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☐ Urgent, please hand deliver ☑ For Review / Comment ☐ Please Reply

TO:	CHRIS HENSLEY	DATE:	6/7/05
FIRM:	TVA	SUBJECT:	Field Boring Logs NB-2, 10, 22, 24, 35, 41, and 44.
FAX:	423-751-7094		
TEL:			
# PAGES:	12+ this cover sheet		
COPY TO:			
FROM:	MACTEC	COMMENTS:	NB-10 recovered rock core has not been logged yet, boring termination depth was noted at 72.4 FT.
OFC/DEPT:	Knoxville		
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HARDCOPY:			
ADDRESS:	1725 Louisville Drive		
	Knoxville, TN 37921		

MACTEC **SOIL TEST BORING FIELD REPORT**

BORING NO. NB-2 PG. 1 OF 1

RIG TYPE ATV HAMMER TYPE AUTO

JOB NO. 304305021 DRILLER J. BAILEY HOURS DRILLING ____ GROUND SURFACE ELEV. ____

JOB NAME TVA - KINGSTON LOGGED BY C. LAWSON HOURS MOVING ____ DATE: 5/24 WEATHER: SUNNY

SAMPLE NO.	DEPTH	BLOWS/6"	REC.	SOIL OR ROCK DESCRIPTION	REMARKS
1	0-1.5	4 5 6		1.5' GRAVEL - 0.3' STIFF RD/TN/OR, SL. MOIST, SA. SI. CLAY W/ CHERT - RES.	
2	5-6.5	2 5 5		1.5' STIFF, RD/BR, MOIST, SA. SI. CLAY W/ CHERT + SMOOTH STONE - RES	
3	10-11.5	3 5 7	1	1.5' STIFF, BR/RD, MOIST, SI. CLAY - RES (CH) W/ BLK OXD. STAINING	
4	15-16.5	2 6 6	1	1.5' STIFF, TN/RD, V. MOIST, SI CLAY W/ BLK OXD. STAINING - RES (CH)	
5	20-21.5	50/1	2	0.2' V. HARD, RD/BR, MOIST, SA SI CLAY W/ ROCK FRAG. - RES	
				B.O.R. @ 20.2'	
6	25-26.5		2		
			3		
			3		
			4		

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: 20.2'
BORING REFUSAL: 20.2'
WATER TOB DEPTH NOT ENCOUNTERED
WATER 24 HR.: DEPTH " "
WATER LOSSES
CAVE-IN DEPTHS
CASING: SIZE LENGTH
STANDBY TIME BORING LAYOUT

1024 8/03

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER 3 1/4"	0 TO 20.2'
HAND SHOP: W/MUD: W/WATER	TO
ROTARY DRILL: W/MUD: W/WATER	TO
DIAMOND CORE	TO
CORE SIZE	TO
UNDISTURBED SAMPLES NO SIZE	
BAG SAMPLES NO 1, 2'-10'	

3479
10101

MACTEC SOIL TEST BORING FIELD REPORT

BORING NO. NB-10 PG. 1 OF ___

JOB NO. 304305102I DRILLER M. Burnett HOURS DRILLING ___ GROUND SURFACE ELEV. ___

JOB NAME TVA KINGSTON LOGGED BY L. Mason HOURS MOVING ___ DATE: 5/19/05 WEATHER:

SAMPLING No.	Depth	N* (1st 6" / 2nd 6" / 3rd 6")	SCALE (ft)	UD	REC	SOIL CLASSIFICATION	REMARKS
1	0/2.0	3 4 6 4	0		1.4	Stiff, 7.5YR 3/4 dark brown, slightly clayey SILT Rootlets (Topsoil). Dry.	
	09:29						
2	2/4	2 2 2 4	5		1.1	Soft, 7.5YR 3/4 dark brown, very slightly clayey SILT grading down to very silty CLAY. Slightly moist.	
	09:35						
3	4/6	5 5 6 6			1.5	Stiff 5YR 4/4 reddish brown (with some 5YR 2.5/1 black, spotty manganese mottling) very silty CLAY. Slightly moist.	
	09:40						
4	6/8	4 4 4 7			1.0	Firm, 2.5YR 4/6 dark red (with 2.5YR 2.5/1 black, spotty manganese mottling) silty CLAY. Slightly moist.	
	09:46						
5	8/10	4 4 5 6			1.0	Same as above except stiff.	
	09:49						
6	10/12	6 7 7 9			1.3	Same as above except very stiff.	
	09:55						
7	12/14	4 5 5 7			1.6	Stiff 5YR 4/6 yellowish red (with 5YR 2.5/1 black, spotty manganese mottling) silty CLAY with occasional 1 to 3 mm buff-colored, weathered chert fragments. Slightly moist.	
	09:52						
8	14/16	3 4 7 9		SCM	0.6 0.75	~~Stiff~~ Same as above, with weathered chert (buff-colored, 1 to 4 mm) throughout.	
	10:01						
9	16/18	6 8 9 8			1.9	Same as above, except very stiff.	
	10:10						
10	18/20	4 5 5 6			1.8	Stiff 5YR 4/6 yellowish red (with 5YR 2.5/1 black spotty manganese mottling) silty CLAY with ~~some~~ 1 mm to 1 cm buff-colored weathered chert throughout. Slightly moist.	
	10:16						

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: ___

BORING REFUSAL: 42.5 FT

WATER TOB DEPTH ___

WATER 24 HR.: DEPTH 20.7 FT

WATER LOSSES ___

CAVE-IN DEPTHS ___

CASING: SIZE ___ LENGTH ___

STANDBY TIME ___ BORING LAYOUT ___

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER	___ TO ___
HAND SHOP: W/MUD: W/WATER	___ TO ___
ROTARY DRILL: W/MUD: W/WATER	___ TO ___
DIAMOND CORE	___ TO ___
CORE SIZE	___ TO ___
UNDISTURBED SAMPLES NO ___ SIZE ___	
BAG SAMPLES NO ___	

F1024 8/00

MACTEC SOIL TEST BORING FIELD REPORT

JOB NO. 3043051021 DRILLER M. Burnett BORING NO. NB-10 PG. 2 OF ___
JOB NAME TVA KINGSTON LOGGED BY J. Mason HOURS DRILLING ___ HOURS MOVING ___ GROUND SURFACE ELEV. ___ DATE: 5/19/05 WEATHER:

No.	Depth	SAMPLING "N" 1st 6"	2nd 6"	3rd 6"	SCALE	OD	REC	SOIL CLASSIFICATION	REMARKS
11	20/22 10:19	4	5	5	6		1.0	Same as above.	
12	22/24 10:26	4	4	5	6		1.2	Same as above	
13	24/26 10:30	4	4	6	6		1.8	~~Stiff~~ Jcm Same as above	
14	26/28 10:36	5	6	8	10		1.2	Stiff, 5YR 4/6 to 5YR 5/6 yellowish red, slightly sandy (in discrete, irregular, subhorizontal layers a few millimeters thick), silty CLAY, Slightly moist	
15	28/30 10:43	7	8	7	9		1.0	Stiff, 5YR 4/6 yellowish red (with some 5YR 2.5/1, subhorizontal black mottling) silty CLAY, with occasional 5mm, angular, buff-colored, weathered chert. Slightly moist.	
16	30/32 10:47	4	6	9	10		1.6	Same as above.	
17	32/34 10:55	4	4	5	5		1.7	Stiff, mottled (5YR 4/6 yellowish red, 5YR 3/3 dark reddish brown, and 10YR 6/6 brownish yellow) silty CLAY, Slightly moist.	
18	34/34.8 11:01	10	50/0.3'				0.35	Firm, 10YR 5/4 yellowish brown to 10YR 4/4 dark yellowish brown, sandy CLAY, Very moist to wet, believed to be weathered dolomite.	
19	36/39.45 11:12	18	32	50/0.45'			0.9	~~Same as above, except~~ Very ~~wet~~ Jcm dense Jcm 10YR 5/4 yellowish brown to 10YR 4/4 dark yellowish brown, Jcm silty SAND, with weathered fragments of dolomite - severely weathered dolomite. Wet.	

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: ___
BORING REFUSAL: 42.5 FT
WATER TOB DEPTH ___
WATER 24 HR.: DEPTH 20.7 FT
WATER LOSSES ___
CAVE-IN DEPTHS ___
CASING: SIZE ___ LENGTH ___
STANDBY TIME ___ BORING LAYOUT ___

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER	___ TO ___
HAND SHOP: W/MUD: W/WATER	___ TO ___
ROTARY DRILL: W/MUD: W/WATER	___ TO ___
DIAMOND CORE	___ TO ___
CORE SIZE	___ TO ___
UNDISTURBED SAMPLES NO ___ SIZE ___	
BAG SAMPLES NO ___	

F1024 8/00

MACTEC SOIL TEST BORING FIELD REPORT

BORING NO. NB-22 PG. 2 OF 2
RIG TYPE ATV HAMMER TYPE Auto
JOB NO. 3043051021 DRILLER G. Akin HOURS DRILLING ____ GROUND SURFACE ELEV. ____
JOB NAME TVA Kingston Gypsum LOGGED BY T. Justice HOURS MOVING ____ DATE: 6/16/05 WEATHER: Sunny

BEGAN NQ coring @ 38.5FT

40' to 41' - Partially sand-filled cavity.

Run #1 ; 38.5FT to 41.7FT
Run = 3.2FT
Rec = 0.85'/3.2' = (27%)
RQD = 0%

Run #2 ; 41.7FT to 43.7 FT
Run = 2.0FT
Rec = 1.95' (98%)
RQD = 1.35'/2' = (68%)

44' to 47' - Partially sand-filled cavity

Run #3 ; 43.7FT to 48.5FT
Run = 4.8FT
Rec = 1.3FT (27%)
RQD = 0%

CORING TERM @ 48.5FT

Slightly to completely weathered, moderately to closely jointed, Brownish Gray to Gray, fine grained, very strong (hard) siliceous Dolomite. Bedding is at an apparent dip of about 40 to 50°. Joints exhibit some sand infilling and iron-staining.

NB-22A — Note offset about ____ FT to NB-22A

1 9'-11' → 1.2
2 16.5-18.5 → 1.5
3 19-21 → 1.7

B.T. @ 21FT

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: 48.5 FT
BORING REFUSAL: 38.5 FT
WATER TOB DEPTH @ time of drilling = 11.5 FT
WATER 24 HR.: DEPTH ____
WATER LOSSES ____
CAVE-IN DEPTHS ____
CASING: SIZE ____ LENGTH ____
STANDBY TIME ____ BORING LAYOUT ____

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER 3 1/4"	0 TO 38.5'
HAND SHOP: W/MUD: W/WATER	____ TO ____
ROTARY DRILL: W/MUD: W/WATER	____ TO ____
DIAMOND CORE	____ TO ____
CORE SIZE NQ	38.5' TO 48.5'
UNDISTURBED SAMPLES NO 6 SIZE 3"	
BAG SAMPLES NO 2 2'-10'	

'24 8/03

MACTEC **SOIL TEST BORING FIELD REPORT**

BORING NO. NB-24 PG. 1 OF 1

RIG TYPE ATV HAMMER TYPE AUTO

JOB NO. 3093051021 DRILLER J. BAILEY HOURS DRILLING ____ GROUND SURFACE ELEV. ____

JOB NAME TVA-KINGSTON LOGGED BY C. LAWSON HOURS MOVING ____ DATE: 5/24 WEATHER: SUNNY

No.	Depth				Rec.	Description	Remarks
0	0-1.5	1	1	3	1.0'	TOPSOIL - 0.5'; SOFT RD/BR, SL MOIST, SL CLAY W/CHERT - RES.	
						OFFSET 5' SOUTH OF STAKE DUE TO OVERHEAD BRANCHES	
1	5-6.5	5	10	13	1.5'	V. STIFF, RD/BR, SL. MOIST, S. CLAY W/CHERT - RES.	
D1	9-11	→			0.8'	PUSH 0.8', STOPPED, PULLED	
						AR @ 12.5'	
2	15-16.5						
D2	19-21	→					
3	25-26.5						
3	26.5-28.5	→					
4	31.5-33.5	→					
4	35-36.5						

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: 12.5'
BORING REFUSAL: 12.5'
WATER TOB DEPTH NOT ENCOUNTERED
WATER 24 HR.: DEPTH " "
WATER LOSSES
CAVE-IN DEPTHS
CASING: SIZE ____ LENGTH ____
STANDBY TIME ____ BORING LAYOUT ____

METHOD OF ADVANCING BORING		DEPTH
POWER AUGER	3 1/4"	0 TO 12.5'
HAND SHOP: W/MUD: W/WATER		TO
ROTARY DRILL: W/MUD: W/WATER		TO
DIAMOND CORE		TO
CORE SIZE		TO
UNDISTURBED SAMPLES	NO 1 SIZE 3"	
BAG SAMPLES	NO ____	

24 8/03

MACTEC **SOIL TEST BORING FIELD REPORT**

BORING NO. NB-35 PG. 1 OF 1

RIG TYPE ATV HAMMER TYPE Auto

JOB NO. TVA Kingston DRILLER G. Akins HOURS DRILLING ____ GROUND SURFACE ELEV. ____

JOB NAME 304305102.1 LOGGED BY T. Justice HOURS MOVING ____ DATE: 6/3 WEATHER: Rain

Note: NB-35 was located about 200 FT NNE of NB-36 and about 20 FT SE of 148 Pond.

1	0-2	2/2	2	3	1.3	0.4-2.0 - Firm Brown moist Clayey silt with roots - Possible Alluvium/Residuum (Topsoil = 0-0.4')
2	2-4	3/3	5	5	1.8	2.0'-6.0' - STIFF to Very Stiff
3	4-6	5/6	6	8	1.8	Orange Br slmoist Silty clay with chert fragments rounded
4	6-8	8/8	11	13	2.0	Sandstone fragments - Possible Alluvium/Residuum
5	8-10	7/10	8	10	2.0	- 6.0-10.0' - Very Stiff OR BR slmoist silty clay with chert
6	10-12	3/7	9	11	2.0	fragments - Residual → "SAME AS ABOVE"
7	12-14	5/5	7	7	2.0	- STIFF OR BR slmoist to moist Silty clay with chert fragments ▽-14 FT
8	14-16	2/3	2	2	2.0	and black manganese staining - Residuum → "SOFT SAME AS ABOVE except slmoist to wet"
9	16-18	50/3	3	3	1.5	→ FIRM BROWN to ORBR wet Sandy Silt
10	18-20	WOH →			0.3 to 0.5	with chert fragments - Residuum → Very Soft "SAME AS ABOVE"
	20-22	WOH/WOH	S/O	-	0	
12	22-24					AUGER Refusal @ 20.4 FT.
13	24-26					BEGAN NQ @ 20.4 FT.
14	26-28					Run #1 ; 20.4 FT to 24.6 FT.
15	28-30					Ran = 4.2 FT. Rec = 4.0 FT (95%) RQD = 3.6/4.2 = (86%)
						Run #2 ; 24.6 FT to 31.5 FT. Ran = 6.9 FT Rec = 5 FT (74%) RQD = 4.4/6.9 (64%)
						CORE TERM. @ 31.5 FT
						Slightly to moderately weathered, Moderately Closely jointed, Light Brownish Gray to Gray, fine grained, very strong (hard) Siliceous Dolomite. Bedding is Not EVIDENT. Joints exhibit some Sand infilling and some staining. Joints dipping from about 60° to near vertical.

+STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: 31.5 FT
BORING REFUSAL: 20.4 FT
WATER TOB DEPTH @ time of drilling = 14 FT
WATER 24 HR.: DEPTH 4.0 FT
WATER LOSSES 0%
CAVE-IN DEPTHS
CASING: SIZE 3 1/4" HSA LENGTH 20.4 FT
STANDBY TIME — BORING LAYOUT —

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER 3 1/4" HSA	0 TO 20.4 FT
HAND SHOP: W/MUD: W/WATER	____ TO ____
ROTARY DRILL: W/MUD: W/WATER	____ TO ____
DIAMOND CORE	____ TO ____
CORE SIZE NQ	20.4' TO 31.5'
UNDISTURBED SAMPLES NO — SIZE —	
BAG SAMPLES NO 1, 13'-20'	

024 8/03

MACTEC **SOIL TEST BORING FIELD REPORT** BORING NO. NB-41 PG. 1 OF 1

RIG TYPE ATV HAMMER TYPE AUTO

B NO. 304305021 DRILLER J. BAILEY HOURS DRILLING ____ GROUND SURFACE ELEV. ____

JOB NAME TVA-KINGSTON LOGGED BY C. LAWSON HOURS MOVING ____ DATE: 5/23 WEATHER: P. CLOUDY

0	0-1.5	1	2	4		1.5'	FIRM, BROWN TO RED BROWN, SL. MOIST, SILTY CLAY - RES.
1	5-6.5	6	6	7		0.5'	STIFF, ~~BROWN~~ RED BROWN, SL. MOIST, SI. CLAY W/ CHERT/LIMESTONE FRAGS. - RES.
2	9-11	→			1	1.1'	~~PUSHED 1.5', STOPPED, SO PULLED~~ PUSHED 2.0' (WOR 9, 2, 11)
2	15-16.5	3	3	4	1	1.0'	FIRM, ~~BROWN~~ RED BROWN, SL. MOIST, SI. CLAY W/ CHERT FRAGS - RES.
2	19-21	→			2	1.25'	PUSHED 1.5', STOPPED, SO PULLED (WOR 19, 2, 21)
3	25-26.5	4	4	6	2	1.2'	STIFF, ~~BROWN~~ RED BROWN, SL. MOIST, SI. CLAY W/ CHERT FRAGS - RES.
3	26.5-28.5	→				1.5'	PUSHED 1.5', STOPPED, SO PULLED (WOR 26.5, 3, 28.5)
					3		A.R. @ 31.0'
							(WOR)
					3<		(WOR)
					4		

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: 31.0'
BORING REFUSAL: 31.0'
WATER TOB DEPTH NOT ENCOUNTERED
WATER 24 HR.: DEPTH 11 4
WATER LOSSES ____
CAVE-IN DEPTHS ____
CASING: SIZE ____ LENGTH ____
STANDBY TIME ____ BORING LAYOUT ____

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METHOD OF ADVANCING BORING		DEPTH
POWER AUGER	3¼"	0 TO 31.0'
HAND SHOP: W/MUD: W/WATER		____ TO ____
ROTARY DRILL: W/MUD: W/WATER		____ TO ____
DIAMOND CORE		____ TO ____
CORE SIZE		____ TO ____
UNDISTURBED SAMPLES	NO 3 SIZE 3"	
BAG SAMPLES	NO 1, 2'-15'	

MACTEC **SOIL TEST BORING FIELD REPORT** BORING NO. NB-44 PG. 1 OF 3

RIG TYPE ATV HAMMER TYPE Auto

JOB NO. 3043051021 DRILLER G. AKINS HOURS DRILLING ____ GROUND SURFACE ELEV. ____

JOB NAME TVA Kingston Gypsum LOGGED BY T. Justice HOURS MOVING ____ DATE: 5/31 WEATHER: ____

SAMPLE NO.	INTERVAL	BLOWS/6"	N	REC. FT	SOIL DESCRIPTION	REMARKS
1	0-1.5	1	1	1	1.0 Very Soft Brown moist clayey silt with rounded sandstone fragments and roots - Alluvium	Topsoil = 0-0.2' {Note: OFFSET Approx. 9 FT S85°E
2	5-6.5	3	4	6	1.5 STIFF Dark Yellowish Brown Sl. moist silty clay with chert fragments and black manganese staining - Residuum	
101	9'-11"	9 / 10 / 1 / 11			1.8	▽ - @ time of drilling = 9 FT
3	11-12.5	2	3	4	1.5 Firm Yellowish Brown to Pale Gray Sl. moist silty clay with chert fragments - Residuum	
4	15-16.5	3	3	4	1.5 "SAME AS ABOVE"	
102	16.5-18.5	16.5 / 18.5			1.8	
103	19-21	19 / 21			1.8	
104	21.5-23.5	21.5 / 23.5			2.0	
5	23.5-25	2	2	4	1.5 Firm Dark Yellowish Brown to Black moist Sandy clayey Silt - Residuum - "Sample exhibits relict fracturing."	
105	26.5-28.5	26.5 / 28.5			1.8	
28-31						
		31 / 33			1.0	
6	33-34.5	1	1	1	1.3 Very Soft Brown WET Sandy clayey Silt with weathered Dolomite fragments - Residuum	- Transducer Noted Weathered Zone at 33 to 37'
7	38.5-40	3	7	14	1.5 VERY FIRM BROWN WET SILTY SAND (Completely WEATHERED Dolomite) with WEATHERED Dolomite Fragments - RESIDUUM	

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND & 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: ____
BORING REFUSAL: 44.2 FT
WATER TOB DEPTH @ Auger refusal = 7.2 FT
WATER 24 HR.: DEPTH 2.9 FT
WATER LOSSES ____
CAVE-IN DEPTHS ____
CASING: SIZE HW LENGTH 44.5 FT
STANDBY TIME ____ BORING LAYOUT ____

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER 3 1/4"	0 TO 44.2 FT
HAND SHOP: W/MUD: W/WATER	____ TO ____
ROTARY DRILL: W/MUD: W/WATER	____ TO ____
DIAMOND CORE	____ TO ____
CORE SIZE HQ	____ TO ____
UNDISTURBED SAMPLES NO 6 SIZE 3"	
BAG SAMPLES NO ____	

24 8/03

MACTEC SOIL TEST BORING FIELD REPORT BORING NO. NB 44 PG. 2 OF 3

RIG TYPE ATV HAMMER TYPE Auto

JOB NO. 3043050021 DRILLER G. AKINS HOURS DRILLING GROUND SURFACE ELEV.

JOB NAME TVA Kingston Bypass LOGGED BY T. Justice HOURS MOVING DATE: 5/31/06 WEATHER: P. Sunny

843.5-45	50/3	-	-	0.5 Very Hard Gray Dolomite fragments with (STAFF) Red Brown Sl. moist Silty clay And Brown Sl. moist Sandy Silt (located on relict fracture Surfaces). - Residual

Auger Refusal @ 44.2 FT

SET HW CASING TO A DEPTH OF ABOUT 44.5 FT

BEGAN HQ CORING at 44.2 FT

Run #1 : 44.2 FT TO 47.2 FT
Ran = 3.0 FT
REC = 2.6 FT (87%)
RQD = 10%

Run #2 : 47.2 FT TO 55.1 FT
Ran = 9.9 FT
Rec = 4.0 FT (51%)
RQD = 2.75/7.9 = (28%)

50.6 FT TO 51.7 FT - CAVITY - partially clay filled
51.8 FT TO 52.7 FT - CAVITY - partially clay filled
52.7 FT TO 53.3 FT - partially clay filled cavity

Run #3 55.1 FT TO 63.9 FT
Ran = 8.8 FT
Rec = 3.8 FT (43%)
RQD = 1.0/8.8 = (11%)

58.0 FT TO 58.4 FT - CAVITY - Partially clay filled
59.1 FT TO 60.6 FT - CAVITY - Partially clay filled
61.5 FT TO 63.0 FT - CAVITY - Partially clay filled

Run #4 63.9 FT TO 70.1 FT
Ran = 6.2 FT
Rec = 3.5 FT (56%)
RQD = 1.25'/6.2 (20%)

66.0 to 66.7' - Partaly clay filled Cavity
67.6' to 68.0' - Partially clay filled Cavity
68.1' to 69.6' - partially Sand filled Cavity

Run #5 70.1 FT TO 80.1 FT
Ran = 10.0 FT
Rec = 2.4' (24%)
RQD = 0%

73.2 FT TO 80.0 FT - Partially Sand-filled Cavity

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: TD 80.2 FT
BORING REFUSAL: 44.2 FT
WATER TOB DEPTH @ Auger Refusal = 7.2 FT
WATER 24 HR.: DEPTH 2.9 FT
WATER LOSSES 10% @ 66 FT
CAVE-IN DEPTHS
CASING: SIZE HW LENGTH 44.5 FT
STANDBY TIME BORING LAYOUT

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER 3 1/4"	0 TO 44.2 FT
HAND SHOP: W/MUD: W/WATER	TO
ROTARY DRILL: W/MUD: W/WATER	TO
DIAMOND CORE	TO
CORE SIZE	TO
UNDISTURBED SAMPLES NO 4 SIZE 3"	TO
BAG SAMPLES NO	

* 8/03

MACTEC SOIL TEST BORING FIELD REPORT BORING NO. NB-44 PG. 3 OF 3

JOB NO. 30430102 DRILLER G. ARMS RIG TYPE ATV HAMMER TYPE Auto

JOB NAME TVA Kingston Gypsum LOGGED BY T. Justice HOURS DRILLING HOURS MOVING DATE: 6/01 GROUND SURFACE ELEV. WEATHER: RAIN

Run #6 ; 80.1FT TO 84.8 FT
Ran = 4.7 FT
Rec = 3.4 FT (72%)
RQD = 0%

Run #7 ; 84.8FT TO 95.1 FT
Ran = 10.3 FT
Rec. 2.5 FT (24%)
RQD = 0.5/10.3 = 5%

86.1 FT TO 94.1 FT - CAVITY - Partially Clay-filled

Run # 8; 95.1FT TO 104.2 FT
Ran : 9.1 FT
Rec = 9.1 FT (100%)
RQD = 4.7/9.1 = (52%)

CORING TERM. @ 104.2 FT

SLIGHTLY To Completely weathered Closely jointed, Brownish GRAY to Light GRAY, Finegrained, Very strong (HARD) Siliceous Dolomite. BEDDING IS AT AN Apparent Dip of 45° to 50°. Orthogonal (to Bedding) and High angle (near-vertical) joints observed throughout. Bedding plane fractures and joints exhibit iron-staining. Numerous clay-filled and Sand-filled Cavities are noted. Portions of recovered Rock core is highly fractured.

+STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND & 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: 104.2 FT
BORING REFUSAL: 44.2 FT
WATER TOB DEPTH @ Auger refusal = 7.2 FT
WATER 24 HR.: DEPTH 2.9 FT
WATER LOSSES 10%
CAVE-IN DEPTHS
CASING: SIZE HN LENGTH 44.5 FT
STANDBY TIME BORING LAYOUT
9/03

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER 3 1/4"	0 TO 44.2 FT
HAND SHOP: W/MUD: W/WATER	TO
ROTARY DRILL: W/MUD: W/WATER	TO
DIAMOND CORE	TO
CORE SIZE	TO
UNDISTURBED SAMPLES NO 6 SIZE 3"	TO
BAG SAMPLES NO —	

MACTEC SOIL TEST BORING FIELD REPORT

BORING NO. NB-10 PG. 3 OF ____

RIG TYPE CME 550 HAMMER TYPE AUTO

NO. 304305T027 DRILLER M. Burnett HOURS DRILLING ____ GROUND SURFACE ELEV. ____

JOB NAME TVA KINGSTON LOGGED BY J. Mason HOURS MOVING ____ DATE: 5/19/05 WEATHER: ____

20 38/40 6 2 14 8	1.5	38 to 38.8 ft.: Very stiff, 5YR 4/6 yellowish red, silty clay, with 1 to 3 mm black manganese and 2 to 7 mm buff-colored, weathered chert. Slightly moist; 38.8 to 39.2 ft.: Stiff, 5YR 4/6 yellowish red to 7.5YR 4/4 brown, sandy CLAY. Very moist to wet. 39.2 to 39.5 ft.: Brownish gray severely weathered DOLOMITE. Wet.
11:21		
21 40/42 7 9 16 50/0.3'	1.1	Firm, 10YR 5/4 yellowish brown to 7.5YR 4/6 strong brown, silty SAND. Moist. Believe to be very severely weathered dolomite.
11:29		
22 42.5/42.75 25 50/0.25	0.5	Same as above, except very dense.
11:43		

Augers refused @ approximately 42.5 ft.

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND 6" AND 3RD 6" TO DRIVE 1.38" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

2.65 Shelby 4.36 4.76 42.75

BORING TERMINATED: ____
BORING REFUSAL: 42.5 FT
WATER TOB DEPTH ____
WATER 24 HR.: DEPTH 20.7 FT
WATER LOSSES ____
CAVE-IN DEPTHS ____
CASING: SIZE ____ LENGTH ____
STANDBY TIME ____ BORING LAYOUT ____

24 8/03

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER	____ TO ____
HAND SHOP: W/MUD: W/WATER	____ TO ____
ROTARY DRILL: W/MUD: W/WATER	____ TO ____
DIAMOND CORE	____ TO ____
CORE SIZE	____ TO ____
UNDISTURBED SAMPLES NO ___ SIZE ___	
BAG SAMPLES NO ____	

MACTEC SOIL TEST BORING FIELD REPORT

BORING NO. NB-22 PG. 1 OF 2

RIG TYPE ATV HAMMER TYPE Auto

JOB NO. 30130510 21 DRILLER C. ATKINS HOURS DRILLING ____ GROUND SURFACE ELEV. ____

JOB NAME TVA Kingston LOGGED BY T. Justice HOURS MOVING ____ DATE 6/03 WEATHER Cloudy

Note: NB-22 was offset approx. 50 FT S 15° W of original staked location

SAMPLING No.	Depth	BLOWS /6"	SCALE	REC. (ft)	DESCRIPTION	REMARKS
1	0-1.5	1 1 1		1.3	Very Soft Brown to ORBr Very moist Topsoil = 0 to 0.8' Clayey silt with roots.	
2	5-6.5	1 3 4		1.3	Firm OR Brn moist to very moist Clayey Silt - Residuum	to Reddish OR
	9-11	→	9 / 7 / 11	1.2		∑ - 11.5 FT
3	15-16.5	5 6 6		1.5	STIFF OR Brn Sl. moist Silty clay with chert fragments - Residuum	to Reddish OR
	16.5-18.5	→	6.5 / 12 / 18.5	1.0		
	19-20	→	19 / 13 / 20	1.0		
4	20-21.5	6 5 4		0.5	- STIFF GRAY CHERT Fragments	
	22.5-24.5	→	22.0 / 14 / 24.5	1.6	with light OR Brn wet Silty clay - Residuum	
5	25-26.5	2 4 4		1.5	Firm Brownish yellow wet SANDY SILT - Residuum	
	26.5-28.5	→	26.5 / 15 / 28.5	2.0		
	31.5-33.5	→	31.5 / 16 / 33.5	2.0		
6	35-36.5	2 3 3		1.5	Firm Brownish Yellow Very moist to wet Sandy clay - Residuum	
					Auger Refusal @ 38.5 FT	

*STANDARD PENETRATION RESISTANCE IS SUM OF BLOWS FOR 2ND & 3RD 6" TO DRIVE 1-3/8" I.D., 2" O.D. SPLIT BARREL SAMPLER WITH 140 POUND HAMMER FALLING 30 INCHES.

BORING TERMINATED: 40.5 FT
BORING REFUSAL: 38.5 FT
WATER TOB DEPTH @ time of drilling = 11.5 FT
WATER 24 HR.: DEPTH ____
WATER LOSSES ____
CAVE-IN DEPTHS ____
CASING: SIZE ____ LENGTH ____
STANDBY TIME ____ BORING LAYOUT ____

METHOD OF ADVANCING BORING	DEPTH
POWER AUGER 3 1/4"	0 TO 38.5 FT
HAND SHOP: W/MUD: W/WATER	____ TO ____
ROTARY DRILL: W/MUD: W/WATER	____ TO ____
DIAMOND CORE	____ TO ____
CORE SIZE NQ	38.5 TO 40.5'
UNDISTURBED SAMPLES NO 6 SIZE 3"	
BAG SAMPLES NO 1, 2-16'	

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