

Mobile Drill

Log # 22

Forestry Suppliers, Inc.

1-800-647-5368

49354 Level Book

DAVE Dawitt SWFWMD
WK cell (352) 279-5119
(352) 796-7211
HOLIDAY INN EXP LELAND
352-341-3515

Colleen Warner (WF)
(352) 238-5764 cell
Microtel ITS/Hwy 50 (352) 796-9025

truck
roadside
assistance

< GCR FLEET SERVICE
877 GCR ROAD

Sonia Bean ~~WF~~ SWFWMD
well permitting
800 423-1476
x 4730

~~18447~~ →
~~18446~~ →

HOLIDAY INN EXP. Springhill
3528 Commercial way (Hwy 19)
(352) 683-5100

64507564

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3-28-11 to Potts P.

KL, E. Thuman

KL 8 AM start

600 pm end

Rig home ~~22912~~ 22912

Eric in @ 9:00

1/2 hr lunch

W # 19261

3-28-11

29

Potts Preserve Core

Citrus Co

Land owner SWFWMD

SEC 21 dd T 185 R 20E

LAT 28° 54' 16.7"

Lon 82° 18' 21.4"

Avg 300 readings ESTABL. 24' NAD83

Elev -90 from distrib wells on site

40+ < 50

3-29-11 STALL 8:15 AM

0-1.6' push SPL salt + pepper
sand w organics decreasing w
depth

1.6-4.1' sand or above to ~ 2'
thin y.l. or + br sd

4.1-6.6' br sd grad to v.l. y.l.
qty sd. - wet last ~ 2"

6.6-9.1' white qty sand some
organic mottling

SET ~~8.75~~ ~ 9.75' 4" CS9 (+ stickings)

SET 10' 9.3" CS9 inside or
placeholder

chg over to N 42 w ext. slur

lost
circulation

- 9.1-10.5' sand - v lth resistance
only ~ 6" recovery
10.5-13' lt gy clay sd
13-15.5' same
15.5-17' v lth resistance - no recovery
17'-20.5' no recovery while drilling
- no plugged when inner bbl. pulled
- bailed sample of gy + sl. gn
clay with inner bbl. - not in
strict stratigraphic order - may be
pulled from base of interval
20.5-25.5' - push in little rot or
sand resistance, v lth. water pump
no recovery - washed out
btm at 25.5'
25.5-30.5' - pushed up flow.
minimal rotation
no recovery - hole clean
bit blocked?
t.s. moving in - end day
rig hour 2978

fuel for 6017 thru to camp
end day 7:32 pm
1/2 hr lunch

check 3"
CSG inventory

TOP OCAAL

3-30-11 3

KC, ET. 8:30 START: 3" CSG 5' down
pull NQ - pull 3"
Run 3" CSG to ~29' (? 34' ?)
Run NQ back in
run tape btm of hole at 34'

30.5-34' NORM - either cavity
space or washed out setting
casing.

34-35.5' soft rubbly granular
fs. ls - harder last 6"

35.5-40.5' crm granular ls.
cross bedded - poor to med ind
softest at btm - some soft
~~probe test at top ~3.5' rec.~~

40.5-43' lt bn granular ls.
some lost at top, better indurated
fossil moldic ls at btm ~50%
recovery

43-45.5' gray, lt bn ls. VAR VEXL
x bedded, burrowed (?) fracture
surface (diag) w green clay

45.5-48' crm - lt bn granular x bdd
to burrowed ls., foss. var red

48-50.5' granular to fossil moldic
ls. crm - lt bn, poor to well ind
some fracture surfaces w gn-bn

clay coating

50.5 - 53' crm granular ls. ~ 1.75'

(recovered) - ~ 3" y.l. br stained - clay?

53 - 55.5' granular ls at top.

hard vert in middle w diagonal fracture - softer below w blue green clay - fossil moldic at base

55.5 - 58' crm lt br fossil moldic + granular ls. mod well ind.
~ 1.5' recovered

58 - 60.5' ls as above - old fracture w dk gn br coatings

60.5 - 63' - lt crm + y.l. br granular ls

thunder storms move in 3:30 pm - 5 pm

63 - 65.5' lt br + y.l. br ls - do/ds?

dk gy/blk clay layer @ 64' - 2' recovery

65.5 - 68' - hd br do/ds, first fossil moldic deposit? below only ~ 4" recovered

68 - 70.5' soft br clay/deposit at top.

weathered out. thin blk stained - br. do/ds. grad to bl gn. micro moldic do/ds w organic and cores on clay

End day 700 pm 1/2 hr lunch
RH. 2983

3-31-11 KC, ET Thunderstorm now
 in SAM - still not end at 930
 rebo TLT 7AM-2:30 PM - no lunch
 End day 2:30 pm

4-11-11 KC, ET

830 start KC, 9:15 start Eric
 load truck, KC finish of stuff, fuel
 truck + rig CANS to site
 load water, clean out mud pit, flush
 hook, mix mud

70.5-73' med/dk bn micro moldic.
 dolo top 8" - then muddy organic
 rich laminated zone ~ 1.5". then
 lt bn dolomite. 6" 4" d bn + gy
 dolomite -

73-75.5 dense gray + bn well ind
 dolo. soft zone in middle last.
 ~ 1.25' recovered

75.5-78' dk d. bn dolo over dolomite
 w org. then more hard dolo. - 6" 4"
 recovered in lt bn muddy poor-mud
 ind

6
78-80.5' lt bn dolomite + dolo
silt, well ind. - 6" bn
back to well ind bn + gy micro
moldic dolo
80.5- ~~82~~ 82' 2 rows, v hd dolo
w thin soft zone in middle

end coring for day
Rig hours 2987
End day 120 pm
1/2 hr lunch

4-12-11 KC, ET 8:30 start

~82-83 bn + gy micro moldic
dolomite - dk gy zone at very
top.

83-85.5' med bn dolomite, micro
moldic well ind, thin soft zone
@ ~83.5' lat.

85.5-88' bn micro moldic dolomite
top 5" - creamy lb. bn soft zone last
below thick grey + bn dolomite.

v thin lt bn + softer

88-89 hard bn micro moldic dolo
core jammed only 4" recovery

~89 90.5' hd bn + gy dolomite - micro
moldic, diagonal fracture

93.6' TD

Load list
sawhorse, pipe rack
Soda Ash

quik gel

quik grout

~~2" x 1 1/4" backing~~

(mud lite section corner)

1 1/4" QC cap

1 1/4" EL

or 4" PVC plug

90.5-93' 3 runs - core running / guiding ?
bnt + guy dble - soft stuff lost
93-~~93.6~~ 93.6' bnt bnt + guy mud
moldie dble on above

hole tightens up - jinn NQ
at 93.6' - pull NQ

run tape - hole plugged at
35' - run NQ back to
68' - hole clean to btm

Pump 5 1/2 bags quik grout
pulling NQ + 3" CS9 as
needed

bentonite grout at 13' bbs
lock up for day

Rig down 2995

End day 7:15 pm

1/2 hr lunch

4-13-11 8:15 start KC, ET

fd grout @ 7' bbs

pull 4" casing

top of hole w 3 1/2 bags hole plug
~~water~~ washed in
w ~ 20 gal water

8
load up cleanup site -
fuel rig + intl. then to
Two mile prairie

locate site on top of hill -
too soft cant get into it w
intl + trailer.
call christopher - 15 hr prep.
- cut downed log + move
from road. bc alt. site
went find tree around spot
for intl + trailer - get stuck
in process - finally get
turned around - back trailer
+ intl into spill site.
start setup

W[#] 19263 / 75.7' TD
Two mile prairie / Jordan. Sink
owner FL Div Forestry / SWEFMD
co citrus
LAT 28° 59' 47.3" ANA 17515ENDINGP
Lon 82° 23' 07.2" EST AC 14.8'
S 23 T1¹⁵ R 19E
Elev ~ 35 TOPO (28' Lidar)

Eric's hours

Friday	4	8-12
Mon	9.5	9:15A - 2:15 pm $\frac{1}{2}$ lunch
Tues	10.25	8:30 - 7:15 $\frac{1}{2}$ lunch
Wed	10.5	8:15 - 7:15 $\frac{1}{2}$ lunch
	<u>34.25</u>	

5.75 hr remaining

2 wheel dolly

100' + 2" sue hose/pur
hose

short sue hose

Check w INTEL re
brake controller for elec
brakes

push sampler
0-1.75' over chite/vlt gy gty sd
UNCON. leaf litter at top
1.75-4.25' same - grading to lt bn
at 6th
4.25-6.75' bn gty sd, UNCON
6.75-8' lt bn sd, UNCON, damp.
compacted

and coring for clay 6:15 pm

Righours 2998 miles 15666

End day 7:15 pm $\frac{1}{2}$ lunch

4-14-11 KC, ET 8:45 start -
to site, setup MBL DRL spl sys
issues with q diesel/gastat
+ hole pulge - also standing
vibr/mach wear - bring back
parts to try repairs. lock up
charging site RETN

leave site 12:45 pm

RETN to H 5:00 pm

end day (KC) 6:00 pm

Eric ~ 5:15 pm

0 - ~ 9.5 Fgr sd
 9.5 - 13.5 clay
 13.5 - 21.5
 21.5 - 24.25' sdy ch & sd
 24.25 - 30.2' clay
 + clay

4-26-11 KC, ET 10:45 leave for
 to 8:30 start back 9:00 AM
 fuel with. to site
 he did well point before leaving

two sampler sup.

8' hole - dry to botm.
 Decade bit plug extending into
 sampler space. gaskets do same
 may need to delete -

8-10.5' gray + q/bw sand, moist

10.5 - 13 gy bw sd graver to top.
 bw orange clayey sand.

13-15.5' top 6" sand on above
 then orange gray + even mottled
 clay

15.5 - 18' gray + orange clay, clay sd

18 - 20.5 - same but sandier

20.5 - 23 lt gy bw clay + clay sd.

End coring for day

Rig hours 3002

End day 700 pm

1/2 hr lunch

26.25'
1.26
24.5

4-27-11 KE, ET. 9AM start
after grocery run

HSA hole has deflected - pull
HSA's + set 4" casing
hole dry to 23'

drill/push 4" csg to ~24.5'
set 25' 3" casing on btm
run in nq

btm of hole @ 23.5'

23.5 - 24.25' tan, grey, or + br
clay (plus rest flakes from
casing) top of rock @ 24.25'

24.25 - 25.3' br + gg v hard RECL
ls iron staining on upper surface
some sulphide minerals (?)

btm 3-4" softer - possibly lost.
lost circulation @ ~25' (btm of
recovered sample)

25.3 - ~26.5' clay + ls rubble than
hard ls.

26.5 - ~27.3' bed RECL ls interbedded
clay

27.3 - 29.3' hard RECL ls v poor
recovering much evidence of
loose rock rolling - felt like

~ 30.2 - 30.3
micro conglomerate?

30.2 - 36.7 ls
36.7 - 39.8 zone
39.8 - mudst ls

clay over to
ser to 2
imprg
from TSD

unfavourably hard rock except at
btm.

29.3 - 30.3' ~ 2" ls rubble recovered -
pull NQ, adv 3" csq to ~ 30.3'
30.3 - 30.9' - very hard rock
ls, micro nodules at btm

30.9 - 32.3' hard bn dolomite
at top - thin soft zone (cavity?)
some core grinding loss then
lt bn + or bn softer ls, well
to mud ind. micro nodules in
btm 1/2 - some x bedding (?)

32.3 - 35.2' bn micro nodules ls/dolo
top soft grad to v. lt. bn more
more calcareous ls.

~ 4" clayey zone w some arg,
laminated
last foot lt gy bn macro nodules
ls/dolo.

End coring for day out of water
big hours 3009

End day 7:30 pm
1/2 hr lunch

4-28-11 KC, ET ^{8:30} ~~am~~ start

13

35.2 - 37.7' lt tan well ind fossil
moldic ls/dolo. then softer organic
rich laminated wackestone
- obvious R.R.

37.7 - 40.2' 3" as above thin
rip up deposit w dolo. clasts. followed
by bioturbated dolo.

40.2 - 42.7' bn dolo at top grad
to gray well indented ls/dolo.
bioturbated

42.7 - 45.2' ls/dolo as above top
0.2' then thin gray clay
on top of bn & gr dolo.

6" 1.25 - 1.5' coarser bn dolo.
moldic porosity - vuggy at base

45.2 - 47.7 cm/lt bn ls, some
near staining moldic & vuggy porosity

47.7 - 48.5' ls as above then hard
rxl, fractured ls/dolo. - sharp

contact w soft material underlying
~ 48.5 - 50.2' lt bn granular ls, mod
ind. some section lost at top of list.

50.2 - 52.7' lt y.l. bn moldic / micro
moldic ls/dolo minor organic

52.7 - ~ 54.8'

2" core blocks

med + Lg markers

NEED new Ø value
for diameter on mud log

WATER TANK dimensions
"inside"

depth ctr $\frac{1}{2}$ 15"

depth outer section 14 $\frac{1}{4}$ "

width 8' (- ex $\frac{5}{16}$ ")

length 12' - 1 $\frac{5}{8}$ " inset

$$8 \times 12 \times 1.25 = 120 \text{ ft}^3$$

$$= 897.6 \text{ GAL}$$

OD width $\times$ OD length $\times$ center tank
depth

$$\text{inside width} = 95.375" \quad 7.948'$$

$$\text{inside length} = 142.375 \quad 11.865'$$

$$\text{inside height} = 15" \quad 1.25'$$

same as above but w some party
zones in bot half. - ran drilled
to ~~55.2~~ some add core picked
up next run

54.8 - 57.7' - bot micro moldic
dolo (?) organic laminar. some
addl core picked up from prev. run

57.7 - 60.2' bot micro moldic dolo
60.2 - 62.7' bot micro moldic dolo,
mod ind

62.7 - 65.2' as above - bot 15"
coarser, more vuggy minor organics,
some fossil material still present
65.2 - 67.2' bot micro moldic dolo.
fossilif. some iron staining
(pyrite oxidizing?) - softer toward
bot - soft zone lost ~ 50%
recovery

second water run from sink
67.2 - 70.7' 1' bot ls/dolo granular
mod-poor ind - ~ 1.25' recovered

70.7 - 73.7' TD bot ls/dol as above -
mod ind some well ind. gradual
color change to greyish more mudlike

$$117.877 \text{ ft}^3 = 881.7 \text{ GAL max tank}$$

Capacity - does not take
curved bottom into acct.

Eric's hours

Fri	8
Mon	2
Tues	9.5
Wed	10
Thurs	

29.5

4" CSQ shoe = 5.5"
4" Humpin x hwt bot
sub = 7"

~~10.5~~
stand is CSQ depth no
4" CSQ shoe at
24.5' ±
3" C ~ 30.5'

bottom 6" mudline
75.7' TD

15

Rig hours 3014
End day 7:30 pm

4-29-11 KC, ET 9:30 start
call Dave Dewitt - verify well const. /
sampling plans for well
td ok w Dave 30' ± CSQ depth OK

pull NQ

Advance 4" casing - to 3" CSQ
- level - pull 3"

run 4" to ~ 34.5'

* obstruction at ~ 36-39'

will need to run NQ in to
clear hole + assist develop.

Rig hours 3014 miles 15666

RETN TH 5:30 pm
NO lunch

5-18-11 KC, JH

16

8AM start leave when 9:10 AM

SWL 21.5' b/s

hole still blocked below csg -
run NQ in, drill + slide rods
to btm - pushing blockage in
front of bit.

recover some chunks of dolomite
drilled by NQ + 4"

Dave Dewitt + Jerry Mallam
arrive w well const.
materials

set up airlift w NQ as
eductor

Airlift - pulling 10' NQ in
stages

rig house 3018

end day 6:30 PM 1/2 hr lunch

5-19-11 KC, JH 8AM start

pull NQ

only have 13' of previous
auger hole open - well need to
run 6 5/8 HSA's

RUN 6 5/8 hsa to top of rock
 ATTP push 5m pk thru 4" csq - join
 ~ 1' or btm - cant pull back -
 unscrew pvc - pull 4" csq -
 run well away in thru 6 5/8 hsa
 + open csq hole - rubble joins csq
 at 32' top 5m pk 1.5' above blency
 SET 38' ASSY - w 2 5m pkrs
 6' stickups
 wash in bentonite chips ~ 30.5-
 25' ±
 - bentonite bridges in HSAs,
 pull HSAs. - hole open to ~ 24'
 pump 1 bag quickgrout to 17.25'
 bLS
 2 hr wait for bentonite to hydr.
 pump 2 bags portland/
 5% bentonite
 Rig hour 3021
 End day 7:15 pm

5-20-11 KC, JH 8:30 start
 found grout @ 10.25' bLS
 have bridge in well @ 46'

pump 4 bags portland / 5%
 bentonite to within ~ 1.5' bLS

9416 bags

load list for next trip

- 2 gravel for well pad
- 15 Quik gel
- 1 ~~sand~~ soda ash
- 1 garden hose

mobile drill 3 1/4" hsa's
mbi drill drive head
latch coupling
cutter head

Chaps hit on AW rock

18
pump 1 addl. 44lb bag / 5% bent.
to surface

set protective casing 3' above
land surface, cut off well
casing at top of protective csg
set well cover/cap on prot.
casing 2040 key

ARR whse 6:20 pm

6-7-11

JESSE ARR BAM, KC 8:30
CANT leave - waiting on Intl.
to complete PM / brake controller
ARR back at whse 5:00 pm w
intl. - KC, DP, JH complete loading
KC, JH leave whse @ 6:30 pm
ARR motel in Jarrow @ 10:30
pm

1 hr lunch

JESSE 13.5 hr

Kenn 13 hr

Colleen Warner

352-238-5764 CL

352-754-6777 OFL

488-4274

Electronic completion report entered
+ submitted 6-14-11

19

6-8-11 KC, VA 7:30 AM start -
to Jordan Sink / 2 mile prairie site
no knock obstruction to near
blm of hole, airlift develop
until ~ 2:30 pm

set surface pad

casing strikeup 36" above ls
SWL 24.58' btoC

well depth 73.85' btoC
yield (airlift) < 159 pm

end day 7:00 pm - JESSE
KC end day 8:00 pm - water land

6-9-11 KC, VA 7:30 start
to citrus tract - loc site
ck in w Colleen Warner -
position rig - intl + trailer
get stuck - get rig stuck -
cant pull intl. unstick rig
Atpt unstick just intl. - no go
call Colleen - she arranges to
rent Forestry tractor
start rig setup

Citrus Co
LELAND
FL DOP owner

20

W # 19291

Citrus tract S of FR 14,

W of FR 11

SEC 9 T20S, R19E

lat 28° 46' 04.8

22° 24' 28.2

avg GPC reading EST Acc 17'

Elev. N 118' TPO

well located in NW corner of FWC
food plot S of FR 14, betw FRs 11+13

0-2.5' push spl lt gl. sand,
grayish bn on top, UNCON
2.5-5.0' SAME

5.0-5.75' SAME

set up MBL DRL spl sym

5.75-7.5' lt gl. bn gty sd, UNCON

7.5-7.8' SAME

7.8-10.3' lt gl. bn to lt gy bn gty sd
UNCON - organic at btm

10.3-12.8' sand or above

12.8-~~15.3~~ 15.3' sand or above to ~ 14'
then orange clayey sand

15.3-17.8' brk red, or + gy mottled
clayey sd

17.8-20.3' or clay sd

load for next trip

TRACTION MATS

AA Batteries - GPS

SUNSCREEN

hard hat shade

WATER + gatorade

STEP stool

2" NPT plug

RECOVERY WINCH

21

~~0-2.5' past - 1st run of 1st~~
~~SAND~~

~~2.5-5.0' SAME~~

~~5.0-5.75' SAME~~

20.3-22.3' or clay sd. - filled
2 1/2' bbl.

getting lots of auger shake-
poured 5 gal pentrol mixture
down hole to smooth

22.3-22.8' or clay sd

22.8-25.3' or clay sd

25.3-27.8' orange clay sd, color
lightening w depth to lt yl. or
not as clayey as prev. run

27.8-30.3' yl. or sl clay sd

30.3-32.8 vlt yl to or sl. clay sd

32.8-35.3' vlt yl. sl. mottled sd

end coming for day

Ris hours 3034 miles 15697

End day 6:36 pm

1/2 hr lunch

~~all
unconsolidated~~

6:10 KC, JH 7:30 start

Atop reach site fr SBI/^T16/^T14 -
NO go - FR 14 door NOT CROSS
old RR

Take T13 s to T14 E

ARR site 9:30 AM

CALL fr. Dave Dewitt (SWFWMD)

35.3 - 37.8' lt y. l. or - vlt or qtz sd
uncol

37.8 - 40.3' same, some minor orange
mottling in btm 6"

40.3 - 42.8' lt gn gy qtz sand w
thin orange stained bands

42.8 - 45.3' vlt or sand (dark particles
scattered on outside on scale from
Auger)

45.3 - 47.8' vlt or qtz sd some
dark organic(?) particles in
lowest part

47.8 - 50.3' vlt or qtz sd some orange
stained zones

50.3 - 52.8' same as above but w
grayer coat

52.8-55.3' v lke. or gty sd uncon ²³
55.3-~~57.8~~ 1+ gty yk. gty sd. uncon
~~57.8~~ 57.8-60.3 SAME

60.3-62.8 SAME-

62.8-65.3 SAME

65.3-67.8 SAME

67.8-70.3' SAME

End coring for day

Rig hours 3037

ARR WHE 7:45 pm

6-21-11 KC, JH to Pilot
midway - weigh 6017 then
to Citrus CO. Walmart
for water + gatorade
then to site - offload traction
mats - move mud spa trailer
pull trk bk to rd. jack up
rig place traction mats under
wheels + set rig back down.
retn to motel 5:45 pm

KC 8AM start 1/2 hr off-campis
weld 1/2 hr lunch
then load water
JESSE end day, 5:45 pm

5.5' 3 1/4" trilob w cutter head
0.5' latch Assy

6-22-11 KC, JH 7AM start ²⁴
pull died. 3 1/4 hrs, clean up
M6L DR HSA's - run 3 1/4 trilob
to 5th

70.3-71.9' lt y. tan gty sd,
UNCON, v sl. clay moist

END coring for day - spur in
in core bbl - ready to go
Rig hours 3041
END day 6:40 PM

6-23-11 KC, JH 7AM start

71.9-74.4 SAND or above then
clayey SAND (AST foot)

74.4-76.9 y. + lt gy gty sd
UNCON, sl. clay

76.9-79.4 SAME

79.4-81.7 3" sd or above then
y. or sd w thin cleaner beds

81.7-84.4 v lt y. gty sd, UNCON

84.4-86.9' ~ 9" SAND or above, then
y. or clay sd then 9" fr btm
gy + or mottled clay w rock frag
web

on top. - sticky, expanded
spec bbl

86.9-87.9' v sticky - rotation
stalling - filled 2 1/2' bbl trying
to clean up hole

run 5' HSA off. put in 3' run
bk to btm and give it a push
btm of HSA's @ ~ 88'
have ~ 1' sed inside HSA's

Set up recirculation system
chg over to NQ

87.9-88.5' - y.l. or stiff clayed - over
represented - some in / was pushed
up into HSA's

88.5-90.0' stiff mottled clay,
v lt gray w y.l. or, red + black mottle
90-92.5' mottled clay or above top 1/2
y.l. clay + gray remainder

92.5 - ~ 93.75' cored like stiff clay -
T.S. move in have to quit coring

core bbl + spec are in the pile
End day 5:50 pm

40' HWT CSG
 ✓ NWT 8 NQ sub
 ✓ overtop lifting clays
 quasi
 order bullseye

6-24-11 KC, JH 7am start

milk mud, pull 92.5-93.75' spz
 92.5-93.75 grey sdy clay, followed by
 or mottled clay - minor organics (?)
 93.75-95' or mottled clay - minor org?
 95-96' y.l. or mottled clay, w some
 hard zones, rexl ls at bot of
 run (last .1' ±)
 96-97 grey + y.l. clay w constant
 chunks
 97-98 clay + rubble ls - plugged off
 98-~99 1/4 hard rexl ls w clay
 moldic porosity
 99.25-100' grey moldic ls. rexl. w
 orange clay capping burrows etc
 100-102.5' rubblely grey ls w abcd clay
 ls poor to well ind.
 102.5-105 grey + br hd rexl ls w
 clay blocks indellig - orange clay
 zone in well.
 105-107.5' hard grey ls mixed w
 y.l. or clay

Encl coming for clay RH 3051
 pack up / hook up ahead of T.S.
 RETN WHE 6:20pm

HOLIDAY INN EXPV
LELANDO

7-12-13

CONF #5

67016169

67016616

R.H.
3055

* H₂O lamp on control panel

27

7-12-11 ~~DP~~ DP, KC, 8:45 leave
Shel - to Citrus tract.

107.5-110.0' wht + br mt. ls w
or clay

Pull HSA's

run in 95' ^{NW} casing w ~ 3' stickup

Rig hours 3055

End day 700 pm

7-13-11 DP, KC 7:45 start

run in HWT 46' in 10s w/ lead 6' HWT

→ 5' sticks HWT to 94' BLS w/ 3' stick @
top.

Advance NW casing to ~ 97 BLS 3' stickup
build recirc system on top of HWT
w/ added 2' stick HWT

110.0' - 112.7' hard xrd LS, clay clay moldic fill
rubbly; very slow drilling.

112.7' - 115' As above; friable zones on wall.

Lead trays rig hrs 3059

end day @ 6:37 pm

7-14-11 K&DP 7:15 start

115 - 117.5' hard red LS w/ clay fill

117.5 - 120' AS ABOVE

120 - 122' AS ABOVE

122 - 124' AS ABOVE into very rubbly LS w/
orange clay.

→ out of water, secure site; load remaining
tribe augers onto Mobile rig, last 2
deitrich hsa onto water truck.

depart site @ 1pm

Arr. house 5:45pm

rights 3061

7/19/2011 DTP & Kevin Burdette

9:15am start

Arr. site 12:00pm

SWL 101.7'

124 - 125' hard red fossil moldic LS

125 - 126.5' AS ABOVE

out of water @ 3:30pm, go to WSF#2

126.5' - 130' AS ABOVE into packstone w/ orange clay
vug/cavity fill. drilled much smoother
than last ~8" hard red.

130 - 135' orange soft wackestone to cream red LS

rights 3064

end day @ 7:30pm

* rebuild 2nd inner bbl assy.
needs new spear & spring.

7/20/11 DP & KB

29

7:26am start

SWL 110' BLS

135-140' poor recovery; plugged shoe may have washed sample. rxd LS on unconsolidated wackestone.

140'-142.5' fossil nodic cream LS, orange clay fill

142.5'-145' AS ABOVE

145-147.5' AS ABOVE

147.5'-150' cream rxd LS

150-152.5' poor recovery, rubble LS w/ orange clay. probably plugged shoe & washed remainder of run.

broke spear on inner bbl assy. pirate off backup (adj. unit very stiff, needs antisize).

152.5'-155' poor recovery. orange stained rxd LS rubble.

155-157.5' cream rxd LS w/ orange clay cavity fill.

157.5'-160' orange clay cavity fill, 1 chunk LS plugged shoe.

160-162.5' orange clay & cream LS

162.5'-165' No Recovery. drilled FAST with water pressure showing on gauge

165-170' poorly indurated LS with orange clay

170-172.5' No Recovery.

172.5-175' hard rubbly LS; pebbles
 175-178' hard rubbly LS into unconsolidated orange
 wackestone / packstone.

rig hrs 3070
 end day 6:12 pm

7/21 DP/KB start 7:15 am

178'-180' cream unconsol. LS

180'-185' poor recovery; iron cemented zones
 within cream LS; indurated LS @ bottom
 probably plugged shoe + washed bottom of
 run.

185'-190' 1 LS pebble @ beginning of run; orange
 clay @ beginning, high hydro pressure, then
 head fell freely until last ~ 8" or so;
 white to gray clayey sand @ end of run.

190-195' gray to orange clayey sand.

195-198.25' orange + gray clayey sand into calcareous;
 iron cemented sandstone

198.25'-200' iron cemented ss into red LS

* Run from 195' to 200' has nearly 6' of sample.

I suspect that the first sample core from
 195'-196' belongs in the bottom of run
 190'-195'

200' - 202.25' Cream LS breccia w/ dendritic
iron or sulfides. ran out of water on
this run, so pack up site to fetch
H₂O.

thundershow during H₂O run.

12 - 245pm

202.25 - 204.25' hard red LS, rubble, & orange clay
cavity fill. stopped short of full run refusal

204.25' - 205' hard red pinkish orange LS

205 - 207.5' hard red LS fragments in orange clay
matrix. pinkish orange LS.

207.5' - 210' red LS w/ orange clayey fill

210 - 212.5' orange clay + clayey sand, pink mottling.

rights 3074

end day 6:23pm

7/22 DP/KB 7am start

* Holiday Inn shut off water @ night; requested we
do not fill tank anymore.

∴ ran to WSF H₂O to fill up; really cut into morning.

arr. site 8:40am

pump on mud line loses prime - realized housing
is draining fluid out of plastic T-fitting - dismantled
fittings to tighten T fitting 360°.

USED 15 BAGS QUICKGEL

NEED

SODA ASH

inner bbl spear, spring & roll pin
teflon tape (for NQ/NWT sub)

Inventory

drill rod on Mobile: 1 x 5' NQ

Quick Gel

5 on rig, in box on bp

Quick Grant

1.5 in rig box

Hole Plug

1 on left rig tires

NW

2 in box

NWT

1 in box

32

212.5' - 215' orange to gray clayey sand

215 - 218' AS ABOVE with possible grass fossil
@ ~17.25' in clay above LS, end of
run in cream-pink LS, Hard & red.

218' - ~~218.75~~ - 220' red pinkish LS w/ slickenlines
on fracture surfaces

220 - 225' pinkish orange packstone mod. indurated

225 - 228.75' - cream indurated / fractured LS
ran out of H₂O so terminated caving
for the day.

* 218 - 228.75 interval contains abundant
millidids.

Secure site, offload QuickGel next to NW site.
depart site ~ 1:20pm

RVA HRS 3076

END DAY 5:45pm

7-25-11 6012 to NEECEHIA -

alignments + repl. RF line, then to
Citrus Co

8AM - 6:15pm

7-26-11 KE, JH. 7:15 start

228.75 - 230 hard orange + red
stained ls, diag fractures
softer at btm

230 - 232.5 lt bn + or ls/dol. var
moldic + rexl. iron stained

232.5 - 235' same

235 - 237.5' lt to med bn + or highly
rexl ls, iron stained, one laminated
clast w orange clay? (ams)

water run to WSE HQ, fuel
for intl. + reg.,

237.5 - 240' orangeish bn var rexl.
var moldic ls. btm 6" has grey
mottling - fine sulphur? org?
240 - 245' by gy bn + or ls first 8"
thm. softer. Finer lt gy bn ls w
lensigary banding - grad to lt bn +
gy bn f. gr dol. (?) - characteristic
A.P. litho

245 - 250 AS above

250 - 254.25' TD crn to med bn dol
w minor fossil laminae + lensigary
banding - softer - at btm

4" pvc slip cap
600psi wp gage
quik gel
soda ash

Citrus tract
92' HWY CASING
103' NW CASING

34

rig hours 3081

END day 6:45 pm no lunch

7-27-11 KE, JH 130 start

load some water @ hidden mine
then to site

CALL to DAVE - ck in. - CALL bob C
per dave req. - disc browned hole
casing etc

pull NQ, take off 4" + 3"
2 footers - cap 3" w blind
plug. cap 4" w gate valve btl. -
pack down plug in annulus
outside 4" csg - fill to top w
bentonite chips - overlay w
plywood + cover w dirt

start load out / lean down process
get rig, wt + tr out of the
hole - load traction mats
etc + strap down in RAIN
- return to hotel - ENTIRE area
soaked in 1500 traffic
per repl tail like for rig + trailer
END day 5:45 pm

Nearby Clay Sink

elev 90' MSL

Tap 160' BLS
-70' MSL

∴ Richloom Tap is 158' BLS

35

7-28-11 KC, JH 7:15 start
repl tailbitter - drive to Richloom
locate + set up on site

W# 19292

Richloom Core

Country SWMTER

Elev 88.3' LIDAR

loc S 06 BAAB T 23S R 23E

LAT 28°31.315' (18.9")

CON 82°02.676' (40.56")

owner: Wicahitowichee state forest

0-1.75' push spl org rich sd → lt bn sd

1.75-4.25' push spl - lt bn to black
org rich gty sd.

4.25-6.75' push spl - org rich sd/muck
at top then bn clay sd w root
chg over to mbl DRL spl spz

run in lead flute add patching
+ 3'

NOTES: ① Safety pin in RH auger
rack is "locked in place" CANT get
that rack open ^{inside from upright}
② broke another mbl DRL auger

bring long thin punch
or 12x drill tool
to cut off safety pin

batteries AA/AAA
socket set

24" pipe wrench
small generator
angle grinder w
cut off blade

36
bolt w nut & washer only
have 2 releasable bolts

Rig miles 15782 hours 3090

* site is 0.8 mi E of 471
turn in 2.2 m S of 50

6/2/2011 DTP & GE depart TX @ 10:10am
to Richland hatchery to fill up H₂O
then on to drill site.

- 6.75-7.4' brown clayey sand (using middle adj. hole
on her shaft)
7.4-9.9' as above, poor recovery, lengthen her adj.
by 1 hole.
9.9-12.4' light brown clayey sand into light blue-green
banded clay.
12.4-14.9' blue-green banded clay
14.9-17.4' blue-green clay back into gray sand
17.4-19.9' orange + bluegreen clay.
19.9-22.4' gray sand and blue green clay into
white micrite @ ~ 21.5'

end coring for day; secure site
rig hrs 3092
end day 6:15pm

BRING FOR NEXT TRIP

• SODAASH

• BOX MATERIAL, esp. trays!

8/3/2011 DTP:GR 7:03AM

RAISED RIG IN ORDER TO SETUP RECIRC
SYSTEM; ANGLE TOO LOW SO ANGLED 1 MORE

22.4-26' white. cream micrite/unconsol. LS.

26-27.9' AS ABOVE (22" run to get angers @
correct height; measured depth)

→ convert to WLNQ2

27.9-30' unconsol. cream-LS, poorly ind. @ end
of run. NO CIRCULATION

30-35' ~50% rec, poorly consolidated LS

35-40' ~60% rec, AS ABOVE

40-45' poor rec, AS ABOVE, fossilifers; shorter runs

45-47.5' improved rec. AS ABOVE abundant forams

47.5-50' cream/white wackestone/packstone

50'-52.5' AS ABOVE

52.5-55' AS ABOVE

55-60' ~100% rec. AS ABOVE, drilled firmer

60-65' AS ABOVE

65-70' AS ABOVE

70-75' cream into gray wackestone/packstone

75-80' gray packstone

80-85' AS ABOVE

85-90' AS ABOVE

- 90-95' ~50% rec., washed soft zone
gray LS
- 95-100' excellent rec., gray fossil moldic LS with
echinoids & forams.
- 100-105' AS ABOVE
- 105-110' AS ABOVE
- 110-115' AS ABOVE
- 115-120' AS ABOVE
- 120-125' AS ABOVE
- 125-130' AS ABOVE

out of core trays; 1 liner will make
2 trays. With hot day & excellent product-
ivity, we elect to top off H₂O truck and
make boxes @ hotel. secure & depart
site @ 4:30pm

rig hrs 3097
and dem 5pm, + ~1/2hr to make boxes.

8/4/2011 DTP & GR start 7:20am

- 130-135' core is more indurated in places; gray LS
- 135-140' gray LS; harder, slower drilling gas trapped fossil-
moldic.

140 - 145' AS ABOVE with last few inches muddier & cream colored.

145 - 150' more massive gray LS

150 - 152.5' refusal @ 152.5' b/c plugged shoe. poorly consol. gray LS

152.5 - 155' AS ABOVE, smooth drilling.

155 - 160' cream to gray LS

160 - 165' AS ABOVE

165 - 170' AS ABOVE

170 - 175' AS ABOVE

175 - 180' ~ 50% recovery, AS ABOVE

180 - 182.25' plugged off; had to pull 16' w/c & clean hole. installed inner bbl and drilled back down. decided to do 1/2 run to avoid packing inner bbl, but reached refusal at 182.25' any way.

→ gray rubble & moldic LS. abundant broken fossils.

182.25 - 185' drilled like very hard rubble rock, then had fell quickly with higher mud pressure on gauge. believe I washed cavity fill as a small amount of clay was left as LS in rock shoe.

185 - 190' only recovered ~ 2.5'; head fell very fast and acted like cavity fill. brown wackestone with organic lenses/laminae.

* FWC hatchery gate opens @ 8am
can press call button to get in.

- 190-195' poor recovery. gray-brown workstone.
195-200' brown to gray to cream workstone
200-205' cream workstone to red dolomitic? LS
w/ midic fossils.

out of water; end coring for today.
secure site & depart @ 3:50pm

rights 3102
endday 4:20pm

6/5/2011 STP & GR checkout 7:18am

fill up H₂O tank
SWL 6.95' BLS

- 205-210' brown LS into cream-brown massive LS
210-215' head fell freely ~1'. br-cream LS
215-220' 4' cavity followed by lt. brown packstone/
grainstone.
220-225' cavity @ start of run. gray-brown LS
225-230' brown LS
230-235' cavity or soft material loss @ beginning.
lt. brown LS
235-240' cavity @ end of run. lt. br. LS.

rope
gravel

camp

240-245' ~3' cavity @ beginning of mn. 14. br LS
245-247.5' NO RECOVERY - cavity.
247.5-250' cavity w/ dark gray rubble LS into 14.
br. rockstone.

250' TD

pull NA, secure site, depart site 2pm
rig hrs 3105
ARR WISE 7:01 pm

B-B-11 KC, VH load out
depart WISE 11:30 AM for
Richmond core site
core # 18420
18421

ARR drill site ~ 4:45 pm
Repl. pullcard on grout
fire up rig. T.S. move in
move trailers in betw. TS -
to I75/50 ck in motel
end day 700 pm

42

8-9-11 KL, JH 7:15 start in the
rain. TS move in inward - water run
to Richman. Run tremmie - 3"AL
pipe. Pump 3 bags quick growth -
no building - pull tremmie -
to Brooksville for gravel, tanks
(quick growth bags soaked) +
rope.

back to site - tape would go to
224' - poured gravel ~ 5 bags
to get to ~ 216' - further 10 addl
bags apparently filling cavity
(215-219) but not building
vertically - top of gravel @ 216

Rig hours 3109

End day 7:45 - 1/2 hr lunch

8-10-11 KL, JH 7:15 start - ck out
to Lower Bkole - pu pvc etc to
make plugging stem then to site
arr site 10:05 AM

build 10' plugging stem - 2"
x 10' pvc w point - bentonite +
pearl gravel inside for weight/seal
longer span on top.

lowered to 816 $\pm$ on wireline,
smoothly -

on reaming overcut - became
stuck @ $\sim 183'$ - can only
feel cable stretch

cavity at that depth -
prob fill collapsed over hole
locking it.

will stop pull w big winch

cut wireline - make cable clamp
loop - pull w 50 PLS -

pulled free - attach snatch
block + hard pull cable +
overshoot out of hole

recovered overshoot, spearpoint
only but not locking slave
tape measure went past 180'
pour 3 bags pea gravel - bridge top
to 159'

wash in 2 bags bentonite chips to
132.5' PLS

Pump 6 bags quick gravel 132.5 -
3' bTq auger

pull 10' of TSA - gravel drops
to $\sim 16'\pm$

Citrus Tract well installation

44

Rig hours 3112

end day 7:30 pm 1/2 hr lunch

8-11-11 KC, JH same start 7:30
KC start 800

found top of gravel @ 17.5' b/s
pull remaining auger - pump 1.5
bags quick gravel to surface
bail down 2' after settling
pour 1 bag hole plug - top off
hole w crushed rock

cleanup load up drop rig
& trailer @ WSE HQ

ARR whse 7:48 pm 1 hr lunch

8/22 DTP & KC depart whse 2:30 pm

ARR HIE LELANTO 6:15 pm

end day 6:15 pm

1/2 hr lunch 9:35 hrs

8-23-11 KC, DP 7:15 start -

Fuel stop then to WSE HQ
water filling pu rig & trailer
fuel rig - to drill site
setup rig, pos. mud sys

ADVANCE NW CSA to 126'

Thunderstorm rolls in as we run out of water,
so make water run to WSF HQ.

Upon return, run NW CSA to then sit
in truck during bad lightning storm.

lighten up site & depart @ 6:16pm

rig hrs. 3118

end day 7pm 11.75 hrs

8/24 DTP & KMC 7:30am start

make water run to WSF HQ

→ Pull 3' stick of MWT off top of string,
hang 10' and advance: ~~40' to 105~~ 35'
to 126' BLS. + 2' for 128'

ADVANCE NW to 128' BLS.

Cleanup site & depart 6:15pm

rig hrs 3122

end day 6:45pm 11.25 hrs

8/25 DTP, KMC

46

check out of hotel, start day 7:30am
water run to WSF#2

run in 183' NA as airlift eductor
run in air line ($\frac{3}{8}$ " x $\frac{1}{4}$ " NPT) to 175'
→ airlift successful, lift sand, cuttings &
drilling mud out of bore hole. Load
water truck while airlift runs. coil
hose, leave in rig. secure site &
depart 3:45pm

rig hrs 3126

$\frac{1}{2}$ hr lunch

Arr TCH 7:55pm

12hrs

9-6-11 DP, KC, dept. WASE 11:15A

NA stacked, clear plug & hang/wrench
it down to ~215 BLS.

rig hrs ~~3126~~ 3127

11 hrs

end day 7:00pm

$\frac{1}{2}$ hr lunch

9/7 KL: DTP

7:17am

To WSFHA for H₂O run.

wash hole, confirm open past bit.

run 220' tremmie, pump 1 bag grout. pulled
NAB
~ 144' BLSwash in gravel as measuring surface,
~ 3/4 bag. brought hole up to 170'wash in 1/4 bag & hole plug (aqua block)
brought hole to 166' BLSwash in remainder of aquablock hole plug.
brought hole to 156' BLSclean 13 sticks 2" PVC casing. 3 sticks
2" screen.hang well to 155' BLS, wash in ~ 1/2
bag sand filter pack. well is anchored, pull
3" casing. continue washing in sand
filter pack.As sand approaches 130/131', we pulled ~~5'~~
~~stick~~ + 4' stick up. HW = 125'

2 bags sand = 130.3'	BLS
+ 3 bags sand = 119.4'	↓
+ 1 bag holeplug = 111.3'	

Washed sand in to 126', pull HWTag up to
~120' secure site, depart to hotel

rig hrs 3131

and day 7:50pm - after dinner
run to walmart for fluids +
fuel / Int'l + rig (cans) 12.5 hrs

1/2 hr lunch +
walmart etc.

9-8-11 DP, KC, 7:20 start

by top of sand @ 125.3'

wash in more sand to 121.5' (4th bag)

wash in 1/2 bag sand, brings up to 118'

clean & run in 3/8" airline to bottom of well
attempt airlift to develop well; settle filter pack

filter pack settled to 121.1' BLS

wash in remainder of 5th bag 119.9'

pulled 10' HWTag, now @ ~~110' BLS~~ 107' BLS

confirm top of filter pack @ 118.1'

- washed in one bag Envirofling Mat. bent. chips.
filled annulus to 111.3' BLS

3/3

+6/9

+6/15

49

Mix: Pump 3 bags portland cement, pull 30'
HWT. ^{7.5' BLS} GO FETTER WATER 1:30pm

Lunch upon return, check grant elev. @ 3:30pm
88.8' BLS

mix: Pump 6 bags Portland cement, pull tremmie,
pull 20' HWT
grant up to 74' BLS

mix & pump 6 bags Portland, using 70' tremmie
3 joints tremmie had cement @ female end.
Pull 15' HWT, WASH casing w/ clean H₂O &
observe WL - dropping - top of grant @
51.4' BLS (3' weight on tape around in cement)

Pull HWT 10' up and leave hanging for
night. secure site.

RK HRS 3136

END DAY 8:05pm

12.5 hrs
1/2 hr lunch

9/9/2011

KC & DTP

7:30 start

top of grant 42.3' BLS

WL in well 112.17' TOL

108.2' BLS

run in $3/8"$ airline & airlift well.
load casing on support track while airlifting.

mix 6 bags Portland + pump Tag top of
grout @ 24' BLS Pull remaining HWT.
confirm grout @ ~23', hang 15 HWT w/
~4' stickup. secure site & depart for TLH

rig hrs 3139

end day 6:07pm

10.5 hrs
1/2 hr lunch

TO DATE : well construction

~ 155' 4" well assembly
30' .015 slot screen
- 4" well point

conc hole grouted back to 166'
- 1 bag Quick Grout,
1 bucket aquablok hole plug

filter pack 156 - 118.1' bLS
1 bag hole plug 118.1 - 111.3'

21

+3/24

126.1
well TD 156.47' BLS
2.43' above
LS

51

mix and pump 21 941b bags
portland w 5% bentonite

9/14/2011 DTP: KMC depart whse 11:30am

measure to bp of grout $\Rightarrow$ 14.4' BLS
mix + pump 5 bags portland/5%
bentonite to surface + into pad
form mix in sand, set
protective casing (3 bags sand)

end day 8:07pm
rig hrs 3139

12 hrs
1/2 hr lunch

9/15/2011 DTP: KMC 7:50am

bottom well 158.6' Below TOC
TOC (protective) 2' 4" above cement pad
TOC (well) 2.5" Below bp of prot. csg.
SWL 110.5' Below Top of well csg.

end day 6:39pm

11 hrs
1/2 hr lunch

Completion report submitted electronically
9-16-11

STATEMAP 2011/2012

HOL INN EXP - Spriskill
1-17/1-20 trip

Edie Sm. room 66497980 cont
KE NON 66498293

KE. 8am start

✓ SEAL for Robin pump

CHASSAHOWITZKA WMA

W# 19312

COUNTY HERNANDO

SEC 36 T 21S R 17E

LAT 28° 36.975' N (58.5")

Lon 82° 33.953' W (57.2")

Elev ~12' Topo

28° 36' 58.5" 82° 33' 57.2"

AVG LOS READING

1-17-12 KC, ET depart where

10:45 AM. Fuel intl + rig.

meet WMA personell at site get
instructions on pump operation
Setup rig + mudlitz - pump water
fill intl. then to hotel

End day 6:30 pm

1-18-12 KC, ET 7:30 start

fill mudlitz - robin pump seal
leaks, - no repl. seal fd. -

chg out pump
mix mud

0-1.5' push spl 0-0.25' - 1s/dil
4-1.5' - dk bn sd thin prog lighter
pts sd

1.5-4.0' push spc 1 lb to vlt bn qtz
sand.

4.0-6.5' push spc 1 lb qtz qtz sd

6.5-8.0' push spc - w/c @ ~ 6'

refused @ ~ 8' sd w/ls drg

change over to set 4" surface csq
run csq to 9.75'

lunch - wait out thunderstorms

pour most of 1 bag cement to
seal outside of 4" csq

set 10' of 3" csq inside 4"
as placeholder

8-9.75' NDSM - lost sty csq

9.75-12.5' poor recovery - silt + clay
need to run ext. sluc

12.5-15' gray + or mottled clay / clay sd

15-17.5' same

17.5-20' gray, or + blk red clay sd

20-22.5' gray + or clay sd - poor recovery
(6") lost circulation, soft penetr.

22.5-25.0' or, gray bn clay sd -
weather to gray ls (?)

end coring for day

end day 6:00 pm

3" CS₉ to ~ 31'

54
1-19-12 KC, ET, 7:30 Start
mix mud
top of 3" CS₉ ~ 3.5' b TOC

25-26.5' ext. shoe - sub, v lb
gy ls. pow ind.

E 26.5-27.5' - rock shoe - sub, lb
gy pasty ls. pow ind

E 27.5-30' - crin pasty to granular ls
mod ind.

30-~31.5' - ^{~1'} ~~recovery~~ recovery - ran out
of mud. pull NQ, adv. 3" CS₉
3" CS₉ to ~ 31' - top flush
w top of 4" CS₉

run NQ back into hole

~ 31.5-35' felt soft - only ~ 6"
recovered - mostly sand, ls, + clay
(caving to casing adv?) ~ 1" gran
ls recovered - (cavity?) did NOT
pick up circulation with CS₉.

35-37.5' soft w some hard gray
carbonate sand + ls. - plugged
ext. shoe

- 37.5-38.75 grey sand (qty) - last⁵⁵
3" party ls.
E 38.75-40' sand + coarse forams, open
ls btm 3" ~ 8" downward, party
E 40-41.75' quartz sd + coarse forams, open
E party ls.
E 41.75-45' fossilif. ls, med ind. - open
openers + leps
E 45-50' cream granular to party ls,
poor to med ind, foss.
E 50-55' crm granular ls, med ind
E 55-60 crm granular ls, med ind,
foss. - red algae (?), iron staining
along fracture last 6"
E 60-65' crm - lt bn + reddish
granular foss ls. minor iron
stain @ top. diagonal fracture
@ ~ 63.5 w reddish med filling
grayish + iron stained at base
E 65-70 crm + pinkish bn granular
foss ls. poor to med ind
E 70-75' crm ls, med ind, foss.
granular
E 75-80 crm + iron stained granular
ls med ind, foss. fracture approx
1' fr btm - lots of iron staining

? finer screen for
shaker?

70' add 1 3" csg

70' add 1 NQ

stand alone derander
blocks

seal dr robin pump
sand ramp dr shaker
derander

38" wide x
~ 40 x 18"

labels for rig
controls

slide

brist

jacks

brist selectn

E 80-85 csm, granular ls. foss,
mod ind

E 85-90' same w tan clayey zone
near base

E 90-95 csm granular, foss, ls, mod
ind.

E 95-100' csm granular ls, foss,
mod ind.

END CORING for day
rig runs 16262 / hours 3167

INTL "beeping" suspect need
chg fuel filter - drain some
fuel - nasty - seeing beep stops

END day 6:30 pm

1-20-12 7:30 start
SWL 11.5' bLS

E ADVANCE 3" CASING (top in 9"
below top of 4" csg.) 45' csg in
hole - 1 ft. stop up i.
csg at 44' bLS

E 100-105' fine granular ls. fossil,
some moldic porosity moldling

E 105-110 SAME

E 110-115 same w add'l iron staining
incr moldic porosity

E 115-120 SAME

E 120-125 SAME

E 125-~126 - core bbl plugged
off - inner bbl sandbed in -

pull NQ end coring for
day, loadup / lockup etc

Rig hours 3172

RETN full arr whse 6:10 pm
End day 6:15 pm

1-30-12 KC, ET - depart whse

~ 9:15 AM - ARR site

~ 2:00 pm - load water, mix mud,
setup desander

static water level 7.8' bbs

sediment in hole bbl to 117.2'
bbs

SEE Log list prev. pg.

HOLIDAY INN EXPRESS

1-30 / 2-3

2 NON smk rooms

CONF# 64384855

58

Ran NQ in - Attp wash back to
bbl - keep plugging off/sanding in
inner bbl - pull inner bbl
- wash to 125 w good mud -
End of day

Rig hour 3175

End day 6:30 pm

1-31-12 KC, ET 7:30 Start

MEET Andy Smith at the gate
for geophysical logging
condition holes pull NQ

tape goes to 125 bbl

Andy runs SP, SPR, gamma, caliper
~~logs~~ to 115'

OBI run to ~102' after

flushing hole w clear water

Andy finishes up ~ 2:30 pm

KC 1/2 hr lunch - andy leaves ~

2:45 for tally

run 3" GSG to ~ 97.5'

Rig hour 3177

KC 1/2 hr lunch

ET 1.25 hr lunch

End day 6:30 pm

2-1-12 KC, ET 7:30 Start.
ADV CASING (3") to ~131'

bob arrives w growler & Brown
Co sampler - offload growler,
load spec in WTL

run NQ back in

~125-130' SAND, cavity fill - mostly
lost setting casing.

130-^{132.5}~~132.5~~ soft granular ls, crm,
some iron staining.

132.5-135' crm porous granular ls.
poor to mod ind - some iron staining

135-137.5' crm + iron stained poor to
mod ind ls, granular mold in

137.5-~138.4' hard rubbley ls, shaggy
spf. ~ 8" qty sd recovered on top
prob cavity

~138.4-140' hard granular, fossil
mold in ls.

140-142.5' - same for top 1.5' then
back to softer crumbly granular ls.
END CORIS for day

Rig hour 3183

END day 6:15 pm

1 hr
mud

FUEL filter funnel

60

2-2-12 KC, ET 7:30 start
fuel rig

- E 142.5-145' crm granular, foss. ls.
poor to mod ind, moldic, vsl. iron
staining
- E 145-150 soft crumbly granular ls, crm
minor iron staining, var moldic
~ 50% recovery
- E 150-155' crm-lt tan gran. foss ls.
~ 3' recovery. crumbly, poor to mod
ind.
- E 155-157.5' lt br, pinkish br soft
crumbly granular foss. ls. iron
stained
- E 157.5-160 pinkish br gran, foss.
ls. some greenish br staining on
fracture surfaces, poor to mod
ind.
- E 160-165' top 6" or above thin crm
lt br mod-well ind, moldic.
6br ~ 2' softer. mostly lost -
partly br partly ind ls (clay?)
- E 165 ~ 166.25' partly, sticky calcichite
~ plugged off
- E 166.25-170 ls, crm-lt br alb.
hard + softer gran. - harder

Zones SL molder

repl. packing in swivel

repl. pull cord on submers pump (Mud life)

E 170 - 172.5' lt bn ls, med ind.
well ind. granular molder porosity,
fracture porosity, iron staining in
fractures

E 172.5 - 175 SAME

E 175 - 177.5' lt bn ls, poor to well ind.
moldie, staining on fracture
surfaces

177.5 - 180 crm + lt bn green ls,
turns grey ~ 179 - organics

180 - 182.5' grey, dk bn (aminite), bioturb
organic rich foll. ls/dkls.

182.5 - 185 SAME - get green fossils

185 - 190' SAME

End coring for day

Rig down 3:40

End day 6:30 pm

2-3-12 KC, ET 8 AM start
load grout, strap down
deck load

Shelb. Litter Lumber
quick grant
service grant
service small prop.

10' 5" hole
121' 4" hole
81' 3" hole

H2L INN EXPR
Sprishill

352 683-5100

2-13/2-16

63255532 KC
6100 ET

190-195 grey + bn ls/dolo, moldic
poor to well ind, org rich
195-200 lt to med bn dolo (?)
VAR ind, var moldic, less,
muddy. last ~1.5' soft -
lost

200-201 med bn dolo, hard top +
6ft - soft lost in mdl.

201-202 hard med. grey + bn dolo
some moldic porosity organic at
6ft.

- drilling w lots of chatter -
+ slow penetration

End caving for day
Rig home 3193

ARR where 5 pm

2-13-12 KC, ET, 9:30 dep't where
ARR site, mix mud, low water

202-202.75 hard bn dolo - v
slow drilling - lots of chatter
Appears TSD bit is worn out
or at hardness limit
pull NQ. go back w impreg

NEED
Soda ash
Raggs
WATER

63
202.75 - 205' hd bn dolo grading to
softer crumbly lt bn dolo.

End coring in day
pig house 3196
End day 700 pm

2-14-12 KL, ET BAM START
- Publix - water, gateade, bug spray
- load water

205-207.5 soft pasty dolomite at top
then harder tan dolo w organic - grad to
moldic dolomite. blue 3" fine grained
laminated, burrow porous dolo
E 207.5 - 210' lt bn dolo, var ind,
minor organics, var moldic
E 210 - 212.25 hard grey dense dolo,
followed by softer grey/bn dolo -
V. fracture at btm - jammed
E ~ 212.25 - 215 - lost spec for minor bbl -
ran inner bbl back in several times
+ recovered ~ 1.5' spec
bn grey speckled dolo minor moldic
porosity - well ind. - vertical fracture
thru entire length
E 215 - 216.5' - picked up 1 add. chunk
prev. coring rock - bn moldic

E dolomite mod ind

~ 216.5 - 220 ft bn dolo as above
finer protuberant dolo w rip up
clasts, mod-well ind. var
moldic

E 220 - 225' med bn dolo var
moldic some organic mudcracks 1/3
down, fractured mod-well ind
w some softening

225 - 230' lt. gray + lt bn dolomite
w burrows & poss 1000 ft tracer
230' TD

Pull 30' NQ	- run	Airlift	200'
pull 25' NQ	"	"	175'
pull 25' NQ	"	"	150'

Rig hours 3204

END DAY 6:30 PM

2-15-12 KC, ET 745 start KC
run airlift w 150' pupis level
run airlift w 125' "

pulling lots of clogs + gobs sd
pull NQ - pup w magno
while andy gets set up

LOGGING 2/15 DTP, DAS, CPW daytrip
meet Kevin Storer & Jerry Markams

- suggestions to implement in our logging program
 1. run dummy rod to verify open hole.
 2. run gamma tool last through NA/csg.
 3. run c-tools next
 4. WA tools
 5. run caliper tool last b/c most
intrusion to base hole, & may dislodge
material blocking hole.

Rig from 3207

END DAY 6:45 pm

2-16-12 KC, ET 7:30 start -
gas for generator then to site
hole open to 204.25' bws

start pulling 3" csg. 1st 15'
a struggle, then tilt @ 75'
- bridged hole @ 106' - bailed/
pushed bridge to ~116 no string
next. - run NA back in
to push/drill out

INTC
exh. small in cab
beeping
low power?

Load
CEMENT
fraction
move 4" csg

pulled remainder of 3".
hole plugged at btm of 4" csg.
drilled csg back to 45' just
pushing plug ahead - bailer
won't lift it (clay) won't push
it down hole.

Abort logging Attempt
wash in 1/4 bag bentonite chips
run tremmie to btm of csg
pump 7 94 lb bags portland cement
to surface / pull 3" + 4" csg
cleaning

Rig down 3215

End day 6:45 pm

15 min lunch

2-17-12 KC, ET 3 AM START
found top of grout @ 5.75' bws
fill top of borehole w cement.

when ^{set} moved rig down. hole spun
up under rig. ~ 1 cu yd
placed gravel, timber etc underneath
jacked rig back up.
will need to fill hole before
moving rig. FWC generator not

- Soda ash
- quick gel
- hole plug
- CEMENT
- TRACTION MATS
- offload bad 3" CSG
- offload NQ only NQ
- Addl. HWT casing
- GAS CANS
- locite

W 19331

working - no water. netu full
after clearing up site.

End day 5:00 pm

3-12-12 ET + KC 9:45 dept. where
to CHASSA. CORE site.

fill hole under rig, ^{account} move rig,
run ALGAE X on both rig + intl.
fuel tanks

mob to new site - recon, clear
trail in + out

fuel rig + intl. - to motel
End day 8:15 pm

3-13-12 KC, ET 8:30 start - to
CHASSA. site - load water, hook
up trailer - to new site
back for mud up trailer - set
up drill site, org etc

BAREVA RD CORE
W# 19331

LAT 28° 37' 33.4" Average
CON 82° 30' 12.0" 585
STR 2860 TUS, R 18E readings
CO: HERNANDO Elevation waypoint "CME GPS"

WG584

order
3 1/4" trilob beds
3 1/4" trilob orings

hand lens for Enche
mineral char

tape measure
4x4 ft x 8'

0 - 2 1/4' push spl Lt gry BAN sp/sd
2.25 - 4.75 2 1/4 - 4.75 Lt yll pte. sp/sd un con.
4.75 - 7.25 4.75 - 7.25 Lt yll qtz. sd un con.

7.25 - 8.75' SAME

8.75 - ~9' Lt gry sd w/ layers of org sd
~9' - 11.25' Lt gry org sd unconsolidated

11.25 - 13.75' SAME

13.75 - 16.25' yll tan & org sd moist @ 16'
changes more to an org, brn sd - moist

16.25 - 18.75' @ ~17' sd went from org, brn
to a brn, tan sd

18.75 - 21.75' Tan, gry sd

21.75 - 23.75' SAME

23.75 - ~24' Lt gry sd unconsolidated

~24' - 25.75' SAME

25.75 - ~28' SAME in the last 1 1/2" sd went
to a red sc (Red clay) (Red sc)₂

~28 - 28.75 cutting soils was hard we only
grabbed .75' of the sample, pulled system
next run 28.75 - 31.25' Red clay,

changing @ ~29' to a tan brn sd w/ some
clays 31.25 - 32.75' tan brn org clayey sd
some what consolidated only cut 1 1/2 ft.

32.75 - 33.75' same only cut 1 ft.

Clay was denser to cut, somewhat consolidated

End day 8:30 pm

3-14-12 KC, ET 7:45 start

33.75 - 36.25 @ 34.75' sample got really soft as I was cutting: BRN ory sc / @ 34.75' changed to a gry, rd sc w/ some plastics

36.25 - 38.25 same sc well consolidated

38.25 - 39.75 last Ft. of run was very dense & hard to cut / variegated sd, sc

39.75 - 41.25 mottled sc rd, gry

41.25 - 43.75 SAME

43.75 - 44 SAME

44 - 46.25 SAME

46.25 - 48.25 SAME

48.25 - 51.25 same

51.25 - 53.25 same

53.25 - ~~54.75~~ 53.75

53.75 - 54.75 - we decided to go 1 Ft RUN 1 Ft' run 2 ft. run, because it was hard to cut, this way maybe faster. and

we are sure to get 100% recovery sample is lt gry sd w/ some ^{touch of} clay

My mistake 1 Ft, 2 Ft, 2 1/2 Ft

54.75 - 56.75 lt gry sd

@ 56.75 clay jammed system tried to pull, as I did cable broke. We will need to pull hollow stems to retrieve sample

70

demob from site (site security)
after capping + coring HSA's
rig + trailers to Chama site.

End day 6:30 pm

3-15-12 KC, ET BAN start
RETN to TRL 12:45 pm

3-26-12 ET, KC, dep. TRL 10:25 A
to Chama - pm rig + trailers - to
Barren Rd site - setup, pull HSA's
sebr. sample - to motel

End day 8 pm

3-27-12 ET, KC, BAN start
load WATER, to site, rearrange
cargo trailer, offload guk sub
to trailer, load HSA's on
INTE, move fraction motor
offload 4" CSG + clean thinner
run 56' of 4" - starting to kick
off in - set up fluid circulation
mix mud - run CSG w
circulation to stratifier hole

run 61' HWT w n 1' stickup
 run 60' NW w n 1' stickup
 run in 63' NQ w 6 1/2' stickup.
 change site, set up main sys.

big hours 3238

End day 7:15 pm

27" Rod stickup

3-28-12 KL, ET 8AM start

60.75' Assembled Desanders, cut 2' of
 stuff out. Ran core barrel 27"

gives us sample @ 60.75'

60.75' Lt gray ss (clay) next run
 was to be 2.5' - sample was hpc. (highly
 plastic clay) lost sample attempt to
 go back and get it. attempted twice
 to catch sample by dropping inner barrel
 we caught 2 small plugs of hpc

dropped inner barrel again and system
 latched into place. sample may have
 been pushed to the side and was too

soft to cut. starting back coring @ 63.25'

63.25' ^{sample} hpc minimal sample ^{10.00} 65.75' start
 sampling recovered 1.50' sample after changing
 from extended shoe to rock shoe. going to
 try cleaning out hole, then run 1 1/2

runs until we are out of hpc - 67.50'

3" of hpc. ^{67.50 - 69.50} 69.50 - 70.25
 org hpc 1.50 Run Fall
 Recovery

4"X6" pvc adaptor

69.5 - 70.75 - org hpc 1 1/2" run full recovery
70.75 - 73.25' org hpc 2.50' run, we had to
core 2' & stop fluid & push the last 6" to
recover highly plastic clays

73.25 - 76.75' recovered 6"

75.25 - 78.25' - 2.50' run Full Recovery

gray h.p.c. of 3' FT

78.25 - 80.75 Lt gray hpc - 1 1/2"

80.75 - 82.25 same / but ^{good} ~~minimal~~ sample

82.25 - 83.50 same / still ^{minimal sample} no circulation

83.50 - X 85.75 Same 1' FT sample

85.75 - 88.25 gray org hpc 2' FT sample

88.25 - 90.75 0 (zero) pump pressure really
easy to cut. ^{gray} gray br org h.p.c. / ~~at~~ 90.75'

90.75 - 93.25 gray org h.p.c. / ~~at~~ no circulation

93.25' - 95.75 same 1' FT sample

95.75 - 98.25 still zero pump pressure, still easy
to cut / same highly plastic clay

98.25 - 100.75 still zero pump pressure

Run was easy cutting / sample same.

100.75 - 103.25 same / last 6" hard

lime stone ☺

103.25 - 105.75 lime stone (summit)

105.75 - 108.25 same

Rotation pressure starting to spike very
high, Rot NR also is trying to jam up.
pulled 60' of NR, to run 311 casing.

4"x6" pvc adaptor
PENETROL
flange etc for mbl drill
quick change rebuild
rod fixed on 4719
RAGG

bx MATZ - 10 bx
(lost in case)

2" blocks
1 bag soda ash

Rig hours 3246

End day 7:15 pm 1/2 hr lunch

3/29/12 ET, KC 8:15 AM

FILLED w/ WATER @ CHASS.

PULLED NQ, HOLE OPEN TO 85'

TOP OF 3" CASING 3' BELOW SURFACE.

NOW ADVANCING 3" CASING.

SET 108' ~~E~~ NW CSG w < 1' stickup
RUN NQ + inner bbl back into
hole

Cleanup / loadup / lockup

End day 7:15 pm 45 min lunch

3-30-12 KC, ET ~~7:15~~ 7:30 Start

@ site, set up to core 1st run cut

smooth 5' ft. run / full recovery

108.75 - 111' lime stone

111' - 116' smooth cutting cut like

butter, soft lime stone full recovery

116' - 121' Full recovery cut good / lime stone

121' - 126' ~~5~~ 5' ft run / same Full recov.

126 - 131' smooth cutting / lime stone Full Rec.

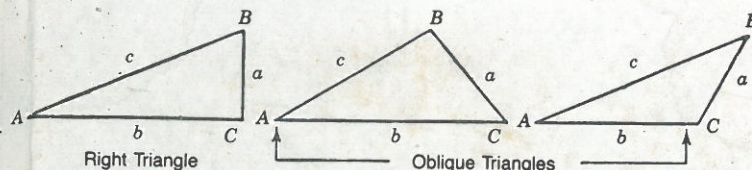
131 - 136 same

136 - 141 same

140 - load materials & condition hole
to make sure cuttings don't impede core
well.

74
Rig hours 3255
miles 16309
ARR WHE 4:15 pm

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

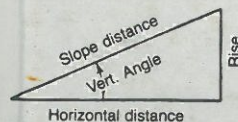
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\operatorname{cosec} = \frac{c}{a}$

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	$s = \frac{a + b + c}{2}$, $\sin \frac{1}{2} A = \sqrt{\frac{(s - b)(s - c)}{bc}}$, $\sin \frac{1}{2} B = \sqrt{\frac{(s - a)(s - c)}{ac}}$, $C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}$, $\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{bc \sin A}{2}$
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 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. Cosine $5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ 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.

