
above surface.

Clean up and take rig &
trailer back to Forestry dr.

Substrate ck

17731

red trash bags
black markers
black x5 sharpie

W 17731

70

1-28-98 KC, SM

Sweetwater Creek

LAT 30° 59' 47.3^{28"}
LON 86° 47' 23.9^{44"} } Ptop 3.8

S25N05E T6N R 26W

Elev. 210

0-2.5' push spl

2.5-4.0 push spl - ssp

4-5.5' wc spl

5.5-8 wc spl

8-9.5' ssp

9.5-11.5' wc spl gl. or clay sd

11.5-13.25' same

13.25-14.75' ssp gl. or sd + clay sd

14.75-17.25' ~~ss~~ wc spl gl. or clay sd

17.25-19.75' " " " "

19.75-21.25' ssp lt gl. clay sd.

hit water at 21'

21.25-23.5' lt gl. sl. clay sd

23.5-26'

26-

ssp

END day 5:30

17731
Sweetwater ck

7-29-98

800A start

71

load water, set up shade/rain tarp.

SWL 19' bcs

26-27.5' ssp. no recovery - clean sand

27.5 - ~~30~~^{29.5} yl. or sd + chy sd
~ 1 ft recovered

29.5 - 31.75 - yl. or sd upper 4-6"

thg thg yl. or mottled clay

31.75 - 33' ssp ~ 6" sl. chy sd rec.

33 - 35.5' yl. or clay + clayey sand

35.5 - 37.5' yl. or mottled clay + sdly chy

37.5 - 39.5' yl or mottled clay

39.5 - 41' ssp yl. or + blk med clay

41 - 43' med/dk ^{gray} clay

43 - 45' lt gy sdly clay + clayey sd

45 - 47' lt. gy chy sd

47 - 48' ssp same

48 - 50.5' med gy sdly clay

50.5 - 53' med gy sdly clay

53 - 55.5' dk gray sdly clay or above

upper 1.75' thin dk brgy + lt gy
bedded sand w wood fragments

0-11.5 dry clayey sd
11.5 - 19 dry tan clayey sd
19 SWL
19-30 sd + clay sd.
30-33 incr clay

end day
8:30 PM

55.5 - 58' Dk grey sand + clayey sd. some clay
58 - 60.5'
60.5 - 62.5' - hit something tough at
62.25' no rock. wood? - sampler
pull - bounced - med, lt. gy clay +
clayey sand - dry
62.5 - 64.5' med gy sdy clay / clay sd
TD

- CALLED tom pratt re
his rec set well 19-30' -
he figures marginal - try another
site in cell

pull HSAs - pump 4.5 bags
quick grout 42-10' b/w
pump 2 bags portland cement - 3-10'
7-30-98 return to site
complete cleanup, then
to Site 2 - pump well - 1 hr
w/ whale sub. pump
~ 19pm

Where is
1" suction hose
(gun + slide)

inventory on rig

3.5 bags quick grout
2 bags bentonite chips
1 bag quick concrete mix
5 core box lids
5 core box btms
5 2"x10' cs9
1 2"x10' scw

split spoon tubing
paper towels
teflon tape
Electrical tape
~~liquinox sol~~
methanol
bolt cutters

98/99 STANDING PO'S

ENVA Mfg Co 53700 - 832024

Lowes (22) 820142 902054

Am Pump 820156

Mid America 820159 902073

Toney Del. 820160 902072

Atlantic Del 820167 902071

Holley 820326 902068

Tallahassee Wild 820448 902050

GORMAN 820377 902064

Christensen 820158 902070

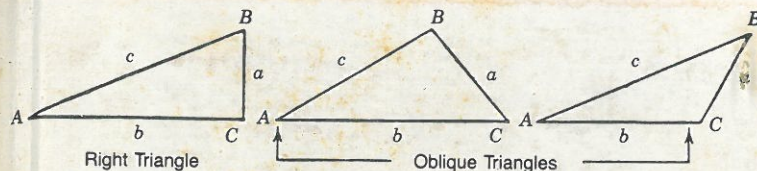
Cannis Liles Auto 820446 902051

L+C Machine 902069

~~Christensen Boyer~~ 902070

~~Mid America~~ 902073

TRIGONOMETRIC FORMULAE



Solution of Right Triangles

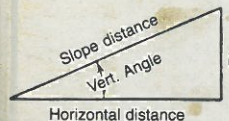
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\csc = \frac{c}{a}$

Given a, b	Required A, B, c	$\tan A = \frac{a}{b} = \cot B$, $c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B$, $b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A$, $b = a \cot A$, $c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A$, $a = b \tan A$, $c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A$, $a = c \sin A$, $b = c \cos A$

Solution of Oblique Triangles

Given A, B, a	Required b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180^\circ - C$, $\tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$, $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a + b + c}{2}$, $\sin \frac{1}{2} A = \sqrt{\frac{(s - b)(s - c)}{b c}}$, $\sin \frac{1}{2} B = \sqrt{\frac{(s - a)(s - c)}{a c}}$, $C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}$, $\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{b c \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = $5^\circ 10'$. From Table, Page IX, $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft.

Horizontal distance also = Slope distance minus slope distance times $(1 - \cos \text{ of vertical angle})$. With the same figures as in the preceding example, the following result is obtained. $\cos 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is approximately: - the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.

