ENGINEERING REPORT

for

CONTRACT NO. DACW 33-83-D-0006
WORK ORDER NO. 0026

SUBSURFACE INVESTIGATION, LIQUEFACTION ASSESSMENT &

PIEZOMETER INSTALLATION FOR MANSFIELD HOLLOW DAM, CT

AND FRANKLIN FALLS DAM, NH

Prepared for:

U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254

Project No. 60022
August 23, 1985

VOLUME #2 of 2

EGA

RECEIVED
SEP 3 1985
GEOTECHNICAL
ENGINEERING BRANCH

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APPENDIX C

Chain of Custody Logs

EASTERN GEOTECHNICAL ASSOCIATES

CHAIN OF CUSTODY LOG

Project: MANSFIELD HOLLOW DAM, CT

Contract DACW-33-83-D-0006, W.O. # 26

Items: Jar Samples 6 BOXES (FD-85-1, FD-85-2, FD-85-3)

Bottles

Core Boxes

Sampling Logs FD-85-1, FD-85-2, FD-85-3

	Date & Time Received	Date & Time Transfered	Comments	Condition
1.	AS SAMPLED	5-9-85 0740 hrs	JCC	
2.	5-9-85 - 7:45	Honest Knowles		
3.				
4.				
5.				

CHAIN OF CUSTODY LOG

GEB REQUISITION 85-47 DACW 33-83-D-006

DELIVERY ORDER No. 0026

FRANKLIN FALLS DAM, N.H.

EARTH QUAKE STUDY

DESCRIPTION: JAR SOIL SAMPLES

10 BOXES

AS SAMPLED DATE:

DONALD ELLISON 6/28/85

Delivered	DATE	TIME	/	RECEIVED	DATE	TIME
Donald Ellison	6/28/85	2:30		Forest Knowles	6-28-85	2:30

TO: NED MATERIALS AND WATER QUALITY LAB

424 TRAPELO ROAD WALTHAM, MA

02254

Form #:	File #:	Proc. #:	
BRIGGS	PROJECT: FRANKLIN FALLS DAM N.H.	Dept. #:	Report #:
		RE:	

Emp. #:	Project # 62022	Date:	Code:
Arr. Time:	Job Hrs.:	T.T.:	Mileage:
Temp.: H L	Wind: H L	Humid: H L	Sunny Cloudy
No. of pages to this report:		No. of back up Sheets to this report:	

CHAIN OF CUSTODY LOG

GEB REQUISITION 85-47 DACW 33-83-D006

DELIVERY ORDER No. 0026

FRANKLIN FALLS DAM, N.H.

EARTH QUAKE STUDY

DESCRIPTION: JAR SOIL SAMPLES

8 BOXES

CORE BOXES 2

AS SAMPLED DATE:

Donald L Ellison 8/12/85

Delivered	DATE	TIME	/ RECIEVED	DATE	TIME
Donald L Ellison (Mark A. Owen)	8/12/85	8:00	Joseph Colucci	8/12/85	1520

TO NED MATERIALS AND WATER QUALITY LAB
424 TRAPELO RD, WALTHAM, MA. 02254

INSPECTOR:	DATE:	APPROVAL:

APPENDIX D

Mansfield Hollow Dam, CT
Field Logs of Test Borings

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. W.O. 26

Site MANSFIELD HOLLOW LAKE CT.

Page 1 of 29 Pages

Hole No. FD-85-1 Diam. (Casing) 4"

SEE SKETCH ON PAGE 11 OF 29

Co-ordinates: N _____ E _____

Boring Started 4/15/85

Boring Completed 4/19/85

Drilled by ARMY CORP OF ENGINEERS

Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS AND FIELD SOIL CLASSIFICATIONS INSTALL PIEZOMETER

Elevation Top of Hole 232.7 M.S.L.

Total Overburden Drilled 68.5' Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole 164.2 M.S.L.

Total Rock Drilled — Feet

Total Depth of Hole 68.5' Feet

Core Recovered — %

Core Recovered — Ft.: — Diam. — in.

Soil Samples 1-3/8" in. Diam. 26 No.

Soil Samples — in. Diam. — No.

Casing Left in Place 10 Feet

Water Table Depth 26 ft ON 4/19/85, 15 ft ON 4/22/85

Depth From	Depth To	Method of Drilling and Type of Bit Used
0'	10'	CLEANED OUT WITH 4" SPIRAL AUGER
		SAMPLED WITH N RODS AND 1-3/8" SPOON
		THEN MOVED HOLE BECAUSE OF A BOULDER
0'	14.6	4" ROLLER BIT WITH MUD (REVERT)
14.6	68.5	4" FISH TAIL WITH MUD (REVERT

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Boring Location Sketch	Back of Page 11
Overburden Record	Page 2-10
Rock Drilling	Page ____
PIEZOMETER INSTALLATION	Page 12
SPT DATA SHEETS	Page 13-29
	Page ____

Prepared by DONALD L ELLISON
Field Data

Lab. Data

Submitted by _____

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. FD-85-1 Desig. _____ Diam. (Casing) 4"

Co-ordinates: N _____ E _____

Elevation Top of Boring 232.7' M.S.L.
Total Overburden Drilled 68.5' Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring 164.2' M.S.L.
Total Depth of Boring 68.5' Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft: — Diam. — In.
Soil Samples 1-3/8" In. Diam. 26 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 lb
Hammer Drop 30"
Casing Left 10'
Subsurface Water Data SEE Page 11 of 29
Obs. Well 1 (PZ-1)
Drilled By ARMY CORP (MOBILE)
Mfg. Des. Drill FAILING
Inspected By: DONALD ELLISON
Classification By: DONALD ELLISON
Classification By: _____

Boring Started 4/15/85
Boring Completed 4/19/85

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1'	1	1 3/8"	0 – 1.5'	3, 13, 14 / 45%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	Sand: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR GRAVEL, <5% NON PLASTIC FINES, BROWN (SP)
2'			1.5' – 2.5'		CLEANED OUT WITH 4" SPIRAL AUGER	
3'	2	1 3/8"	2.5' – 4'	3, 19, 17 / 35%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR TO ANGULAR GRAVEL, 5-10% NON PLASTIC FINES, BROWN, (SP-SM)
4'			4' – 5'		CLEANED OUT WITH 4" SPIRAL AUGER	

GENERAL REMARKS:
* FOR BLOW PER 1/10 ft REFER TO STANDARD PENETRATION TEST DATA SHEETS, Pages 14-29.
Pages 13 → 17 are recorded in BLOWS PER INCH.

Site: MANSFIELD HOLLOW DAM, CT. | Boring No. FO-85-1 | Page 3 of 29

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
6'	3	1 3/8"	5' – 6.5'	4 12 16 / 40%	SAMPLED WITH 2'x1 3/8" ID SPLIT SPOON	SAND, MEDIUM TO FINE, MOSTLY FINE, 5-10% SUBANGULAR TO SUB-ROUNDED GRAVEL, <5% NON PLASTIC FINES, LIGHT BROW, (SP)
7'			7.5'		CLEANED out with 4" SPIRAL Auger	
8'	4	1 3/8"	9'	13 29 21 / 20%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 10-15% SUBANGULAR TO SUBROUNDED GRAVEL, 10-15% NON PLASTIC FINES, LIGHT BROWN, (SM)
9'			10'		CLEANED Out WITH SPERAL 4" Auger	
11'	5	1 3/8"	11.5'	48 176 482 / 15%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	Silty SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR GRAVEL, 10-20% NONPLASTIC FINES, OCCASIONAL COBBLE, LIGHT BROWN, (SM)
12'			12.4'		ABANDONED FIRST HOLE BECAUSE OF A BOULDER. Move 2.5 ft W. Roller bit DOWN TO 12.4	
13'	6	1 3/8"	13.5'	18 10 5 / 0%	SAMPLED WITH 15 ft of N rods and 2'x1 3/3" SPLIT SPOON	NO SAMPLE OBTAINED, PUSHED A COBBLE OR LARGE PIECE OF GRAVEL

Site: MANSFIELD HOLLOW DAM, CT. | Boring No. FO-85-1 | Page 3 of 29

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
6'	3	1 3/8"	5' – 6.5'	4, 12, 16 / 40%	SAMPLED WITH 2'x1 3/8" ID SPLIT SPOON	SAND, MEDIUM TO FINE, MOSTLY FINE, 5-10% SUBANGULAR TO SUB-ROUNDED GRAVEL, <5% NON PLASTIC FINES, LIGHT BROW, (SP)
7'			7.5'		CLEANED out with 4" SPIRAL Auger	
8', 9'	4	1 3/8"	9'	13, 29, 21 / 20%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 10-15% SUBANGULAR TO SUBROUNDED GRAVEL, 10-15% NON PLASTIC FINES, LIGHT BROWN, (SM)
10'			10'		CLEANED Out WITH SPIRAL 4" Auger	
11'	5	1 3/8"	11.5'	48, 176, 482 / 15%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	Silty SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR GRAVEL, 10-20% NONPLASTIC FINES, OCCASIONAL COBBLE, LIGHT BROWN, (SM)
12'			12.4'		ABANDONED FIRST HOLE BECAUSE OF A BOULDER. Move 2.5 ft W. Roller bit DOWN TO 12.4	
13'	6	1 3/8"	13.5'	18, 10, 5 / 0%	SAMPLED WITH 15 ft of N rods and 2'x1 3/8" SPLIT SPOON	NO SAMPLE OBTAINED, PUSHED A COBBLE OR LARGE PIECE OF GRAVEL

Site: MANSFIELD HOLLOW DAM CT	Boring No. FD-85-1	Page 4 of 29

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
14'			14.1'			
		4"	16.6'		CLEANED OUT WITH 4" ROLLER BIT	
15'	7	1 3/8"	16.1'	14 11 13 / 40%	SAMPLED WITH A rods WITH SPIDER & 2' x 1 3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-15% SUBANGULAR TO SUBROUNDED GRAVEL, <5% NON PLASTIC FINES, REDDISH BROWN, (SP)
16'		4"	17.2'		CLEANED OUT WITH FISH TAIL	
18'	8	1 3/8"	18.7'	27 18 17 / 35%	A Rods & SPIDER & 2' x 1 3/8" I.D. SPLIT SPOON	GRAVELY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-20% SUBANGULAR TO SUBROUNDED GRAVEL, <5% NON PLASTIC FINES, LIGHT GRAY, (SP)
19'		4"	20'		CLEANED OUT WITH 4" FISH TAIL	
21'	9	1 3/8"	21.5'	20 27 23 / 40%	SAMPLED WITH 2' x 1 3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-20% SUBANGULAR TO SUBROUNDED GRAVEL, <5% NON PLASTIC FINES, LIGHT GRAY TO LIGHT BROWN, (SP)
22'						

Site: MANSFIELD HOLLOW DAM, CT

Boring No. FD-85-1

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		4"	22.8'		4" FISH TAIL	
23'	10	1 3/8"	24.3'	28 34 45 / 80%	SAMPLED WITH 2' x 1 3/8" I.D. SPLIT SPOON	SAND, MEDIUM TO FINE, 5-10% SUBANGULAR GRAVEL, <5% NON PLASTIC FINES, GRAYISH BROWN, (SP)
24'		4"	25.3'		4" FISH TAIL	
25'	11	1 3/8"	26.8'	45 49 52 / 85%	SAMPLED WITH 2' x 1 3/8" ID SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 10-15% SUBANGULAR TO ANGULAR GRAVEL, 5-10% NON PLASTIC FINES, GRAYISH BROWN (SP-SM)
26'		4"	27.8'		4" FISH TAIL	
27'	12	1 3/8"	29.3'	49 53 66 / 90%	SAMPLED WITH 2' x 1 3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, <5% SUBANGULAR TO SUBROUNDED GRAVEL, 10-20% NONPLASTIC FINES, GRAY, (SP)
28'		4"	30.2'		4" FISH TAIL	
29'						
30'						

Site: MANSFIELD HOLLOW DAM, CT	Boring No. FD-85-1	Page 6 of 29

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
31'	13	1 3/8"	30.5 – 31.7'	28 32 27 / 60%	SAMPLE WITH 2'x1 3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 10-20% SUBROUNDED TO ROUNDED GRAVEL, <5% NON PLASTIC FINES, GRAYISH BROWN, (SP)
32'		4"	32.5'		CLEANED OUT WITH FISH TAIL, HUNG UP ON BOULDER AT 20 & 30 ft. LOTS OF GRAVEL IN THE HOLE	
33' 34'	14	1 3/8"	34'	27 26 38 / 80%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-20% SUBANGULAR - SUBROUNDED GRAVEL, <5% NONPLASTIC FINES, GRAY, (SP)
35'		4"	35'		CLEANED WITH FISH TAIL WENT THROUGH BOULDER AT 34.5	
36'	15	1 3/8"	36.5'	35 32 24 / 60%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-20% SUBANGULAR TO SUBROUNDED GRAVEL, <5% NONPLASTIC FINES, GRAY, (SP)
37'		4"	37.6'		4" FISH TAIL	
38'	16	1 3/8"	39'	32 39 28 / 60%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-25% SUBANGULAR TO SUBROUNDED GRAVEL, <5% NON PLASTIC FINES, GRAY, (SP)

Site: MANSFIELD HOLLOW DAM, CT	Boring No. FO-85-1	Page 7 of 29

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			39.1'			
40'		4"	40.1'		4" FISH TAIL	
41'	17	1 3/8"	41.6'	29 41 61 / 45%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR TO SUBROUNDED GRAVEL, <5% NON PLASTIC FINES, GRAYISH BROWN, (SP)
42' 43'		4"	43.7'		FISH TAILED THROUGH BOULDERS AT 42.5'-43.2'	
44' 45'	18	1 3/8"	45.2'	17 19 35 / 40%	SAMPLED WITH 2'x1 3/8" I.D. SPLITSPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-20% SUBANGULAR GRAVEL, <5% NONPLASTIC FINES, GRAY, (SP)
46'		4"	46'		4" FISH TAIL	
47'	19	1 3/8"		28 25 29 / 40%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5-10% SUBANGULAR TO SUB ROUNDED GRAVEL, 5-10% NONPLASTIC FINES, GRAY, (SP-SM)

Site: MANSFIELD HOLLOW DAM, CT	Boring No. FD-85-1	Page 8 of 29

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
48'			48.2'			
49'	20	1 3/8"	49.7'	31 29 32 45%	SAMPLED WITH 2' x 1 3/8" I.D SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 15-20% SUBANGULAR TO SUBROUNDED GRAVEL, 5-10% NONPLASTIC FINES, GRAY, (SP-SM)
50' 51' 52'		4"	52.2'		FISH TAILED THROUGH SOME ROCKS AT 50-51.2' + 1 ft OVERWASH BY MISTAKE	
53'	21	1 3/8"	53.7'	62 29 18 60%	SAMPLED WITH 2' x 1 3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR TO SUBROUNDED GRAVEL, <5% NONPLASTIC FINES, GRAY, (SP)
54' 55'		4"	55.1'		FISHED TAILED 4/10 ft OVERWASH MAYBE LESS, THE SPOON FELL IN THE HOLE AND PROBABLY DROVE 2/10 ft. in.	
	22	1 3/8"		53 59 26 35%	SAMPLED WITH 2' x 1 3/8" I.D. SPLIT SPOON	SILTY SAND: MEDIUM TO FINE SAND, MOSTLY FINE, 30-45% NONPLASTIC FINES, GRAY, (SM)

Site: MANSFIELD HOLLOW DAM, CT

Boring No. FD-85-1

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			56.8'			
57'		4"	57.8'		FISH TAIL	
58'	23	1 3/8"	59.3'	15 19 46 20%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	SILTY SAND: FINE SAND, 35-40% NONPLASTIC TO SLIGHTLY PLASTIC FINES, BROWNISH GREY, (SM)
59'						
60'		4"	60.3'		FISH TAIL	
61'	24	1 3/8"	61.8'	25 34 40 40%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON	SILTY SAND: FINE SAND, 20-25% NON PLASTIC FINES, BROWNISH GRAY, (SM)
62'		4"	62.8'		FISH TAIL	
63'	25		64.3'	24 42 33 60%		SILTY SAND: FINE SAND, 15-25% NONPLASTIC FINES, LIGHT GRAY, (SM)
64'						

Site: MANSFIELD HOLLOW DAM, CT	Boring No. FD-85-1	Page 10 of 29

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
65'			65.2'			
66'	26	1 3/8"	66.8'	31 35 44 / 35%	SAMPLED WITH 2'X1 3/8 ID. SPLIT SPOON	SILTY SAND: MEDIUM TO FINE SAND, MOSTLY FINE, 10-15% SUBANGULAR TO SUBROUNDED GRAVEL, 15-25% NON PLASTIC FINES, BLUEISH GRAY, (SM)
67' 68'			68.5'		FISH TAIL TO 67 AND HIT A BOULDER TRIED A ROLLER BIT BUT IT COULDN'T MAKE IT THROUGH	
69'					BOTTOM OF BORING AT 68.5'	

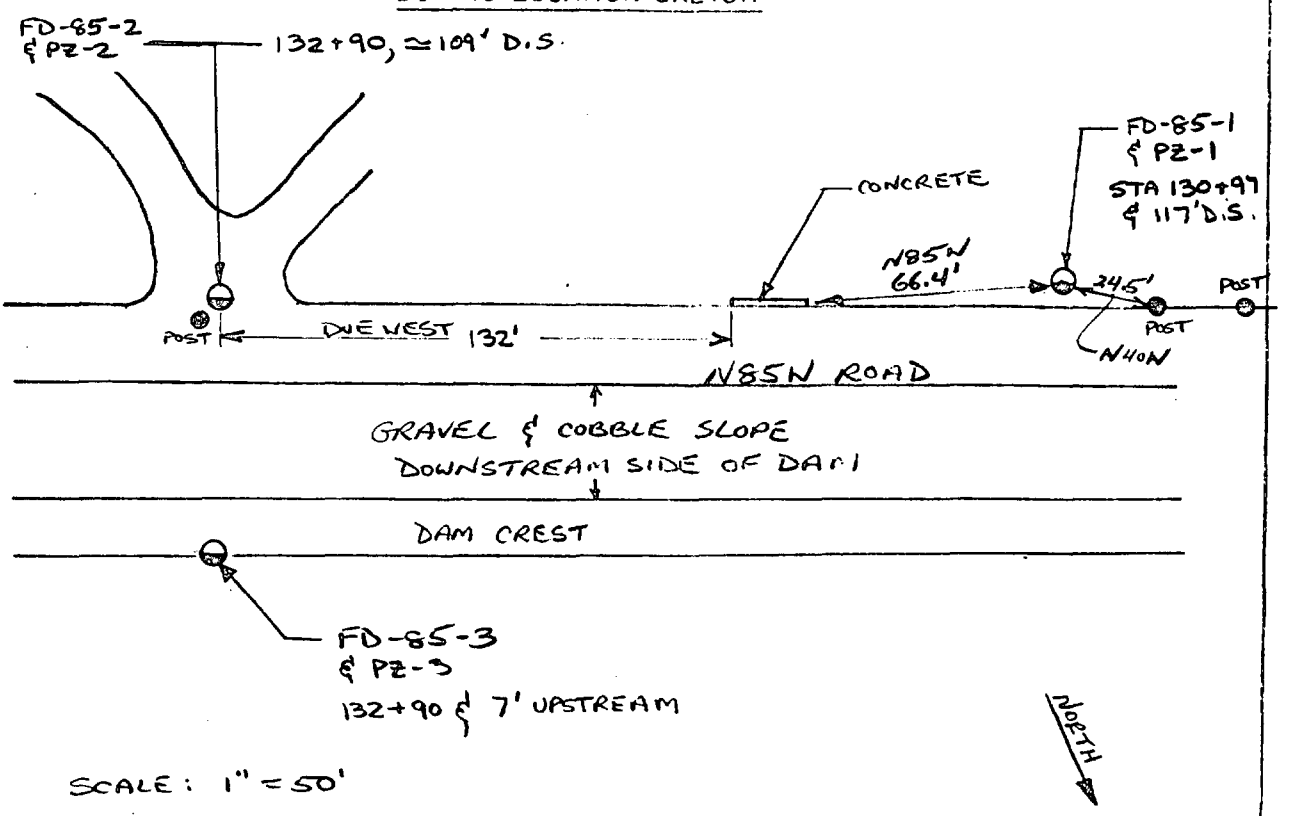
Site: MANSFIELD HOLLOW DAM, CT
Boring No: FD-85-1

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER M.S.L.	REMARKS
4/19	1200	25.6'	68.5'	26'	206.7	WATER DEPTH TAKEN
4/22	1335	8'	68.5'	15'	195.7	INSIDE. PIEZ.

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



SCALE: 1" = 50'

PIEZOMETER INSTALLATION REPORT

PROJECT: MANSFIELD HOLLOW DAM | DATE: 4/19/85

LOCATION (STA): SEE SKETCH ON PAGE 10 of 29 | OFFSET FROM CENTER LINE: 117 D.S. | PIEZ NO.: FD-85-1

PIEZ TYPE: Casagrande 1.5"OD 1"ID, 24"LONG | DEPTH OF PIEZ: 55' | RISER PIPE DIAM: 3/4" PVC SCH 80

PIEZ TIP SET IN (SOIL TYPE): WELLGRADED SAND | SOIL SAMPLE NO.: 22 | BORING DIAM: 4"

METHOD OF INSTALLATION: SET PIEZOMETER IN DRY HOLE AND THEN POURED IN THE SAND

TYPE OF PROTECTION FOR PIEZ: 10 ft LONG 3.5" DIA STEEL RISER PIPE 8 ft IN GROUND AND CEMENT ALONG OUTSIDE | VENT: 1/8" HOLE IN SIDE OF CAP

GROUND ELEV.: 232.7' | ELEV. TOP OF RISER: 234.7' | ELEV PIEZ TIP: 177.6'

FILTER: BUILDING SAND | FROM ELEV: 163.9' | TO ELEV: 232.7'

SEAL: BENTONITE | FROM ELEV: 228.7' | TO ELEV: 232.7'

INSTALLED BY: ARMY CORP | CONTRACT NO.: | FOREMAN: CARL MOON

DATE OF INSTALLATION: 4/19/85 | DATE OF OBSERVATIONS: 4/19/18

METHOD OF TESTING PIEZ.: ELECTRIC PROBE / FALLING HEAD TEST

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
12:06	1	2.3						
12:10	5	6.7						
12:15	10	9.2						
12:35	30	13						

REMARKS:

WATER TABLE WAS AT 26 Ft, TOOK PROBE TO 55 ft to MAKE SURE THE PIEZ WAS CLEAR

DONALD ELLISON
INSPECTOR

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW Page 13 of 29

Hole No. ED-85-1 Date 4/15/85

Depth of Test 0.0' to 1.5' DRIVE 2

Blow	Gage Reading	Penetration per Blow
	0	
1	2"	
2	4"	
3	6"	
4	7"	
5		
6	8"	
7		
8	9"	
9		
10	10"	
11		
12		
13	11	
14		
15		
16	12	
17		
18	13	
19		
20		

	Blows per Inch
0	
	1
	1
6"	1
	1
	2
	2
	2
	3
1'-0"	3
	2
	3
	2
	2
1'-6"	3
	2

Remarks USE LINES MARKED AT THE SCALE ON THE SPATULATED WALL

DRIVE 1 Cont.

Depth of Test 0.0' to 1.5'

Blow	Gage Reading	Penetration per Blow
21	14"	
22		
23	15"	
4		
5	16"	
6		
7		
8	17"	
9		
10	18"	
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 14 of 29

Hole No. FD-85-1 Date 4/4-/85

DRIVE 2

Depth of Test 2.5' to 4.0'

Blow	Gage Reading	Penetration per Blow
	0	
1	2"	
2	4"	
3	6"	
4		
5	7"	
6		
7	8"	
8		
9		
10		
11	9"	
12		
13		
14	10	
15		
16		
17	11	
18		
19		
20		

	Blows per Inch
0	
	1
	1
6"	1
	2
	2
	4
	1
	2
1'-0"	3
	4
	4
	4
	4
	2
1'-6"	3

Remarks

DRIVE 2 CONT.

Depth of Test 2.5' to 4.0'

Blow	Gage Reading	Penetration per Blow
21	12"	
22		
23		
24		
25	13"	
26		
27		
28		
29	14"	
30		
31		
32		
33	15"	
34		
35		
36		
37	16"	
38		
39	17"	
20		
41		
42	18"	

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 15 of 29

Hole No. FD-85-1 Date 4/15/85

DRIVE 3

Depth of Test 5.0' to 6.5'

Blow	Gage Reading	Penetration per Blow
	0	
1	2"	
2	3"	
3	4"	
4	6"	
5	7"	
6		
7		
8	8"	
9		
10		
11	9"	
12	10"	
13		
14	11"	
15		
16	12"	
17		
18	13"	
19		
20		

	Blows per Inch
0	
	1
	1
	1
6"	1
	1
	3
	3
	1
	2
1'-0"	2
	2
	3
	3
	4
	2
1'-6"	2

Remarks

DRIVE 3 CONT.

Depth of Test 5.0' to 6.5'

Blow	Gage Reading	Penetration per Blow
21	14"	
22		
23		
24	15"	
25		
26		
27		
28	16"	
29		
30	17"	
31		
32	18"	
33		
34		
35		
36		
37		
38		
39		
40		

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM

Page 16 of 29

Hole No. FO-85-1

Date 4/15/85

DRIVE 4

Depth of Test 7.5' to 10.0'

Blow	Gage Reading	Penetration per Blow
1	1"	
2		
3	2"	
4		
5	3"	
6		
7		
8	4"	
9	5"	
10		
11		
12		
13	6"	
14		
15		
16		
17	7"	
18		
19		
20		

	Blows per Inch
0	1
	2
	2
	3
	1
6"	4
	4
	6
	5
	5
	4
1'-0"	5
	5
	4
	4
	3
	3
1'-6"	2

Remarks

DRIVE 4 CONT

Depth of Test 7.5' to 10.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3	8"	
4		
5		
6		
7		
8	9"	
9		
10		
11		
12		
13	10"	
14		
15		
16		
17	11"	
18		
19		
20		
4		

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 17 of 29

Hole No. FD 85 1 Date 4/15-/85

DRIVE 4 CONT

Depth of Test 7.5' to 10'

Blow	Gage Reading	Penetration per Blow
41	12	
42		
43		
44		
45		
46	13	
47		
48		
49		
10 50	14	
11 51		
12 52		
13		
14	15	
15		
16		
17	16	
18		
19		
20 60	17	

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

DRIVE 4 CONT

Depth of Test 7.5' to 10'

Blow	Gage Reading	Penetration per Blow
61		
62	18"	
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 18 of 29

Hole No. FD-85-1 Date 4/15/85

DRIVE 5

Depth of Test 10.0' to 11.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3	1.0	
4		
5		
6	2	
7		
8		
9		
10	3	
11		
12		
13	4	
14		
15		
16	5	
17		
18		
19		
20	6	

	Blows per ~~Inch~~ 1/10'
0	3
	6
	10
	13
	16
6"	
	20
	24
	27
	46
	59
1'-0"	
	73
	85
	97
	108
	119
1'-6"	

Remarks THE INCH MARKS ON THE GAGEWERE HARD TO READ SO WE SWITCHED TO THE 1/10 of FOOT MARKS AIREADY ON THE GAGE

DRIVE 6

Depth of Test 12.4' to 13.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3	1	
4		
5		
6		
7	2	
8		
9		
10		
11		
12	3	
13		
14		
15	4	
16		
17		
18	5	
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	3
	4
	5
	3
	3
6"	
	2
	3
	2
	1
	1
1'-0"	
	1
	2
	2
1'-6"	

Remarks ZERO SAMPLE RECOVERY [illegible] WHICH WAS CAUGHT IN [illegible] THE SPOON

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 19 of 29

Hole No. FD-85-1 Date 4/16/85

DRIVE 6 cont

Depth of Test 12.4' to 13.9'

Blow	Gage Reading	Penetration per Blow
1	6	
2		
3		
4	7.2	
5		
6		
7	8	
8	9	
9	10	
10	11	
11		
12	13.5	
13		
14	15	
15		
16		
17		
18		
19		
20		

	Blows per Inch 1/10 ft
0	
6"	
1'-0"	
1'-6"	

Remarks

DRIVE 7

Depth of Test 14.6' to 16.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	[illegible]
	[illegible]
	[illegible]
	[illegible]
	2
6"	
	[illegible]
	[illegible]
	2
	2
	3
1'-0"	
	[illegible]
	3
	3
	2
	2
1'-6"	

Remarks CHANGED FROM (A) RODS to (A) RODS WITH SIDER FOR 4" CASING. THIS ALSO THE FIRST SAMPLE OF THE NEW HOLE THAT WE HAD TO MOVE BECAUSE OF A BOULDER IN THE FIRST HOLE. THE NEW HOLE IS AT (130.87, 117.05)

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 20 of 29

Hole No. FD-85-1 Date [illegible]

DRIVE 8

Depth of Test 17.2' to 18.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	5
	4
	6
	6
	6
6"	
	5
	4
	4
	3
	2
1'-0"	
	5
	5
	4
	4
	3
1'-6"	

Remarks FIRST DRIVE THAT WAS [illegible]ED [illegible] FISH TAIL BIT

DRIVE 9

Depth of Test 20.0' to 21.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	3
	4
	5
	4
	4
6"	
	5
	[illegible]
	4
	5
	4
1'-0"	
	4
	6
	4
	4
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 21 of 29

Hole No. FO-85-1 Date 4/16/85

DRIVE 10

Depth of Test 22.85' to 24.35'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	4
	5
	7
	6
	6
6"	
	7
	7
	6
	7
	7
1'-0"	
	4
	8
	12
	9
	9
1'-6"	

Remarks

DRIVE 11

Depth of Test 25.3' to 26.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	9
	7
	11
	10
	8
6"	
	8
	7
	9
	11
	12
1'-0"	
	11
	11
	12
	10
	8
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 22 of 29

Hole No. FD-85-1 Date 4/16/85

DRIVE 12

Depth of Test 27.8' to 29.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	6
	8
	9
	9
	7
6"	11 11 11
	9
	9
	10
	11
	11
1'-0"	11 11 11
	14
	14
	12
	14
	12
1'-6"	11 11 11

Remarks

DRIVE 13

Depth of Test 30.2' to 31.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	8
	7
	5
	6
6"	11 11 11
	6
	4
	2
	7
	5
1'-0"	11 11 11
	5
	6
	5
	5
	6
1'-6"	11 11 11

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW Page 23 of 29

Hole No. FD-85-1 Date 4/17/85

DRIVE 14

Depth of Test 32.5' to 34'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	6
	2
	6
	5
6"	
	5
	5
	5
	5
	6
1'-0"	
	6
	7
	9
	12
	6
1'-6"	

Remarks

DRIVE 15

Depth of Test 35' to 36.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	6
	7
	7
	8
	7
6"	
	7
	6
	[illegible]
	4
	5
1'-0"	
	5
	5
	4
	4
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW Page 24 of 29

Hole No. ED-85-1 Date 4/17/85

DRIVE 16

Depth of Test 37.6' to 39.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	6
	8
	8
	8
6"	11 11 11 11
	9
	8
	8
	9
	7
1'-0"	11 11 11 11
	8
	9
	5
	3
	5
1'-6"	11 11 11 11

Remarks

DRIVE 17

Depth of Test 40.1' to 41.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	6
	6
	7
	6
	6
6"	11 11 11 11
	6
	6
	8
	11
	10
1'-0"	11 11 11 11
	15
	13
	14
	11
	8
1'-6"	11 11 11 11

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 25 of 29

Hole No. FD-85-1 Date 4/[illegible]/85

DRIVE 18

Depth of Test 43.7' to 45.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ~~ft~~
0	3
	4
	3
	3
	4
6"	
	3
	3
	3
	5
	5
1'-0"	
	10
	7
	6
	4
	6
1'-6"	

Remarks

DRIVE 19

Depth of Test 46' to 47.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ~~ft~~
0	4
	6
	6
	6
	6
6"	
	5
	5
	5
	4
1'-0"	
	4
	5
	5
	5
	10
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 26 of 29

Hole No. FO-85-1 Date 4/17/85

DRIVE 20

Depth of Test 48.2' to 49.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	4
	6
	6
	6
	6
6"	
	7
	6
	6
	5
	5
1'-0"	
	6
	6
	4
	6
	10
1'-6"	

Remarks

DRIVE 21

Depth of Test 52.2' to 53.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	9
	12
	23
	8
	6
6"	
	6
	6
	6
	4
	4
1'-0"	
	3
	4
	4
	4
	3
1'-6"	

Remarks WASHED THROUGH A ROCK AT 50-51.2 AND THEN A FOOT MORE BY MISTAKE

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 27 of 29

Hole No. FD-85-1 Date 4/18/85

DRIVE 22

Depth of Test 55.3' to 56.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	6
	13
	10
	9
	15
6"	
	20
	20
	9
	5
	5
1'-0"	
	6
	5
	5
	5
	5
1'-6"	

Remarks THE SPOON DROPPED INTO THE HOLE FROM 115'- 55.1' WITH 60 FT. ROD. IT MUST HAVE DROPPED IT 2/10 THS FROM THIS

DRIVE 23

Depth of Test 57.8' to 59.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	4
	4
	4
	3
	4
6"	
	4
	[illegible]
	[illegible]
	[illegible]
	2
1'-0"	
	3
	6
	15
	12
	12
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project Mansfield Hollow Dam Page 28 of 29

Hole No. FD-85-1 Date 4/18/85

DRIVE 24

Depth of Test 60.3' to 61.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	4
	4
	5
	6
	6
6"	
	7
	8
	7
	6
	6
1'-0"	
	7
	8
	6
	10
	9
1'-6"	

Remarks

DRIVE 25

Depth of Test 62.8' to 64.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	4
	4
	6
	5
	5
6"	
	9
	11
	[illegible]
	7
	6
1'-0"	
	7
	7
	5
	7
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 29 of 29

Hole No. FD-55-1 Date 4/19/75

DRIVE 26
Depth of Test 65.3' to 66.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ~~ft~~
0	5
	5
	2
	2
	2
6"	WH
	2
	2
	2
	2
	2
1'-0"	WH
	16
	2
	6
	2
	8
1'-6"	WH

Remarks

Depth of Test _____ to _____

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. N.0.26

Site MANSFIELD HOLLOW DAM CT

Page 1 of 21 Pages

Hole No. FD85-2 Diam. (Casing) 4"

Boring Started 4/22/85

Co-ordinates: N SEE SKETCH ON Pg 9 of 21 E

Boring Completed 4/24/85

Drilled by ARMY CORP OF ENGINEERS

Report Submitted

Purpose of Exploration SOIL SAMPLES, FIELD BLOW COUNTS, FIELD DISCRIPTION OF SAMPLES, INSTALL PIEZOMETER

Elevation Top of Hole 236' M.S.L.

Total Overburden Drilled 55 Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole 181' M.S.L.

Total Rock Drilled — Feet

Total Depth of Hole 55 Feet

Core Recovered — %

Core Recovered — Ft.: — Diam. — In.

Soil Samples 1-3/8" In. Diam. 22 Ea.

Soil Samples In. Diam. Ea.

Casing Left in Place 10 Feet

Water Table Depth 0 ft on 4/25/85, 3 ft on 4/26/85

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	20'	4" ROLLER BIT AN REVERT MUD
		AND 22 ft OF CASING
20'	54'	4" FISH TAIL AND REVERT
54'	55'	2 7/8" ROLLER BIT AND REVERT

INDEX

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Boring Location Sketch — Back of Page 9
Overburden Record — Page 2-8
Rock Drilling — Page
PIEZOMETER INSTALLATION — Page 10
SPT DATA SHEETS — Page 11-21
— Page

Prepared by Donald L Ellison
Field Data — Lab. Data

Submitted by

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site MANSFIELD HOLLOW DAM Page 2 of 21 Pages

Boring No. FD-85-2 Desig. _____ Diam. (Casing) _____

Co-ordinates: N SEE SKETCH ON PAGE 8 of 21 E _____

Elevation Top of Boring ≈236' M.S.L.
Total Overburden Drilled 55' Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring ≈181.0' M.S.L.
Total Depth of Boring 55' Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft : — Diam. — In.
Soil Samples 1-3/8" I.D. In. Diam. 22 No.
Soil Samples _____ In. Diam. ____ No.

Hammer Wt. 140 lb Boring Started 4/22/85
Hammer Drop 30"
Casing Left 10 ft Boring Completed 4/24/85
Subsurface Water Data SEE Page 9 of 10
Obs. Well 1 (PZ-2)
Drilled By ARMY CORP (MOBILE)
Mfg. Des. Drill FAILING
Inspected By: DONALD L ELLISON
Classification By: DONALD L ELLISON
Classification By: _____

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1'	1	1-3/8"	1.5'	10 11 17 30%	140 lb HAMMER, 1 3/8" I.D. SPLIT SPOON, 24" LONG + 10 Ft (A) RODS	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR TO SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, BROWN, (SP)
2'		4"	2.5'		4" ROLLER BIT HIT COBBLE OR BOULDER AT 2 ft	
3'	2		3.8'	25 22 78/3"	1-3/8" SPLIT SPOON X 2' REFUSAL AT 3.8' ON COBBLE	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUBANGULAR TO SUB ROUNDED GRAVEL, 5-10% NON PLASTIC FINES, BROWN (SP)
4'					4" ROLLER BIT HOLE WOULDN'T STAY OPEN SO WE DROVE 4" CASING TO 6'	

GENERAL REMARKS:
* FOR BLOWS REFER TO STANDARD PENETRATION TEST DATA SHEETS, PAGES 11 - 21

Site: MANSFIELD HOLLOW DAM, CT | Boring No. FO-85-2 | Page 3 of 21

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
6'	3	1 3/8"	5 – 6'	40 124 60/0" / 25%	REFUSAL AT 6 ft, RODS WERE BOUNCING ON A COBBLE OR BOULDER SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MED TO FINE, 15-20% SUBANGULAR TO SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, BROWN (SP)
		4"	6.7'		WASHED WITH 4" ROLLEBIT HIT COBBLE OR BOULDER AT 6-6.6 ft	
7' 8'	4	1 3/8"	8.2'	20 20 22 / 45%	SAMPLED WITH 2' x 1 3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, 5% ANGULAR TO SUBANGULAR GRAVEL, 10-20% NON PLASTIC FINES, REDDISH BROWN, (SM)
9'		4"	9.2'		WASED WITH 4" ROLLER BIT	
10'	5	1 3/8"	10.7'	14 18 17 / 20%	SAMPLED WITH 2' x 1-3/8" SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 15-20% SUBANGULAR TO SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, REDDISH BROWN (SP)
11'		4"	11.7'		4" ROLLER BIT THROUGH COARSE GRAVELS AND ROCKS PROBABLY PART OF THE TOE DRAIN	
12' 13'	6	1-3/8"	13.2'	9 10 10 / 0%	SAMPLED WITH 2' x 1-3/8" SPLIT SPOON	NO RECOVERY

Site: MANSFIELD HOLLOW DAM, CT	Boring No. FD-85-2	Page 4 of 21

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
14'		4"	15.1'		WASH WITH 4" ROLLER BIT TO 14' BUT HOLE WOULDNT STAY OPEN AND WE WERE LOSING THE DRILLING FLUID. ADDED 4" CASING FOR A TOTAL OF 16 IN GROUND HIT COBBLE AT 14.2 DECIDED TO ROLLER BIT THROUGH IT.	
16'	7	1 3/8"	16.6'	15 18 19 / 0%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	NO RECOVERY
17'		4"	17.8'		4" ROLLER BIT	
18' 19'	8	1 3/8"	19.3'	16 17 14 / 65%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE; MOSTLY COARSE TO MEDIUM, 10-15% SUBANGULAR GRAVEL, 5-10% NON PLASTIC FINES, REDDISH BROWN, (SP)
20'			20.1'		4" ROLLER BIT	
21'	9	1 3/8"	21.6'	12 14 18 / 3%	SAMPLED WITH 2' x 1-3/8" SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5% ANGULAR TO SUB ANGULAR GRAVEL, 10-15% NON-PLASTIC FINES. GREYISH BROWN (SP)
22'						

Site: MANSFIELD HOLLOW DAM, CT

Boring No. FD-85-2

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			22.4'			
23'	10	1 3/8"	23.9'	8 3 3 / 15%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 15-20% NON PLASTIC FINES, REDDISH BROWN (SM)
24'		4"	24.6'		FISH TAIL	
25'	11	1-3/8"	26.1'	15 13 12 / 25%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 15-20% SUBANGULAR TO SUBROUNDED GRAVEL, 10-15% NON PLASTIC FINES, REDDISH BROWN (SP)
26'		4"	26.8'		FISH TAIL	
27' 28'	12	1 3/8"	28.3'	18 16 13 / 50%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM SAND, 15-20% SUBANGULAR TO SUB ROUNDED GRAVEL, 10-15% NONPLASTIC FINES, DARK BROWN, (SP)
29'		4"	29.2'		4" FISH TAIL	
30'	13	1-3/8"		16 12 5 / 7%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 10-15% SUB ROUNDED COARSE SAND, 15-20% NON PLASTIC FINES, BROWN (SM)

Site: MANSFIELD HOLLOW DAM, CT

Boring No. FO-85-2

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
30'		4"	31.6'		FISH TAIL EASY CLEAN OUT	
32' 33'	14	1 3/8"	33.1	11 8 10 25%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, 15-25% NON-PLASTIC FINES, LIGHT BROWN, (SM)
34'		4"	34.3		FISH TAIL	
35'	15	1 3/8"	35.8	6 9 10 30%	SAMPLED WITH 2' x 1-3/8" SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5% SUB ANGULAR GRAVEL, 5-10% NON PLASTIC FINES, GRAY, (SP)
36'		4"	36.8		FISH TAIL	
37' 38'	16	1 3/8"	38.3	8 9 11 35%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5-10% NON PLASTIC FINES, GRAY, (SP)
		4"			FISH TAIL	

Site: MANSFIELD HOLLOW DAM

Boring No. FD-85-2

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			39.6'			
40'	17	1 3/8"	41.1'	6 8 8 / 40%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON.	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5% SUBANGULAR TO SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, GRAY, (SP)
41'		4"	42.1'		4" FISH TAIL	
42'	18	1 3/8"	43.6'	4 6 6 / 30%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MED TO FINE SAND, 5-10% NON PLASTIC FINES, GRAY, (SP)
43'		4"	44.6'		4" FISH TAIL	
44'	19	1 3/8"	46.1'	8 9 9 / 25%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5-10% NON PLASTIC FINES. (SP)
45'		4"	47.2'		4" FISH TAIL	
46'						
47'						

58A(Test)

Boring No. FD-85-2

Site: MANSFIELD HOLLOW DAM CT

Boring No. FD-85-2

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
48'	20	1 3/8"	48.7'	7 10 12 / 30%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE MOSTLY MEDIUM TO FINE, 15-20% NON PLASTIC FINES, GRAY, (SM)
49'		4"	45.7'		FISHTAIL	
50' 51'	21	1 3/8"	51.2'	9 14 18 / 45%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE GRAIN SAND, MOSTLY MEDIUM TO FINE SAND, 15-20% NON PLASTIC FINES, GRAY, (SM)
52' 53'		4"	53'		WASHED THROUGH ROCKS AT 52-53.3 WITH FISHTAIL. RODS WERE BENT FROM ROCKS.	
54'	22	1 3/8"	54.5'	12 15 20 / 45%	SAMPLED WITH 2' x 1 3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5-10% SUB ROUNDED GRAVEL, 10-20% NON PLASTIC FINES, GRAY, (SM)
55'					CHANGE TO 2 7/8" ROLLER BIT TO TRY TO GET THROUGH THE ROCKS. WASHED TO 55 ft AND BENT THE RODS	

BOTTOM OF BORINGS @ 55'

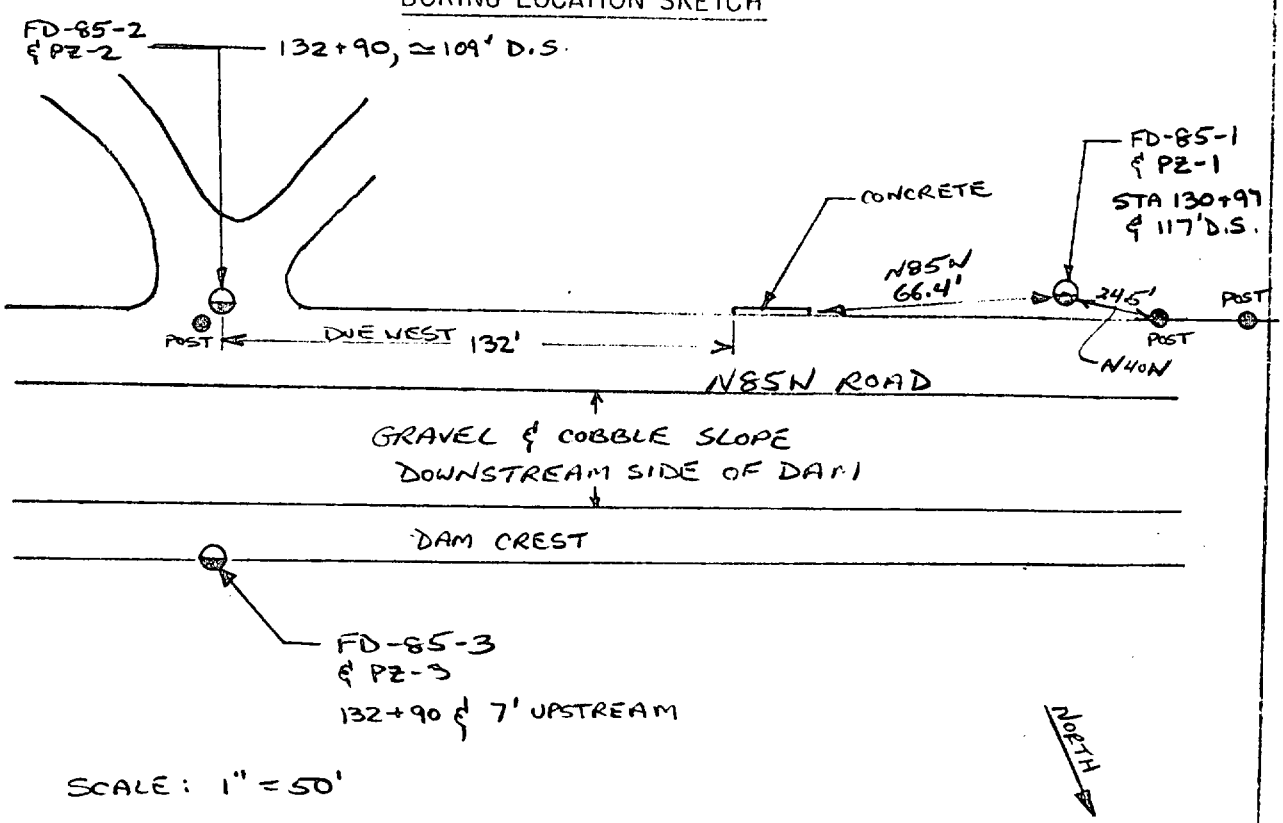
Site: MANSFIELD HOLLOW DAM, CT
Boring No: FD-85-2

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER M.SL.	REMARKS
4/25	1405	8'	55'	0'	2' ABOVE EL 236' MSL	WATER REMAINED AT TOP OF PIEZ
4/26	0710	8'	55'	3'	233'	LEVEL DROPPED OVERNIGHT

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



SCALE: 1" = 50'

PIEZOMETER INSTALLATION REPORT

PROJECT: MANSFIELD HOLLOW DAM CT | DATE: 4/25/85

LOCATION (STA): SEE SKETCH ON PAGE 9 OF 21 | OFFSET FROM CENTER LINE: | PIEZ NO.: FD-85-2 PZ-2

PIEZ TYPE: CASAGRANDE 1.5" OD 1" ID, 24" LONG | DEPTH OF PIEZ: 45' | RISER PIPE DIAM: 3/4" PVC SCH 80

PIEZ TIP SET IN (SOIL TYPE): FINE TO MED SAND | SOIL SAMPLE NO.: 19 | BORING DIAM: 4"

METHOD OF INSTALLATION: SET PIEZ IN THEN POUR IN SAND

TYPE OF PROTECTION FOR PIEZ: 10 ft STEEL PIPE 3.5" DIA, STUCK 8 ft INTO THE GROUND AND CEMENT | VENT: 1/8" HOLE IN SIDE

GROUND ELEV.: ≈ 236' | ELEV. TOP OF RISER: 238' | ELEV PIEZ TIP: 191'

FILTER: OTTAWA SAND | FROM ELEV: 246' | TO ELEV: 234'

SEAL: BENTONITE | FROM ELEV: 234' | TO ELEV: 236'

INSTALLED BY: ARMY CORP MOBILE | CONTRACT NO.: 26 | FOREMAN: CARL MOON

DATE OF INSTALLATION: 4/25/85 | DATE OF OBSERVATIONS: 4/25/85

METHOD OF TESTING PIEZ.: ELETRIC PROBE, FALLING HEAD TEST

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
2:30	0	0.17'						
2:31	1	0.17'						

REMARKS: WATER STAYED AT THE TOP OF THE PIEZOMETE FOR 60 MINUTES & OBSERVED NO FALL IN WATER LEVEL

Don Ellison
INSPECTOR

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 11 of 21

Hole No. FD-85-2 Date 4/22/85

DRIVE 1
Depth of Test 0' to 1.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	2
	2
	2
	2
6"	
	2
	2
	2
	3
	2
1'-0"	
	3
	3
	3
	3
	4
1'-6"	

Remarks

DRIVE 2
Depth of Test 2.5' to 4.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	2
	3
	9
	7
6"	
	3
	[illegible]
	[illegible]
	5
	4
1'-0"	
	14
REFUSAL	60
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 12 of 21

Hole No. FD-85-2 Date 4/22/85

DRIVE 3
Depth of Test 5' to 6.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	4
	4
	4
	13
	15
6"	
	27
	30
	40
	26
	39
1'-0"	
REFUSAL	60
1'-6"	

Remarks

DRIVE 4
Depth of Test 6.7' to 8.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	1
	4
	6
	5
	4
6"	
	4
	4
	4
	4
	4
1'-0"	
	5
	5
	4
	4
	4
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 13 of 21

Hole No. FD 85 2 Date 4/23/85

DRIVE 5

Depth of Test 9.2' to 10.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch 1/10 ft
0	2
	2
	3
	3
	4
6"	
	4
	4
	4
	3
	3
1'-0"	
	3
	3
	3
	4
	4
1'-6"	

Remarks

DRIVE 6

Depth of Test 11.7' to 13.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch 1/10 ft
0	1
	2
	2
	2
	2
6"	
	2
	2
	2
	2
	2
1'-0"	
	3
	2
	1
	2
	2
1'-6"	

Remarks 2 RECOVERY PUSHED A STONE

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 14 of 21

Hole No. FD 85 2 Date 4/22/85

DRIVE 7

Depth of Test 15.1' to 16.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch 1/10 ft
0	2
	2
	4
	4
	3
6"	
	4
	4
	4
	4
	2
1'-0"	
	4
	4
	3
	4
	4
1'-6"	

Remarks ZERO RECOVERY PUSHED A STONE

DRIVE 8

Depth of Test 17.8' to 19.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch 1/10 ft
0	3
	3
	4
	4
	2
6"	
	4
	5
	[illegible]
	2
	3
1'-0"	
	3
	2
	3
	3
	3
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 15 of 21

Hole No. ED-85-2 Date 4/23/85

DRIVE 9
Depth of Test 20.1' to 21.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	2
	2
	3
	3
6"	
	3
	3
	3
	2
	3
1'-0"	
	3
	4
	4
	4
	3
1'-6"	

Remarks

DRIVE 10
Depth of Test 22.4' to 23.9'

Blow	Gage Reading	Penetration per Blow
1	1	
2		
3	2	
4		
5	3.5	
6	4	
7		
8	5	
9	6	
10	7	
11	9.5	
12	11	
13	12.5	
14	15	
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	
	8
6"	
	3
1'-0"	
	3
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 16 of 21

Hole No. FD 85 2 Date 4/24/85

DRIVE 11
Depth of Test 24.6' to 26.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	1
	4
	4
	4
6"	
	3
	3
	2
	3
	2
1'-0"	
	3
	3
	2
	2
	2
1'-6"	

Remarks

DRIVE 12
Depth of Test 26.8' to 28.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	3
	2
	4
	5
	6
6"	
	4
	1
	2
	2
	2
1'-0"	
	3
	2
	3
	2
	3
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW Page 17 of 21

Hole No. FD85 2 Date 4/24/85

DRIVE 13
Depth of Test 29.2' to 30.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch 1/10 ft
0	3
	4
	3
	3
	3
6"	
	3
	3
	2
	3
	2
1'-0"	
	1
	1
	1
	1
	1
1'-6"	

Remarks

DRIVE 14
Depth of Test 31.6' to 33.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch 1/10 ft
0	2
	4
	2
	1
	1
6"	
	2
	1
	[illegible]
	[illegible]
	1
1'-0"	
	2
	2
	2
	2
	2
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project HANSFIELD HOLLOW Page 15 of 21

Hole No. FD-852 Date 4/24/85

DRIVE 15
Depth of Test 34.3' to 35.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ ½ ft
0	1
	2
	1
	1
	1
6"	
	2
	2
	2
	1
	2
1'-0"	
	2
	2
	1
	3
	2
1'-6"	

Remarks

DRIVE 16
Depth of Test 36.8' to 38.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ ½ ft
0	2
	1
	2
	2
	1
6"	
	2
	2
	1
	2
	2
1'-0"	
	2
	2
	3
	2
	2
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 19 of 21

Hole No. FD-85-2 Date 4/24/85

DRIVE 17
Depth of Test 39.6' to 41.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	1
	2
	1
	1
	1
6"	4
	2
	1
	2
	2
	1
1'-0"	4
	2
	2
	1
	2
	1
1'-6"	4

Remarks

DRIVE 18
Depth of Test 42.1' to 43.6'

Blow	Gage Reading	Penetration per Blow
1	1	
2	2	
3	4	
4	5.3	
5	6	
6	7	
7		
8	8	
9	9	
10	10	
11	11	
12		
13	12	
14	13	
15	14	
16	15	
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	↑
	4
	↓
	—
6"	↑
	6
	↓
	—
1'-0"	↑
	6
	↓
	—
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM Page 20 of 21

Hole No. FD-85-2 Date 4/24/85

DRIVE 19
Depth of Test 44.6' to 46.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 Ft
0	2
	1
	2
	1
	2
6"	[illegible]
	1
	2
	2
	2
	2
1'-0"	[illegible]
	1
	2
	2
	2
	2
1'-6"	[illegible]

Remarks

DRIVE 20
Depth of Test 47.2' to 48.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 Ft
0	1
	2
	1
	1
	2
6"	[illegible]
	2
	2
	2
	[illegible]
	2
1'-0"	[illegible]
	2
	2
	2
	3
	2
1'-6"	[illegible]

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project Mansfield Hollow Page 21 of 21

Hole No. FD-85-2 Date 4/24/85

DRIVE 21
Depth of Test 49.7' to 51.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ~~Ft.~~
0	2
	1
	2
	2
	2
6"	
	3
	2
	3
	3
	3
1'-0"	
	3
	3
	4
	4
	4
1'-6"	

Remarks

DRIVE 22
Depth of Test 53' to 54.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ~~Ft~~
0	2
	3
	2
	3
	2
6"	
	4
	3
	3
	3
	3
1'-0"	
	4
	3
	4
	4
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. NO 26

Site MANS FIELD HOLLOW DAM CT — Page 1 of 24 Pages

Hole No. FD-85-3 Diam. (Casing) 4" — Boring Started 4/26/85

SEE SKETCH ON PAGE 12 OF 24

Co-ordinates: N _____ E _____ — Boring Completed 5/3/85

Drilled by ARMY CORP OF ENGINEERS MOBILE DISTRICT — Report Submitted _____

Purpose of Exploration FIELD SAMPLES, BLOW COUNTS, PIEZOMETER INSTALLATION

Elevation Top of Hole 273' M.S.L.
Total Overburden Drilled 77' Feet
Elevation Top of Rock 196' M.S.L.
Elevation Bottom of Hole 196' M.S.L.
Total Rock Drilled 0' Feet
Total Depth of Hole 77 Feet
Core Recovered 0 %
Core Recovered — Ft.: — Diam. — In.
Soil Samples 1 3/8 In. Diam. 22 No.
Soil Samples _____ In. Diam. ____ No.

Casing Left in Place 10 Feet

Water Table Depth 45 ft ON 5/3/85

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	5.9	6" SPIRAL AUGER
5.9	45.2	4" ROLLER BIT WITH REVERT
45.2	58	4" FISH TAIL WITH REVERT
58	77	4" ROLLER BIT WITH REVERT
		ADDED 30 ft OF 4" CASING
		AFTER DRILLING 42 ft.

INDEX

Ground Water	Back of Page 12
Boring Location Sketch	Back of Page 12
Overburden Record	Page 2-11
Rock Drilling	Page ____
PIEZOMETER INSTALLATION	Page 13
SPT DATA SHEETS	Page 14-24
	Page ____

Prepared by Donald L Ellison
Field Data — Lab. Data

Submitted by _____

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Page 2 of 27 Pages

Boring No. FD85-3 Desig. _____ Diam. (Casing) 4"

Co-ordinates: N SEE SKETCH ON PAGE 12 of 24 E _____

Elevation Top of Boring 293.0' M.S.L.
Total Overburden Drilled 77 ft Feet
Elevation Top of Rock 196' M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring 196' M.S.L.
Total Depth of Boring 77 Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft: — Diam. — In.
Soil Samples 1-3/8" In. Diam. 22 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 lb Boring Started 4/26/85
Hammer Drop 28"
Casing Left 10 ft Boring Completed 5/3/85
Subsurface Water Data SEE Page 12 of 24
Obs. Well 1 (PZ3)
Drilled By ARMY CORP (MOBILE)
Mfg. Des. Drill FAILLING
Inspected By: DON ELLISON
Classification By: DON ELLISON
Classification By: _____

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1'	1		1.5'	4-6-11 / 0%	USED 2'x1 3/8" I.D. SPLIT SPOON, NO RECOVERY, TOOK SAMPLE FROM AUGER	ZERO REC'VY, FIRST SAMPLE IS FROM THE AUGER GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIAM TO FINE SAND, 15-20% SUB-ROUNDED GRAVEL, 5-10% NON PLASTIC FINES, BROWN (SP)
2' 3' 4' 5'		6"			STARTED HOLE WITH 6" SPIRAL AUGER TO 5ft. SEALED OFF MUD TUB WITH 5ft OF 6" CASING WITH 3ft IN GROUND. THERE ARE A LOT OF ROCKS. CLEANED OUT THE CASING WITH 6" ROLLER BIT TO 6 ft. THERE WAS A BIG ROCK AT 5ft	

GENERAL REMARKS:
* FOR BLOWS PER 1/10 Ft. REFER TO STANDARD PENETRATION TEST DATA SHEETS, PAGES 14 to 24

Site: MANSFIELD HOLLOW DAM CT

Boring No. FD-85-3

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
			5.4'			
6'	2	1 3/8"	7.4'	30-40-40 / 45%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 5-10% SUBROUNDED GRAVEL, 30-35% NON PLASTIC TO SLIGHTLY PLASTIC FINES, DARK GRAY (SM)
7'						
8'		4"	10.9'		CHANGED TO 4" ROLLERBIT WENT THROUGH MANY COBBLE AND/OR BOULDERS.	
9'						
10'						
11'	3	1 3/8"	12.4'	28-35-52 / 30%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5% SUBROUNDED GRAVEL, < 5% NON PLASTIC FINES, DARK GRAY, (SP)
12'						
13'		4"	14'		4" ROLLER BIT LOT OF ROCKS	

Site: MANSFIELD HOLLOW DAM CT

Boring No. FD-85-3

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
15'			15.8'			
16'	4	1 3/8"	16.8'	40-155 / 20%	ROCK IN TIP OF SPOON SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SAND, MEDIUM TO FINE, MOSTLY MEDIUM TO FINE SAND, 5-10% NON PLASTIC FINES, TANNISH BROWN, (SP)
17'		4"			4" ROLLER BIT SOME ROCKS IN HOLE	
18'						
19'						
20'			20.4'			
	5	1 3/8"	20.8'	180/4 / 25%	REFUSAL 180 FOR 1.4 ft of SAMPLE SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND, COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 25-30% ANGULAR GRAVEL, 5-10% NON PLASTIC FINES, DARK BROWN (SP-SM)
21'		4"			4" ROLLER BIT SOME COBBLES IN THE HOLE	
22'						

Site: MANSFIELD HOLLOW DAM CT.	Boring No. FD-85-3	Page 5 of 13

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
23, 24, 25		4"	26.3		4" ROLLER BIT	
26	6	1 3/8"		30-60 / 40%	REFUSAL AT 26.3 SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE SAND, MOSTLY MEDIUM TO FINE, 20-25% SUB-ROUNDED GRAVEL, 5-10% NON PLASTIC FINES, BROWN (SP)
27, 28, 29, 30		4"	30.3		4" ROLLER BIT	
	7	1 3/8"		45-65 / 35%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON REFUSAL	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 15-20% NON PLASTIC FINES, LIGHT TAN (SM)

Site: MANSFIELD HOLLOW DAM CT	Boring No. FD-85-3	Page 6 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
32'					WASH WITH 4" ROLLER BIT HIT COBBLES AT 34 ft.	
33'		4"				
34'						
35'			35.7'			
36'	8	1 3/8	36.9'	25-40 REF AT 1.2' 40%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON REFUSAL FROM 36.7' TO 36.9	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 10-15% SUBROUNDED GRAVEL, <5% NON PLASTIC FINES, BROWN (SP)
37'					4" ROLLER BIT COBBLES AT 37 ft	
38'		4"				
39'			39.5'			

Site: MANSFIELD HOLLOW DAM CT

Boring No. FD-85-3

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
40'		4"	40.9'			
41'	9	1 3/8"	42.4'	16-36-41 / 40%	FIRST SAMPLE WITH BLOWS PER 1/10 ft. SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% NON PLASTIC FINES, LIGHT BROWN, (SP)
42'						
43'		4"	43.7'		ADDED 30 ft CASING 4" WASHED CASING OUT WITH 4" ROLLER BIT A LOT OF ROCKS FELL IN THE HOLE	
44'	10	1 3/8"	45.2'	41-32-42 / 25%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, < 5% NONPLASTIC FINES, LIGHT BROWN, (SP)
45'						
46'		4"	46.5'		FISHTAIL 4" WENT THROUGH SOME COBBLES	
47'	11	1 3/8"	48'	33-40-39 / 65%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: MEDIUM TO FINE SAND, MOSTLY FINE, 40-45% NON PLASTIC FINES, LIGHT BROWN (SM)
48						

Site: MANSFIELD HOLLOW DAM CT

Boring No. FD-85-3

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
49'		4"	48' – 49.1'		FISH TAIL 4"	
50'	12	1 3/8	49.1' – 50.6'	39-45-45 / 75%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% SUB ROUNDED GRAVEL, 5-10% NON-PLASTIC FINES, LIGHT BROWN, (SP-SM)
51'		4"	50.6' – 51.5'		4" FISH TAIL	
52'	13	1 3/8	51.5' – 53'	44-47-39 / 80%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 40-45% NON PLASTIC FINES, LIGHT BROWN, (SM)
53'		4"	53' – 54'		4" FISH TAIL WASH WAS SLOW, HARD, TIGHT AND ROCKY	
54'	14	1 3/8	54' – 55.5'	30-44-79 / 55%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 15-20% SUBANGULAR GRAVEL, <5% NON PLASTIC FINES, BROWN, (SP)
55'						
56'		4"			4" FISH TAIL VERY SLOW WASH AND A LOT OF ROCKS	

Site: MANSFIELD HOLLOW DAM, CT

Boring No. FD-85-3

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
57'	15	1 3/8"	56.5 – 58'	37-55-58 / 65%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 30-35% SUB ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, BROWN, (SP)
58'		4"	58' – 59.1'		CHANGED TO 4" ROLLER BIT, MANY COBBLES WERE IN THE HOLE RIG CHATTERED FROM 57.5-59 ft	
59'	16	1 3/8"	59.1' – 59.8'	72-60 0.2 ft / 30%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON. REFUSAL FROM 59.6' TO 59.8'	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% NON PLASTIC FINES, BROWN (SP-SM)
60'		4"	59.8' – 61.6'		USED 4" ROLLER BIT, WASH WAS SLOW, HARD, AND TIGHT, WITH SOME LARGE COBBLES	
61'						
62'	17	1 3/8"	61.6' – 62.6'	62-75 / 30%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON. REFUSAL AT 62.6	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 20-25% SUBROUNDED GRAVEL, 25% NON PLASTIC FINES BROWN (SP)
63'		4"	62.6' – 64.2'		USED 4" ROLLER BIT. HIT COBBLES AT 63-64	
64'						
	18	1 3/8"	64.2' – 65'	54-39-66 / 65%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-20% SUBANGULAR GRAVEL, 5-10% NON PLASTIC FINES, BROWN (SP)

Site: MANSFIELD HOLLOW DAM CT

Boring No. FO-85-3

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			65.7'			
66'		4"			4" ROLLER BIT HIT COBBLES AT 65, 65.8, 66.8 & 67.2	
67'			67.2'			
68'	19	1 3/8"	68.1'	50-87/.4ft 5%	SAMPLED WITH 2'x1 3/8" SPLIT SPOON. 87 BLOWS REFUSAL AT 68.1	GRAVELY SAND, COARSE TO FINE, MOSTLY MED TO FINE, 10-15% SUBANGULAR GRAVEL, 5-10% NONPLASTIC FINES, BROWN (SP)
69'		4"	69.7'		4" ROLLER BIT, HIT ROCK AT 68.5 AND 69 ft.	
70'	20	1 3/8"	70.1'	108/.4ft 0%	108 BLOWS REFUSAL AT 70.1	NO RECOVERY
71'		4"			4" ROLLER BIT HIT COBBLE AT 70ft, 71ft, AND AT BEGINING OF WASH. WASH WAS VERY SLOW EVEN WITH 350-400 lb DOWN PRESSURE.	
72'			72.2'			
73'	21	1 3/8"		64-45-52 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE SAND, 10-15% SUBROUNDED GRAVEL, 5-10% NONPLASTIC FINES, DARK BROWN (SP)

Site: MANSFIELD HOLLOW DAM CT	Boring No. FD 85 3	Page 11 of 24

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
			73.7			
74'		4"	74.6'		4" ROLLER BIT, 350 lb DOWN PRESSURE TOOK 20 MIN. TO CUT 9/10 ft.	
75' 76'	22	1 3/8"	76.1	53-45 -45 / 50%	SAMPLED WITH 2' X 1-3/8" I.D. SPLIT SPOON	WEATERED TO FAIRLY CONSOLADATED GNEISS. SOME SAND PRESENT, FINE TO MED GRAIN.
77'		4"	77'		4" ROLLER BIT, WASH WAS SLOW AND BIT STOP CUTTING AT 77 ft. SOUNDED VERY HARD, AND HAD GNEISS FRAGMENTS IN MUD	
78'						

PIEZOMETER INSTALLATION REPORT

PROJECT: MANSFIELD HOLLOW DAM CT | DATE: 5/3/85

LOCATION (STA): SEE SKETCH ON PG 12 of 24 | OFFSET FROM CENTER LINE: | PIEZ NO.: FD-85-3 3

PIEZ TYPE: CASAGRANDE 1.5" O.D. 1" I.D. 24" LONG | DEPTH OF PIEZ: 62 ft | RISER PIPE DIAM: 3/4" SCH 80

PIEZ TIP SET IN (SOIL TYPE): WELL GRADED SAND | SOIL SAMPLE NO.: 17 | BORING DIAM: 4"

METHOD OF INSTALLATION: SET TIP AT 62 ft BACKFILLED WITH SAND, PUT IN BENTONITE BALLS FROM 46 - 38 ft, FILLED REST WITH 90% CEMENT 10% BENTONITE

TYPE OF PROTECTION FOR PIEZ: 10 ft STEEL PIPE 3.5" DIA. PUT 8 ft IN GROUND WITH CEMENT | VENT: 1/8" HOLE ON THE SIDE OF THE CAP

GROUND ELEV.: 273' | ELEV. TOP OF RISER: 274.5' | ELEV PIEZ TIP: 211'

FILTER: OTTAWA SAND | FROM ELEV: 196' | TO ELEV: 227'

SEAL: BENTONITE | FROM ELEV: 227' | TO ELEV: 240'

INSTALLED BY: CARL MOON-ARMY CORP MOBILE | CONTRACT NO.: 26 | FOREMAN: CARL MOON

DATE OF INSTALLATION: 5/3/85 | DATE OF OBSERVATIONS: 5/3/85

METHOD OF TESTING PIEZ.: ELECTRIC PROBE FALLING HEAD TEST

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
11:10	1	5 ft						
11:15	5	8 ft						
11:20	20	8.5 ft						
11:40	30	45 f						

REMARKS: WATER LEVEL WAS AT 45 ft BEFORE THE TEST

DONALD ELLISON
INSPECTOR

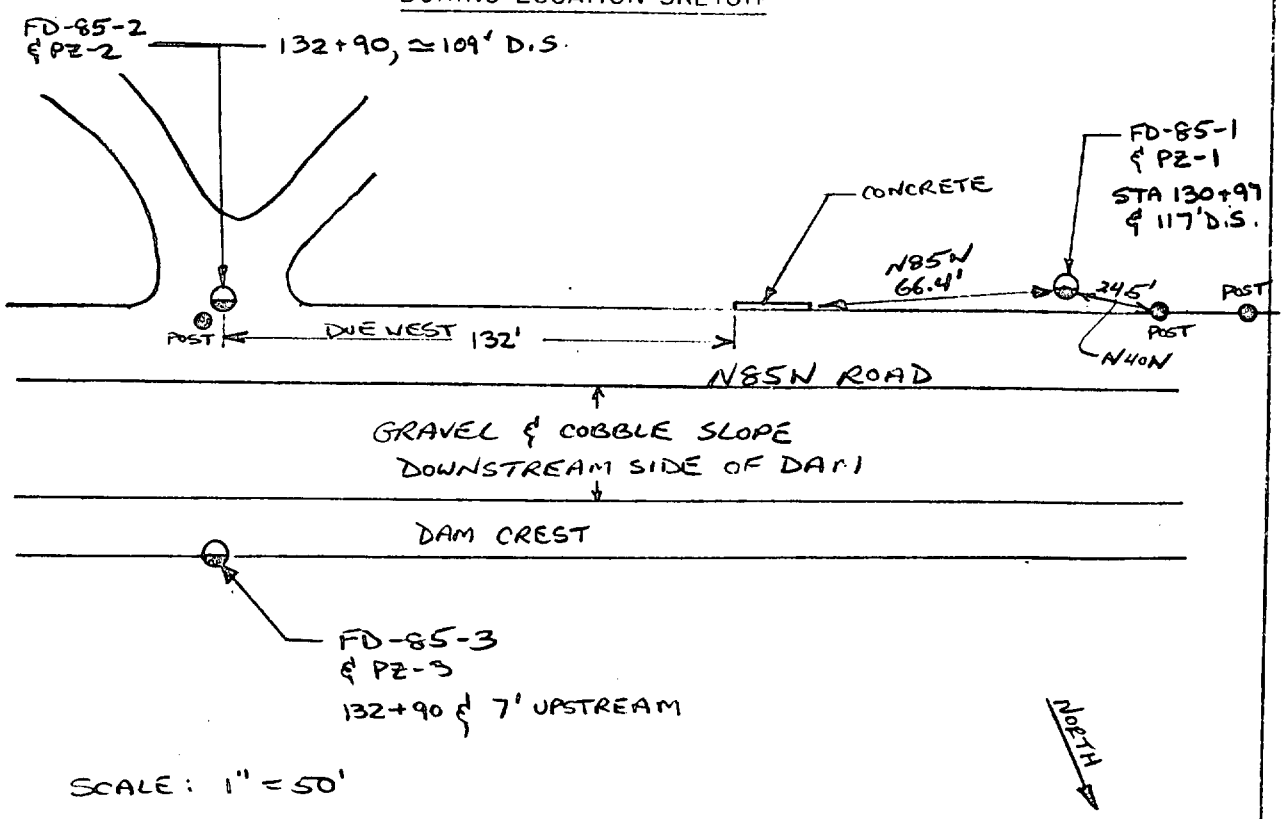
Site: MANSFIELD HOLLOW DAM, CT
Boring No: FD-85-3

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER M.S.L.	REMARKS
5/3	1030	8.5	77	45	228'	

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



SCALE: 1" = 50'

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM, CT Page 14 of 24

Hole No. FD-85-3 Date 4/26/85

DRIVE 1

Depth of Test 0' to 1.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 5/10 ft
0	
	4
6"	
	6
1'-0"	
	11
1'-6"	

Remarks

DRIVE 2

Depth of Test 5.9' to 7.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 5/10 ft
0	
	30
6"	
	40
1'-0"	
	40
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT Page 15 of 24

Hole No. FD-85-3 Date 4/26/85

DRIVE 3
Depth of Test 10.9' to 12.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 5/10 ft
0	
	28
6"	
	35
1'-0"	
	52
1'-6"	

Remarks

DRIVE 4
Depth of Test 15.8' to 16.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 5/10 ft
0	
	40
6"	
	155 REFUSAL
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT Page 16 of 24

Hole No. FD85-3 Date 4/29/85

DRIVE 5
Depth of Test 20.4' to 20.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0		
	180	REFUSAL
6"		
1'-0"		
1'-6"		

Remarks

DRIVE 6
Depth of Test 25.3' to 26.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 5/10 ft	
0		
	30	
6"		
	60	REFUSAL
1'-0"		
1'-6"		

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT. Page 17 of 24

Hole No. FD-85-3 Date 4/29/85

DRIVE 7
Depth of Test 30.3' to 40'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 5/10 ft	Remarks
0		
	45	
6"		
	65	REFUSAL
1'-0"		
1'-6"		

DRIVE 8
Depth of Test 35.7' to 36.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 5/10 ft	Remarks
0		
	25	
6"		
	40	
1'-0"		
	60	REFUSAL
1'-6"		

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT Page 18 of 24

Hole No. FD-85-2 Date 4/29/85

DRIVE 9

Depth of Test 40.9' to 42.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	1
	3
	2
	4
	6
6"	
	6
	6
	7
	7
	10
1'-0"	
	8
	8
	9
	8
	8
1'-6"	

Remarks

4/30/85

DRIVE 10

Depth of Test 43.7' to 45.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	9
	10
	9
	9
	4
6"	
	8
	8
	6
	5
	5
1'-0"	
	7
	8
	7
	9
	11
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

Project MANSFIELD HOLLOW DAM CT Page 19 of 24

Hole No. FD-85-3 Date 4/30/85

DRIVE 11

Depth of Test 46.5' to 48'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	8
	6
	5
	7
	7
6"	
	8
	7
	8
	7
	10
1'-0"	
	9
	8
	7
	7
	8
1'-6"	

Remarks

DRIVE 12

Depth of Test 49.1' to 50.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	15
	8
	5
	6
	5
6"	
	6
	7
	13
	12
	7
1'-0"	
	9
	6
	11
	9
	10
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT Page 20 of 24

Hole No. FD-85-3 Date 4/30/85

DRIVE 13

Depth of Test 51.5' to 53'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	6
	8
	9
	11
	10
6"	
	10
	11
	10
	8
	8
1'-0"	
	9
	8
	8
	8
	6
1'-6"	

Remarks

DRIVE 14

Depth of Test 54' to 55.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	3
	6
	7
	5
	9
6"	
	11
	7
	8
	4
	9
1'-0"	
	9
	13
	14
	29
	14
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT Page 21 of 24

Hole No. FD 85 3 Date 4/30/85

DRIVE 15
Depth of Test 56.5' to 58'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0	4	
	5	
	7	
	6	
	15	
6"		
	10	
	10	
	10	
	13	
	12	
1'-0"		
	12	
	11	
	9	
	14	
	30	REFUSAL
1'-6"		

Remarks

DRIVE 16
Depth of Test 59.1' to 59.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0	7	
	14	
	18	
	14	
	19	
6"		
	26	
	34	REFUSAL
1'-0"		
1'-6"		

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

Project MANSFIELD HOLLOW DAM CT Page 22 of 24

Hole No. ED-85-3 Date 4/30/85

DRIVE 17

Depth of Test 61.6' to 62.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0	9	
	14	
	11	
	15	
	13	
6"		
	12	
	13	
	12	
	14	
	24	REFUSAL
1'-0"		
1'-6"		

Remarks

5/1/85

DRIVE 18

Depth of Test 64.2' to 65.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0	13	
	10	
	13	
	10	
	8	
6"		
	7	
	8	
	7	
	9	
	8	
1'-0"		
	12	
	13	
	13	
	12	
	16	
1'-6"		

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT. Page 23 of 24

Hole No. FD-85-7 Date 5/1/85

DRIVE 19
Depth of Test 67.2' to 68.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0	16	
	17	
	6	
	11	
	10	
6"		
	12	
	12	
	15	
	48	REFUSAL
1'-0"		
1'-6"		

Remarks

DRIVE 20
Depth of Test 69.6' to 70.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0	33	
	22	
	25	
	28	REFUSAL
6"		
1'-0"		
1'-6"		

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project MANSFIELD HOLLOW DAM CT Page 24 of 24

Hole No. FD-85-3 Date 5/4/85

DRIVE Z1

Depth of Test 72.2' to 73.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	15
	10
	11
	12
	16
6"	
	14
	11
	10
	6
	8
1'-0"	
	7
	8
	12
	15
	10
1'-6"	

Remarks

DRIVE Z2

Depth of Test 74.6' to 76.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	6
	14
	14
	11
	8
6"	
	10
	11
	9
	7
	6
1'-0"	
	8
	8
	8
	11
	10
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

APPENDIX E

Franklin Falls Dam, NH
Field Logs of Test Borings

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. N.O. 26

Site FRANKLIN FALLS DAM N.H.

Page 1 of 18 Pages

Hole No. FO-85-1 Diam. (Casing) 4"

Boring Started 5/13/85

SEE LOCATION DIAGRAM ON Pg. 12 OF 18

Co-ordinates: _____ E _____

Boring Completed 5/16/85

Drilled by ARMY CORP OF ENGINEERS

Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS, AND FIELD CLASSIFICATION. INSTALL AND TEST PIEZOMETERS TO DETERMINE PHREATIC SUBSURFACE PORE PRESSURES AND AVERAGE PERMEABILITIES.

Elevation Top of Hole 344.17' M.S.L.

Total Overburden Drilled 74.9 Feet

Elevation Top of Rock 269.27' M.S.L.

Elevation Bottom of Hole 269.27' M.S.L.

Total Rock Drilled 0 Feet

Total Depth of Hole 74.9 Feet

Core Recovered _____ %

Core Recovered _____ Ft.: _____ Diam. _____ In.

Soil Samples 1-3/8" In. Diam. 14 No.

Soil Samples _____ In. Diam. _____ No.

Casing Left in Place NONE Feet

WAS spindle used. If so indicate on also under Sampling operation 2 & 4 used.

Water Table Depth _____

Depth From	Depth To	Method of Drilling and Type of Bit Used
0'	39.1'	DRILLED WITH 3-7/8" ROLLER BIT WITH
		REVERT DRILLING FLUID.
39.1'	43.9'	DRILLED WITH 4" FISH TAIL WITH
		REVERT DRILLING FLUID
43.9'	48'	DRILLED WITH 3-7/8" ROLLER BIT
48'	52.5'	DRILLED WITH 3-7/8" O.D. CORE BARREL
52.5'	55.7'	DRILLED WITH 3-7/8" ROLLER BIT
55.7'	73.4'	DRILLED WITH 4" FISH TAIL

INDEX

Ground Water	Back of Page 12 of 19
Boring Location Sketch	Back of Page 12 of 19
Overburden Record	Page 1-11
Rock Drilling	Page ____
BLOW FOR CONTINUOUS STANDARD PENETRATION TEST	Page 13-19
	Page ____
	Page ____

Prepared by DONALD L ELLISON
Field Data

Lab. Data

Submitted by Charles H. Lawson

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site FRANKLIN FALLS DAM N. H. Page 2 of 10 Pages

Boring No. FD-85-1 Desig. _____ Diam. (Casing) 6"

SEE LOCATION DIAGRAM ON Pg. 12 OF 19

Co-ordinates: N _____ E _____

Elevation Top of Boring 344.17 M.S.L.
Total Overburden Drilled 74.9' Feet
Elevation Top of Rock 269.27 M.S.L.
Total Rock Drilled 0 Feet
Elevation Bottom of Boring 269.27 M.S.L.
Total Depth of Boring 74.9 Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft: — Diam. — In.
Soil Samples 1-3/8" In. Diam. 14 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 lb Boring Started 5/13/85
Hammer Drop 30 IN. Boring Completed 5/16/85
Casing Left NONE
Subsurface Water Data _____ Page 12 of 18
Obs. Well —
Drilled By CARL MOON (ARMY CORP OF ENGINEERS)
Mfg. Des. Drill FAILING (HOLE MASTER)
Inspected By: DONALD L ELLISON
Classification By: ~~DONALD L ELLISON~~
Classification By: _____

FAKE blank all LAB

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1	1 3/8"	0.5'	6-60/.5' 5%	SAMPLED WITH 2' X 1-3/8" I.D. SPLIT SPOON PLUS 10 ft OF (A) RODS. REFUSAL AT 0.5 ft	GRAVELY SAND & COARSE TO FINE, 25-30% SUBANGULAR GRAVEL, 5-10% NON PLASTIC FINES, GRAY, (SP)
1'					USED 5-7/8" ROLLER BIT WASHED THROUGH BOULDER AT 0.5 ft AND AT 4.0 ft.	
2'		6"				
3'						
4'						
5'			5'			

GENERAL REMARKS:
* FOR CONTINUOUS STANDARD PENETRATION TEST SEE PAGES 12 - 18

NED FORM 58(Test)

Boring No. FD-85-1

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-1	Page 3 of 18

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0 SLOUGH	6'	2	1-3/8"	5 – 6.5'	7-13-7 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON + 10ft OF (A) RODS	SILTY SAND: MEDIUM TO FINE SAND, MOSTLY FINE SAND, 20-30% NON PLASTIC FINES, DARK GRAY, (SM)
	7' 8' 9' 10'		5-7/8"	10.1'		WASHED WITH 5-7/8" ROLLER BIT. WENT THROUGH BOULDERS AT 9 ft AND 9.5 ft.	
0.0 SLOUGH	11'	3	1-3/8"	11.6'	3-1-2 / NO RECOVERY	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 10ft (A) ROD	NO RECOVERY, PUSHED A STONE
	12' 13'					WASHED WITH 5-7/8" ROLLER BIT, HIT COBLES AND BOULDERS AT 10' AND LOST DRILLING FLUID. DROVE 20' OF 6" CASING TO SEAL THE LEAK OFF.	

Site: FRANKLIN FALLS DAMS N.H.	Boring No. FD-85-1	Page 4 of 18

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
14'					CONTINUED WASH WITH 5-7/8" ROLLER BIT. HIT GRAVEL COBLES AND BOULDERS	
15'						
16'						
17'						
18'					GRAVEL, COBLES, AND BOULDERS	
19'						
20'						
21'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-1	Page 5 of 18

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			22'		GRAVEL, COBLES, AND BOULDERS	
23'		5-7/8"				
24'			24.4'		END OF 13 MAR 85	END
25'	4	1-3/8"		13-33-25	SAMPLED WITH 2x1-3/8" I.D. SPLIT SPOON WITH 27' of (A) RODS	CLAYEY SAND: COARSE TO FINE, MOSTLY MED TO FINE, 5-10% SUBANGULAR TO SUB ROUNDED GRAVEL, 80-85% SLIGHTLY PLASTIC FINES. DARK GRAY, (SC)
0.1" SLOUGH			25.9'	65%		
26'					WASHED WITH 5-7/8" ROLLER BIT	
27'						
28'		5-7/8"				
29'					HIT COBLES AND BOULDERS FROM 29' TO 32'	
30'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-1	Page 6 of 18

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
	1" = 1'						
				30.5'			
	31'					COBLES & BOULDERS	
			5-7/8"				
	32'						
	33'						
				33.6'			
0.1" SLOUGH	34'	5	1-3/8"	31.4'	35-75 / 0.5" 40%	SAMPLED WITH 2'x 1-3/8" I.D. SPLIT SPOON PLUS 35' OF (A) RODS. REFUSAL AT 34.4'	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 15-25% N.P. TO SLIGHTLY PLASTIC FINES, DARK GREY, (SM)
	35'					WASHED WITH 5-7/8" ROLLER BIT	
	36'		5-7/8"				
	37'						
	38'						
	39'			39'			

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-1	Page 7 of 18

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
0.0' SLOUGH	1" = 1' 40'	6	1-3/8"	39.1 40.6'	11-19 -21 85%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 40' OF (A) RODS	SILTY SAND, MEDIUM TO FINE, MOSTLY FINE, 40-50% NON PLASTIC TO SLIGHTLY PLASTIC FINES, BROWNISH GRAY, (SM)
	41'		4"	41.5'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	42' 43'	7	1-3/8"	43'	13-16 -15 NO RECOVERY	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 42' (A) RODS	NO RECOVERY
	44' 45' 46' 47'		4"			WASHED WITH 4" FISH TAIL HIT COBLES AND BOULDERS AT 43.9 TO 47.5 CHANGED TO 3-7/8" ROLLER BIT TO GET THROUGH COBLES & BOULDERS	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-1	Page 8 of 18

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
48'					HIT A LARGE BOULDER AT 48.0'. USED 3-7/8" O.D. CORE BARREL TO GET THROUGH IT. CORED TO 52.5'	CORE BARREL HAD TWO PICES OF BOULDERS EACH 0.8'-1.0' LONG, AND SOME GRAVEL & COBLES
49'						
				40%		
50'		3-7/8"				
51'						
52'			52.5'		BOTTOM OF BOULDERS	
53'					CHANGED TO 3-7/8" ROLLER BIT MORE GRAVEL, COBLES AND BOULDERS	
54'						
55'			55.7'			
56'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-1	Page 9 of 18

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.15' SLOUGH	56' 57'	8	1-3/8"	57.2'	63-72 -104 90%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 57' OF (A) RODS	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM AND FINE SAND, 10-15% SUBROUNDED GRAVEL, 35-40% NON PLASTIC FINES, REDDISH BROWN, (SM)
	58' 59' 60'		4"	60'		WASHED WITH 4" FISH TAIL TO 58' HIT COBLES AND BOULDERS. CHANGED TO 3-7/8" ROLLER BIT AT 58'	
0.1' SLOUGH	60' 61'	9	1-3/8"	61'	47-91 75%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 60' OF (A) RODS REFUSAL AT 61'	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 35-45% NON PLASTIC FINES, TRACE OF ORGANIC MATERIAL, REDDISH BROWN, (SM)
	62'			62.4'		WASHED WITH 4" FISH TAIL HIT BOULDER OR COBLES AT 61' & 62'	
	63'	10	1-3/8"	63.3'	55-60/0.4' 85%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 63' OF (A) RODS	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 40-50% NON PLASTIC FINES, REDDISH BROWN (SM)
	64'					TOOL USED TO [illegible]	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-1	Page 10 of 18

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				64.8'			
0.2' SLOUGH	65'	11	1-3/8"	65.8'	117 / 5%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 65 ft of (A) RODS. REFUSAL	SILTY SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-20% NON PLASTIC FINES, REDDISH BROWN, (SM)
	66' 67' 68'		4"	68.1'		WASHED WITH 3-7/8" ROLLER BIT. HIT COBBLES OR BOULDERS AT 65', 67.3', 67.9'-68.1'	
0.0' SLOUGH		12	1-3/8"	68.5'	108 / 10%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 68 ft of (A) RODS. REFUSAL	SANDY GRAVEL: COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 25-35% SUBANGULAR GRAVEL, 5-10% NONPLASTIC FINES, BROWN, (SP)
	69' 70'		3-7/8"	70.5'		WASHED WITH 3-7/8" ROLLER BIT	
0.1 SLOUGH	71'	13	1-3/8"	71'	104 / 30%	SAMPLED WITH 2'x1 3/8" I.D. SPLIT SPOON PLUS 70' of (A) RODS. REFUSAL	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 25-35% NON PLASTIC FINES, REDDISH GREY (SM)
	72' 73'		3-7/8"			USED 3-7/8" ROLLER BIT. HIT COBBLES AND BOULDERS AT 72', 72.5', 73-73.3	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-1	Page 11 of 18

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
	73			73.4'			
0.1 SLOUGH	74'	14	1-3/8"	74.4'	100-79 80%	SAMPLED WITH 2"x1-3/8" I.D. SPLIT SPOON PLUS 72 ft OF (A) RODS REFUSAL	SANDY TILL: COARSE TO FINE, MOSTLY FINE, 5-10% SUBANGULAR GRAVEL, 10-20% NON PLASTIC FINES, DARK GREY, (SP)
			3-7/8"	74.9'		WASHED WITH 3-7/8" ROLLER BIT HIT BEDROCK	
	75'					BOTTOM OF THE HOLE	
	76'						
	77'						
	78'						
	79'						

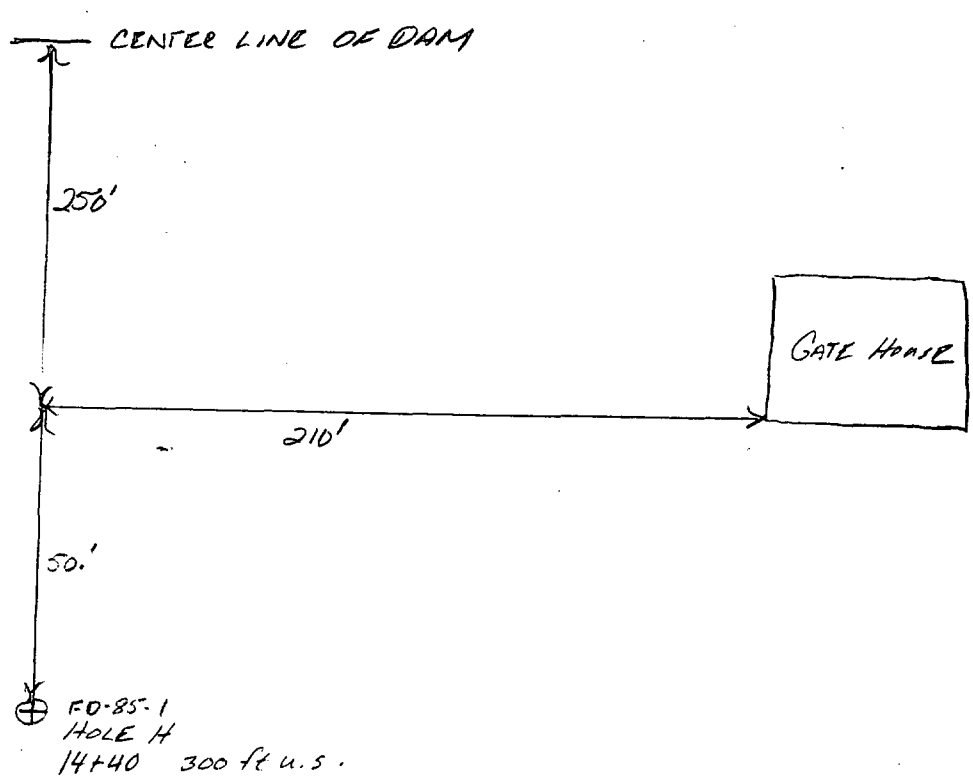
Site: FRANKLIN FALLS DAM N.H.
Boring No: FD-85-1

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
						NO WATER LEVEL
						WAS OBTAINABLE

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Boring No. FD-85-1

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 13 of 19.

Hole No. FD-85-1 Date 5/13/85

DRIVE 1
Depth of Test 0.0' to 0.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 6 Inches
0	
REFUSAL 6"	66
1'-0"	
1'-6"	

Remarks

DRIVE 2
Depth of Test 5.0' to 6.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 6 Inches
0	
6"	7
1'-0"	13
1'-6"	7

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 14 of 14

Hole No. FD-85-1 Date 5/13/85

DRIVE 3

Depth of Test 10.1' to 11.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 6 Inches
0	
6"	3
1'-0"	1
1'-6"	2

Remarks

5/14/85

DRIVE 4

Depth of Test 24.4' to 25.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 6 Inches
0	
6"	13
1'-0"	33
1'-6"	25

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 15 of 19

Hole No. FD-85-1 Date 5/14/85

DRIVE 5

Depth of Test 33.6' to 34.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 6 Inches
0	
6"	35
REFUSAL AT 0.8'	75
1'-0"	
1'-6"	

Remarks

DRIVE 6

Depth of Test 39.1' to 40.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 6 Inches
0	
6"	11
1'-0"	19
1'-6"	21

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 16 of 19

Hole No. FD-85-1 Date 5/14/85

DRIVE 7
Depth of Test 41.5' to 43'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	1
	3
	2
	3
	3
6"	
	3
	4
	4
	3
	2
1'-0"	
	3
	3
	4
	3
	2
1'-6"	

Remarks

4/15/85

DRIVE 8
Depth of Test 55.7' to 57.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	13
	12
	11
	10
	17
6"	
	16
	12
	14
	14
	16
1'-0"	
	20
	19
	25
	18
	22
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 17 of 19

Hole No. FD-85-1 Date 4/15/85

DRIVE 9

Depth of Test 60.0' to 61.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	6
	7
	10
	11
	13
6"	
	13
	15
	17
	16
REFUSAL	30
1'-0"	
1'-6"	

Remarks

DRIVE 10

Depth of Test 62.4' to 63.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	9
	10
	10
	12
	14
6"	
	17
	21
	27
REFUSAL	23
	33
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 18 of 19

Hole No. FD-55-1 Date 4/15/85

DRIVE 11
Depth of Test 64.8' to 65.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	8
	17
	24
	28
REFUSAL	40
6"	
1'-0"	
1'-6"	

Remarks

DRIVE 12
Depth of Test 68.1' to 68.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	19
	29
	25
REFUSAL	35
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H Page 19 of 19

Hole No. FD-85-1 Date 4/15/85

DRIVE 13
Depth of Test 70.5' to 71.0'

Blow	Gage Reading	Penetration per Blow		Blows per ~~Inch~~ 0.1'
			0	
1				11
2				28
3				25
4				25
5			REFUSAL	15
6			6"	
7				
8				
9				
10				
11				
12			1'-0"	
13				
14				
15				
16				
17				
18			1'-6"	
19				
20				

Remarks

DRIVE 14
Depth of Test 73.4' to 74.4'

Blow	Gage Reading	Penetration per Blow		Blows per ~~Inch~~ 0.1'
			0	
1				8
2				18
3				29
4				23
5				22
6			6"	
7				17
8				17
9				17
10				19
11			REFUSAL	20
12			1'-0"	
13				
14				
15				
16				
17				
18			1'-6"	
19				
20				

Remarks

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. N.O.26

Site FRANKLIN FALLS DAM N.H — Page 1 of 19 Pages

Hole No. FD-85-2 Diam. (Casing) 4" — Boring Started 5/17/85

SEE SKETCH ON PAGE 12 OF 19

Co-ordinates: N _____ E _____ — Boring Completed 5/22/85

Drilled by MOBILE DISTRICT (ARMY CORP OF ENGINEERS) — Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS, AND FIELD CLASSIFICATION OF SAMPLES, INSTALL AND TEST PIEZOMETERS TO DETERMINE PHREATIC SUBSURFACE PORE PRESSURES AND AVERAGE PERMEABILITIES.

Elevation Top of Hole 327.71' M.S.L.
Total Overburden Drilled 73.0' Feet
Elevation Top of Rock 254.71' M.S.L.
Elevation Bottom of Hole 254.71' M.S.L.
Total Rock Drilled — Feet
Total Depth of Hole 254.71' Feet
Core Recovered — %
Core Recovered — Ft.: — Diam. — in.
Soil Samples 1-3/8" in. Diam. 14 No.
Soil Samples — in. Diam. — No.

Casing Left in Place 38 Feet

Water Table Depth 24 ft

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	34.5	USED 6" AIR HAMMER THEN DROVE 36' OF
		4" CASING
34.5	38.3	USED 3-7/8" ROLLER BIT WITH REVERT
38.3	73'	USED 4" FISH TAIL WITH REVERT

INDEX

Ground Water	Back of Page 12 of 19
Boring Location Sketch	Back of Page 12 OF 19
Overburden Record PAGES 1 - 10	Page OF 19
Rock Drilling —	Page —
PIEZOMETER REPORT	Page 11 OF 19
BLOWS FOR CONTINUOUS STANDARD	Page .
PENETRATION TESTS	Page 13 TO 19

Prepared by DONALD L ELLISON
Field Data — Lab. Data

Submitted by Charles H. Gross

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site FRANKLIN FALLS DAM N.H. Page 2 of 19 Pages

Boring No. FD-85-2 Desig. _____ Diam. (Casing) 4"

SEE SKETCH ON PAGE OF

Co-ordinates: N _____ E _____

Elevation Top of Boring 327.71' M.S.L.
Total Overburden Drilled 73.0 Feet
Elevation Top of Rock 254.71' M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring 254.71' M.S.L.
Total Depth of Boring — Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft : — Diam. — In.
Soil Samples 1-3/8" In. Diam. 14 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 lb. Boring Started 5/17/85
Hammer Drop 30 IN. Boring Completed 5/22/85
Casing Left 36'
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By MOBILE DISTRICT (ARMY CORP)
Mfg. Des. Drill FAILING HOLE MASTER
Inspected By: DONALD L ELLISON
Classification By: DONALD L ELLISON
Classification By: DONALD L ELLISON

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
1'						
2						
3'					6" AIR HAMMER	ROCK FILL
4'						
5'						

GENERAL REMARKS:
* FOR CONTINUOUS STANDARD PENETRATION TEST SEE PAGES 13 - 19

NED FORM 58 (Test)

Boring No. FD-85-2

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-2	Page 3 of 19

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
6'						
7'						
8'		6" AIR HAMMER			6" AIR HAMMER	ROCK FILL
9'						
10'						
11'						
12'					6" AIR HAMMER	ROCK FILL
13'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-2	Page 4 of 19

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
14'					6" AIR HAMMER	ROCK FILL
15'						
16'						
17'		HAMMER			6" AIR HAMMER	ROCK FILL
18'						
19'		AIR				
20'		6"			6" AIR HAMMER	ROCK FILL
21'						
22'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-2	Page 5 of 9

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
23'						
24'						
25'						
26'		6" AIR HAMMER			6" AIR HAMMER	ROCK FILL
27'						
28'						
29'					6" AIR HAMMER	ROCK FILL
30'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-2	Page 6 of 19

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1"= 31' 32' 33' 34'		6" AIR HAMMER			6" AIR HAMMER	ROCK FILL
			34.5'		BOTTOM OF ROCK FILL	BOTTOM OF ROCK FILL
35' 36' 37' 38'		3-7/8"			DROVE 36 FT. OF 4" CASING WASHED CASING OUT WITH 3-7/8" ROLLER BIT TO 38.3'	
			38.3'			
0.0' SLOUGH	1	1-3/8"		43-65 60%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON PLUS 40.0' (A) RODS	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-2	Page 7 of 19

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				39.3'			
	40'		4"	40.7'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	41'	2	1-3/8"	41.6'	41-68 / 0.4' 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 40' (A) RODS & 2' SPIDER	SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 5-10% NON PLASTIC FINES, LIGHT GRAY, (SP)
	42' 43'		4"	43.5'		WASHED WITH 4" FISH TAIL	
0.3' SLOUGH	44'	3	1-3/8"	44.4'	37-60 55%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 47' (A) RODS	SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 5-10% NON PLASTIC FINES, LIGHT GRAY, (SP)
	45' 46'		4"	46'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH		4	1-3/8"	46.9'	58-74 55%	SAMPLE WITH 2'-1-3/8" I.D. SPLIT SPOON PLUS 47' (A) RODS REFUSAL	SAND: MEDIUM TO FINE, MOSTLY FINE, 5-10% NON PLASTIC FINES BROWNISH GRAY, (SP)
	47'	5					

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD - 85 - 2	Page 8 of 17

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
48'	5 CONT.	1-3/8"	48.4'	27-48 / 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 50' (A) RODS AND SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 3-5% SUBROUNDED GRAVEL, 5-10% NONPLASTIC FINES, BROWNISH GRAY, (SP)
49' 50'		4"	50.9'		WASHED WITH 4" FISH TAIL	
51' 0.05' SLOUGH	6	1-3/8"	51.9'	44-68 / 8%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON, PLUS 50' (A) RODS AND SPIDER REFUSAL	GRAVELY SAND: COARSE TO FINE MOSTLY COARSE AND FINE, 5-10% SUBROUNDED GRAVEL, 10-15% NON PLASTIC FINES BROWNISH GRAY (SP)
52' 53'		4"	53.6		WASHED WITH 4" FISH TAIL	
54' 55'	7	1-3/8"	55.1'	20-25-23 / 5%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON, PLUS 55' (A) RODS AND 2' SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARE TO MEDIUM, 65-75% SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, REDDISH BROWN, (SP)
56'		4"	56'		WASHED WITH 4" FISH TAIL	

Site: FRANKLINE FALLS DAM, N.H	Boring No. FD-85-2	Page 9 of 19

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.1' SLOUGH	57'	8	1-3/8"	56' – 57.5'	14-21-26 / 60%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON PLUS 57' (A) RODS AND 2' SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE AND MEDIUM, 25-35% SUBROUNDED GRAVEL, 5-10% NON-PLASTIC FINES,
	58'		4"	58.5'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	59' – 60'	9	1-3/8"	60.0'	16-18-26 / 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 60' (A) RODS AND 2' SPIDER	GRAVELY SAND, COARSE TO FINE, MOSTLY COARSE AND MEDIUM, 10-10% SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, REDDISH BROWN, (SP)
	61'		4"	61'		WASHED WITH 4" FISH TAIL HIT COBBLES AND BOULDERS AT 60.3'	
0.0 SLOUGH	62'	10	1-3/8"	62.5'	38-31-22 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 60' (A) RODS PLUS 2.0' SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM AND FINE, 10-15% NON PLASTIC FINES, GRAY, (SP)
	63'		3-7/8"	63.5'		WASHED WITH 3-7/8" ROLLER BIT	
	64'	11	1-3/8"		21-31-31 / 80%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 65' (A) RODS WITH 2' SPIDER	SAND: MEDIUM TO FINE, MOSTLY FINE, 10-20% NON PLASTIC FINES, GRAY, (SP)

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-2	Page 10 of 19

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
65'			65'			
66'		3-7/8"	66'		WASHED WITH 3-7/8" ROLLER BIT	
0.0 SLOUGH 67'	12	1-3/8"	67.5'	13-25-29 45%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON PLUS 67' (A) RODS WITH 2' SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 30-35% NON PLASTIC FINES, GRAY (SP)
68'			68.5'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH 69' 70'	13	1-3/8"	70'	11-21-25 55%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 70' (A) RODS AND 2' SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 40-45% NON PLASTIC TO SLIGHTLY PLASTIC FINES, BROWNISH GRAY, (SP)
71'		4"	71'		WASHED WITH 4" FISH TAIL	
72'	14	1-3/8"	72.5'	14-30-55 55%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON PLUS 70.0' (A) RODS WITH 2.0' SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 35-45% NON PLASTIC FINES, BROWNISH GRAY, (SP)
73			73'		WASHED WITH 4" FISH TAIL BOTTOM OF HOLE AT 73' BEDROCK	

PIEZOMETER INSTALLATION REPORT

FD-85-2

PROJECT: FRANKLIN FALLS DAM N.H. DATE: 6/22/85

LOCATION (STA): SEE SKETCH ON PAGE 1 OF 14+75 OFFSET FROM CENTER LINE: 285 ft PIEZ NO.: I

PIEZ TYPE: CASAGRANDE DEPTH OF PIEZ: 58 ft. RISER PIPE DIAM: 3/4" SCH 80 PVC

PIEZ TIP SET IN (SOIL TYPE): GRAVELLY SAND SOIL SAMPLE NO.: 8 BORING DIAM: 4"

METHOD OF INSTALLATION:

TYPE OF PROTECTION FOR PIEZ: 36 ft OF 4" STEEL PIPE VENT: 1/8" HOLE IN THE SIDE OF THE CAP

GROUND ELEV.: 327.71' ft. ELEV. TOP OF RISER: 329.71 ft ELEV PIEZ TIP: 269.71' MSL

FILTER: CONCRETE BUILDING SAND FROM ELEV: 254.71' MSL TO ELEV: 264.3' MSL

SEAL: BENTONITE PELLETS FROM ELEV: 264.3' MSL TO ELEV: 267.71' MSL

INSTALLED BY: MOBILE DISTRICT ARMY CORP OF ENGINEERS CONTRACT NO.: FOREMAN: CARL MOON

DATE OF INSTALLATION: 6/22/85 DATE OF OBSERVATIONS: 6/3/85

METHOD OF TESTING PIEZ.: FALLIN HEAD TEST ?

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
1:10	0	0 ft						
1:12	2	10 ft						
1:15	5	16 ft						
1:20	10	23 ft						

REMARKS: WATER LEVEL IN PIEZOMETER PRIOR TO FALLING HEAD TEST WAS 24 ft.

Donald L Ellison
INSPECTOR

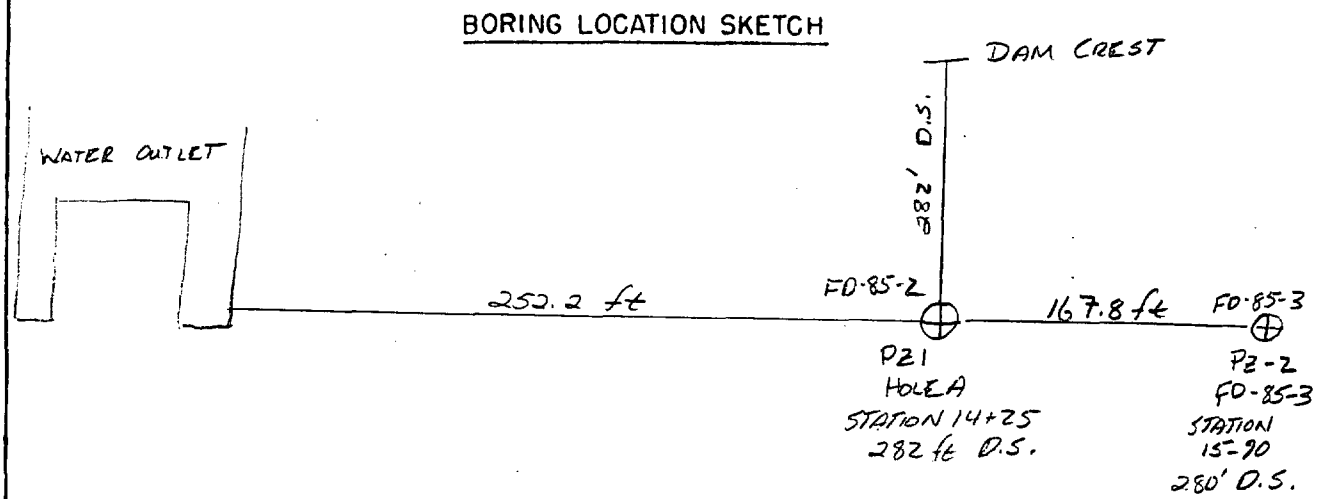
Site: FRANKLIN FALLS DAM N.H.
Boring No: FD-85-2

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
6/10/85	1:00	36 ft	73.0'	24 ft	303.71' MSL	

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Boring No. FD-85-2

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM NH Page 13 of 19

Hole No. FD-85-2 Date 5/20/85

DRIVE 1
Depth of Test 38.3' to 39.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	7
	7
	8
	10
	11
6"	
	11
	11
	12
	14
REFUSAL	17
1'-0"	
1'-6"	

Remarks

DRIVE 2
Depth of Test 40.7' to 41.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	4
	6
	7
	10
	14
6"	
	14
	14
	20
REFUSAL	20
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 14 of 19

Hole No. ED-85-2 Date 5/20/85

DRIVE 3
Depth of Test 43.5' to 44.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	4
	5
	9
	4
	10
6"	
	14
	15
	15
REFUSAL	16
1'-0"	
1'-6"	

Remarks

DRIVE 4
Depth of Test 46' to 46.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	4
	5
	8
	15
	16
6"	
	20
	17
	17
REFUSAL	20
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 15 of 19

Hole No. FD-85-2 Date 5

DRIVE 5

Depth of Test 48.4' to 49.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	3
	4
	5
	8
	7
6"	
	8
	8
	11
	10
	11
1'-0"	
	14
	10
	11
	11
	8
1'-6"	

Remarks

DRIVE 6

Depth of Test 50.9' to 51.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	3
	6
	10
	12
	11
6"	
	12
	12
	16
	16
REFUSAL	12
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 16 of 19

Hole No. FD-85-2 Date 5/21/85

DRIVE 7
Depth of Test 53.6' to 55.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	4
	3
	3
	4
	6
6"	
	5
	5
	5
	5
	5
1'-0"	
	6
	5
	4
	4
	4
1'-6"	

Remarks

DRIVE 8
Depth of Test 56.0' to 57.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	3
	3
	3
	3
	2
6"	
	4
	5
	4
	4
	4
1'-0"	
	5
	5
	6
	5
	5
1'-6"	

Remarks

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM NH, Page 17 of 19

Hole No. FO-85-2 Date 5/21/85

DRIVE 9
Depth of Test 58.5' to 60.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	3
	3
	3
	4
	3
6"	
	2
	3
	4
	4
	5
1'-0"	
	4
	6
	5
	6
	5
1'-6"	

Remarks

DRIVE 10
Depth of Test 61' to 62.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	5
	8
	8
	8
	9
6"	
	10
	7
	6
	4
	4
1'-0"	
	4
	4
	5
	4
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 18 of 19

Hole No. FD-85-2 Date 5/21/85

DRIVE 11
Depth of Test 63.5' to 65'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	3
	4
	4
	4
	6
6"	
	6
	5
	6
	7
	7
1'-0"	
	6
	7
	6
	6
1'-6"	6

Remarks

DRIVE 12
Depth of Test 66.0' to 67.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	2
	2
	3
	3
	3
6"	
	4
	6
	5
	5
	5
1'-0"	
	5
	6
	6
	6
1'-6"	6

Remarks

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 19 of 19

Hole No. FD-85-2 Date 5/21/85

DRIVE 13
Depth of Test 68.5' to 70.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	2
	2
	2
	2
	3
6"	
	3
	4
	5
	5
	4
1'-0"	
	5
	5
	5
	5
	5
1'-6"	

Remarks

DRIVE 14
Depth of Test 71.0' to 72.5

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 0.1'
0	3
	2
	3
	3
	3
6"	
	4
	5
	5
	8
	8
1'-0"	
	9
	9
	12
	15
	10
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. N.O. 26

Site FRANKLIN FALLS DAM N.H.

Page 1 of 24 Pages

Hole No. FD-85-3 Diam. (Casing) 4"

SEE SKETCH ON PAGE 14 OF 24

Co-ordinates: N _____ E _____

Boring Started 5/28/85

Boring Completed 6/6/85

Drilled by MOBILE DISTRICT

Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, AND BLOW COUNTS, FIELD CLASSIFICATION OF SAMPLES, INSTALL AND TEST PIEZOMETERS TO DETERMINE PHREATIC SUBSURFACE PORE PRESSURES AND AVERAGE PERMEABILITIES,

Elevation Top of Hole 329.24' M.S.L.

Total Overburden Drilled 90.0 Feet

Elevation Top of Rock 239.24' M.S.L.

Elevation Bottom of Hole 239.24' M.S.L.

Total Rock Drilled — Feet

Total Depth of Hole 239.24' Feet

Core Recovered — %

Core Recovered — Ft.: — Diam. — in.

Soil Samples 1-3/8" in. Diam. 20 No.

Soil Samples — in. Diam. — No.

Casing Left in Place 36' of 4" Feet

Water Table Depth 24 ft

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	35	6" AIR HAMMER
35	49.1	USED 3-7/8" ROLLER BIT AND REVERT
49.1	87.6	USED 4" FISH TAIL AND REVERT
87.6	90	USED 3-7/8" ROLLER BIT

Index

Ground Water	Back of Page	14 of 24
Boring Location Sketch	Back of Page	14 of 24
Overburden Record PAGES 1-12	Page	OF 24
Rock Drilling —	Page	—
PIEZOMETER RECORD	Page	13 OF 24
BLOWS FOR CONTINUOUS STANDARD PENETRATION TESTS	Page	14 TO 24

Prepared by DONALD L ELLISON
Field Data

Submitted by Charles W. Gross

Lab. Data

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. FD-85-3 Desig. _____ Diam. (Casing) 4"
Co-ordinates: N _____ E _____
SEE SKETCH ON PAGE 14 OF 24

Elevation Top of Boring 329.24' M.S.L.
Total Overburden Drilled 90.0 Feet
Elevation Top of Rock 239.24' M.S.L.
Total Rock Drilled _____ Feet
Elevation Bottom of Boring 239.24' M.S.L.
Total Depth of Boring 90.0 Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft: — Diam. — In.
Soil Samples 1-3/8" In. Diam. 20 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 lb Boring Started 5/28/85
Hammer Drop 30 IN. Boring Completed 6/6/85
Casing Left 38 ft
Subsurface Water Data Page 14 Page 0F24
Obs. Well Page 13 OF 24
Drilled By MOBILE DISTRICT ARMY CORP
Mfg. Des. Drill FAILLING HOLE MASTER
Inspected By: DONALD L ELLISON
Classification By: DONALD L ELLISON
Classification By: [illegible]

DEPTH 1"= 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
1'						
2'						
3'						
4'					6" AIR HAMMER	ROCK FILL
5'						

GENERAL REMARKS: * FOR CONTINUOUS STANDARD PENETRATION TEST SEE PAGES 15-24

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 3 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
6'					6" AIR HAMMER	ROCK FILL
7'						
8'						
9'						
10'						
11'						
12'					6" AIR HAMMER	ROCK FILL
13'						

Site: FRANKLIN FALLS DAM N. H.	Boring No. FD-85-3	Page 4 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
14'					6" AIR HAMMER	ROCK FILL
15'						
16'						
17'						
18'						
19'						
20'					6" AIR HAMMER	ROCK FILL
21'						
22'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 5 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
23'					6" AIR HAMMER	ROCK FILL
24'						
25'						
26'						
27'						
28'					6" AIR HAMMER	ROCK FILL
29'						
30'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 6 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
31'					6" AIR HAMMER	ROCK FILL
32'						
33'					6" AIR HAMMER	ROCK FILL
34'					DROVE 36' OF 4" PROTECTIVE PIPE AND WASHED TO 40' WITH 3-7/8" ROLLER BIT.	
35'			35'		BOTTOM OF ROCK FILL	BOTTOM OF ROCK FILL
36'						
37'					WASHED WITH 3-7/8" ROLLER BIT	
38'					HIT COBBLES AT 37ft	
39						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 7 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
40'			40.1'		WASHED WITH 4" FISH TAIL. HIT SOME COBBLES AT 40'	
0.0 SLOUGH 41'	1	1-3/8"	41.6'	17-23 -23 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 40' (A) RODS AND 2' SPIDER.	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10 % NON PLASTIC FINES, LIGHT BROWN (SP)
42'		4"	42.6'		WASHED WITH 3-7/8" ROLLER BIT, HIT SOME COBBLES AND GRAVEL	
43' 0.0 SLOUGH 44'	2	1-3/8"	44.1'	17-27 -31 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 40' (A) RODS PLUS 2' SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 2-3% SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, LIGHT BROWN (SP)
45'		3-7/8"	45.1'		WASHED WITH 3-7/8" ROLLER BIT HIT SOME COBBLES AND GRAVEL	
0.0 SLOUGH 46'	3	1-3/8"	46.6'	16-20 -21 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 45' (A) RODS PLUS 2' SPIDER	SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 2-3 % SUB ANGULAR GRAVEL, 5-10 % NON PLASTIC FINES, LIGHT BROWN, (SP)
47'		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT HIT SOME GRAVEL AND COBLES	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 8 of 24

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.1' SLOUGH	48' 49'	4	1-3/8"	47.6' 49.1'	17-15-19 50%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 45 ft (A) RODS WITH 2 ft SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 10-15% SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, REDDISH BROWN, (SP)
	50'		4"	50.1		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	51'	5	1-3/8"	51.6'	14-15-16 20%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 50' (A) RODS PLUS 2.0' SPIDER.	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 5-15% SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, REDDISH BROWN (SP)
	52'			52.4'		WASHED WITH 4" FISH TAIL	
0.2' SLOUGH	53'	6	1-3/8"	53.9'	16-23-27 15%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 53 ft (A) ROD PLUS 2ft SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 10-15% SUB-ROUNDED GRAVEL, 5-10% NON PLASTIC FINES, REDDISH BROWN, (SP)
	54' 55'		4"	55.1'		WASHED WITH 4" FISH TAIL	
0.2 OVER WASH	56'	7	1-3/8"		13-15-15- 20%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 55 ft (A) RODS PLUS 2ft SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM AND FINE, 3-5% SUBROUNDED GRAVEL, 5-10% NONPLASTIC FINES, GRAY, (SP)

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 9 of 24

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
				56.6'			
	57'		4"	57.6'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	58' 59'	8	1-3/8"	59.1'	11-13-12 20%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON WITH 57 ft (A) RODS PLUS 2 ft SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% NON PLASTIC FINES, GRAY, (SP)
	60'		4"	60.1'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	61'	9	1-3/8"	61.6'	12-13-11	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON WITH 60 ft (A) RODS PLUS 2 ft SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM TO FINE, 5-10% NONPLASTIC FINES, GRAY, (SP)
	62'		4"	62.6'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	63' 64'	10	1-3/8"	64.1	12-13-15 50%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON WITH 63 ft (A) RODS PLUS 2 ft SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 15-25% SUB-ROUNDED GRAVEL, 5-10% NON PLASTIC FINES, GRAY, (SP)
						WASHED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 10 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
65'			65.1'			
0.0 SLOUGH 66'	11	1-3/8"	66.6'	10-15 -15 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 65 ft (A) RODS AND 2 ft SPIDER	GRAVELY SAND & COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 20-25% SUB ROUNDED GRAVEL, 10-15% NON PLASTIC FINES, GRAY (SP)
67'		4"	67.1'		WASHED WITH 4" FISH TAIL	
68' 0.1' SLOUGH 69'	12	1-3/8"	69.1'	15-19 -17 50%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 67 ft (A) ROD PLUS 2' SPIDER	GRAVELY SAND & COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 15-20% SUBROUNDED GRAVEL, 5-10% NON PLASTIC FINES, GRAY, (SP)
70'		4"	70.1'		WASHED WITH 4" FISH TAIL	
71'	13	1-3/8"	71.6'	22-21 -25 30%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 70 ft (A) RODS PLUS 2 ft SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE TO MEDIUM SAND, 20-25% SUBROUNDED GRAVEL, 10-15% NON PLASTIC FINES, GRAY, (SP)
72'		4"	72.7'		WASHED WITH 4" FISH TAIL	
73'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-3	Page 11 of 24

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
0.1' OVER WASH	1" = 1' 74'	14	1-3/8"	74.2'	19-31 -31 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 73 ft (A) RODS PLUS 2 ft SPIDER	SAND & COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 5-10 % NON PLASTIC FINES, GRAYISH BROWN, (SP)
	75'		4"	75.3'		WASHED WITH 4" FISH TAIL	
0.1' OVER WASH	76'	15	1-3/8"	76.8	17-27 -29	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 75 ft (A) RODS PLUS 2 ft SPIDER	SAND & COARSE TO FINE, MOSTLY MEDIUM TO FINE, 3-5 % SUB ANGULAR GRAVEL, 5-10% NON PLASTIC FINES, GRAYISH BROWN, SP
	77'			77.6'		WASHED WITH 4" FISH TAIL	
0.2' SLOUGH	78' 79'	16	1-3/8"	79.1'	23-34 -39 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 77 ft (A) RODS PLUS 2 ft SPIDER	SILTY SAND & COARSE TO FINE, MOSTLY MEDIUM TO FINE, 15-25 % NON PLASTIC FINES, BROWNISH GRAY. (SP-SM)
	80'		4"	80.1'		WASHED WITH 4" FISH TAIL HIT SOME COBBLES AT 79.9 ft	
0.0' SLOUGH	81'	17	1-3/8"		30-26 -25 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 80 ft (A) ROD WITH 2 ft SPIDER	GRAVELY SAND & COARSE TO FINE, MOSTLY COARSE TO MEDIUM, 25-30 % SUB-ROUNDED GRAVEL, 5-10 % NON PLASTIC FINES, BROWNISH GREY, (SP)

Site: FRANKLIN FALLS DAM N.H	Boring No. FD-85-3	Page 12 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			81.6'			
82'		4"	82.7'		WASHED WITH 4" FISH TAIL, HIT GRAVEL AND BOULDERS AT 82 ft.	
83' 0.1 OVER WASH 84'	18	1-3/8"	84.2'	25-38-53 60%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 83 ft (A) RODS PLUS 2 ft SPIDER	SAND & MEDIUM TO FINE, MOSTLY FINE, 5-10% NON-PLASTIC FINES, LIGHT BROWN (SP)
85'		4"	85.1'		WASHED WITH 4" FISH TAIL	
86'	19	1-3/8"	86'	33-60 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 85 ft (A) RODS PLUS 2 ft SPIDER	SAND & MEDIUM TO FINE, MOSTLY FINE, 15-20% NON PLASTIC FINES, LIGHT BROWN, (SP-SM)
0.1' OVER WASH 87'		4"	87.6'		WASHED WITH 4" FISH TAIL	
88' 0.0 SLOUGH 89'	20	1-3/8"	89.1'	22-44-56 40%	SAMPLED WITH 2-1-3/8" I.D. SPLIT SPOON WITH 87 ft (A) RODS PLUS 2 ft SPIDER	SAND & MEDIUM TO FINE, 15-20% NON-PLASTIC FINES, LIGHT BROWN, (SP-SM)
90'		3-7/8"	90'		WASHED WITH 3-7/8" ROLLER BIT BOTTOM OF HOLE	

PIEZOMETER INSTALLATION REPORT

FD-85-3

PROJECT: FRANKLIN FALLS DAM N.H. DATE: 6/6/85

LOCATION (STA): 15+90 OFFSET FROM CENTER LINE: 280 ft D.S. PIEZ NO.: 1

PIEZ TYPE: CASAGRANDE DEPTH OF PIEZ: 77 ft RISER PIPE DIAM: 3/4" SCH 80 PVC

PIEZ TIP SET IN (SOIL TYPE): SAND SOIL SAMPLE NO.: 15 & 16 BORING DIAM: 4"

METHOD OF INSTALLATION:

TYPE OF PROTECTION FOR PIEZ: 38 ft 4" STEEL PIPE WITH 2 ft STICK UP VENT: 1/8" HOLE IN THE SIDE OF THE CAP

GROUND ELEV.: 329.24' MSL ELEV. TOP OF RISER: 331.24' MSL ELEV PIEZ TIP: 252.24' MSL

FILTER: CONCRETE SAND WASHED FROM ELEV: 249.24' MSL TO ELEV: 290.24' MSL

SEAL: BETONITE SEALS AT: 251'-249.24' & 290.24'-293' FROM ELEV: 251' MSL 290.24' MSL ? TO ELEV: 249.24' MSL 293' MSL

INSTALLED BY: MOBILE DISTRICT CONTRACT NO.: ~~[illegible]~~ FOREMAN: CARL MOON

DATE OF INSTALLATION: 6/6/85 DATE OF OBSERVATIONS: 6/6/85

METHOD OF TESTING PIEZ.: Falling Head Test

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
12:30	0	0						
12:32	2	7.5 ft.						
12:35	5	26.0 ft						
12:40	10	26.2 ft						
1:00	30	26.2 ft						

REMARKS: WATER LEVEL IN PIEZOMETER PRIOR TO FALLING HEAD TEST WAS 26.3 ft

DONALD L ELLISON
INSPECTOR

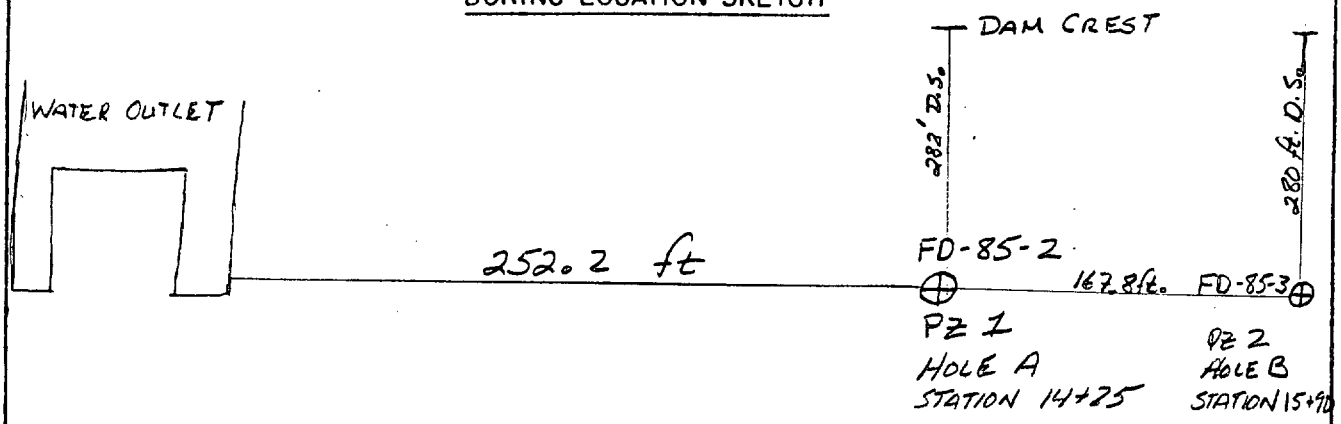
Site: FRANKLIN FALLS DAM N.H.
Boring No: FD-85-3

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
6/10	12:20	36 ft.	90 ft	26.3 ft	302.94 MSL	

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Boring No. FD-85-3

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 15 of 24

Hole No. FD-85-3 Date 6/4/85

DRIVE 1

Depth of Test 40.1' to 41.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	2
	3
	2
	4
	6
6"	
	6
	4
	4
	7
	6
1'-0"	
	6
	7
	6
	6
	6
1'-6"	

Remarks

DRIVE 2

Depth of Test 42.6' to 44.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	2
	3
	2
	4
	6
6"	
	6
	4
	4
	7
	6
1'-0"	
	6
	7
	6
	6
	6
1'-6"	

Remarks

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 16 of 24

Hole No. FD-85-3 Date 6/4/85

DRIVE 3

Depth of Test 45.1' to 46.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	4
	4
	3
	2
	3
6"	
	4
	4
	4
	4
	4
1'-0"	
	4
	5
	5
	3
	4
1'-6"	

Remarks

DRIVE 4

Depth of Test 47.6' to 49.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	4
	4
	3
	3
	3
6"	
	3
	3
	3
	3
	3
1'-0"	
	3
	4
	4
	4
	4
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 17 of 24

Hole No. FD-85-3 Date 6/4/85

DRIVE 5
Depth of Test 50.1' to 51.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	3
	3
	3
	3
6"	
	3
	3
	3
	3
	3
1'-0"	
	3
	3
	3
	3
	4
1'-6"	

Remarks

DRIVE 6
Depth of Test 52.4' to 53.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft Inch
0	4
	3
	3
	3
	3
6"	
	4
	4
	5
	5
	5
1'-0"	
	5
	5
	6
	6
	5
1'-6"	

Remarks

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 18 of 24

Hole No. FD-85-3 Date 6/4/85

DRIVE 7
Depth of Test 55.1' to 56.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	2
	3
	2
	3
	3
6"	
	3
	2
	4
	3
	3
1'-0"	
	3
	3
	3
	3
	3
1'-6"	

Remarks

DRIVE 8
Depth of Test 57.6' to 59.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	2
	1
	3
	2
	3
6"	
	2
	3
	2
	3
	3
1'-0"	
	3
	2
	2
	2
	3
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 19 of 24

Hole No. FD-85-3 Date 6/4/85

DRIVE 9
Depth of Test 60.1' to 61.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	2
	2
	3
	3
	2
6"	
	3
	3
	2
	3
	2
1'-0"	
	3
	2
	3
	3
	3
1'-6"	

Remarks

DRIVE 10
Depth of Test 62.6' to 64.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	2
	2
	3
	2
	3
6"	
	2
	3
	3
	3
	2
1'-0"	
	3
	3
	3
	3
	3
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 20 of 24

Hole No. FD-85-3 Date 6/4/85

DRIVE 11
Depth of Test 65.1' to 66.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	3
	3
	3
	3
6"	
	4
	4
	4
	3
	4
1'-0"	
	3
	4
	4
	3
	3
1'-6"	

Remarks

DRIVE 12
Depth of Test 67.6 to 69.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	3
	3
	3
	3
6"	
	4
	4
	4
	3
	4
1'-0"	
	3
	4
	4
	3
	3
1'-6"	

Remarks

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 21 of 24

Hole No. FD-85-3 Date 6/4/85

DRIVE 13

Depth of Test 70.1 to 71.6

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	4
	4
	4
	5
	5
6"	
	4
	5
	4
	4
	4
1'-0"	
	4
	5
	5
	5
	6
1'-6"	

Remarks

DRIVE 14

Depth of Test 72.7' to 74.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	4
	4
	4
	4
6"	
	7
	6
	5
	5
	6
1'-0"	
	7
	6
	7
	6
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 22 of 24

Hole No. FD-85-3 Date 6/5/85

DRIVE 15

Depth of Test 75.3' to 76.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	3
	3
	4
	4
6"	
	5
	5
	7
	5
	5
1'-0"	
	6
	5
	6
	5
	7
1'-6"	

Remarks

DRIVE 16

Depth of Test 77.6' to 79.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	4
	5
	5
	6
6"	
	6
	6
	7
	7
	7
1'-0"	
	6
	10
	9
	6
	8
1'-6"	

Remarks

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 23 of 24

Hole No. FO-85-3 Date 6/5/85

DRIVE 17

Depth of Test 80.1 to 81.6

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	6
	6
	6
	6
	6
6"	
	6
	6
	5
	5
	4
1'-0"	
	5
	4
	5
	5
	6
1'-6"	

Remarks

DRIVE 18

Depth of Test 82.6' to 84.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	4
	4
	4
	5
	8
6"	
	8
	7
	8
	7
	8
1'-0"	
	9
	12
	10
	12
	10
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 24 of 24

Hole No. FD-85-3 Date 6/5/85

DRIVE 19
Depth of Test 85.1' to 86.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	6
	6
	6
	6
	9
6"	
	15
	16
	14
	16
	15
1'-0"	
1'-6"	

Remarks

DRIVE 20
Depth of Test 87.6 to 89.1

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	4
	4
	5
	6
6"	
	7
	10
	9
	8
	10
1'-0"	
	10
	12
	11
	10
	13
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. W.O. 26

Site FRANKLIN FALLS DAM N. H.

Page 1 of 26 Pages

Hole No. FD-85-4 Diam. (Casing) 4"

Boring Started 6/10/85

SEE SKETCH ON PAGE 15 OF 26

Co-ordinates: N _____ E _____

Boring Completed 6/14/85

Drilled by MOBILE DISTRICT ARMY CORP

Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS, AND FIELD CLASSIFICATION OF SAMPLES, INSTALL AND TEST PIEZOMETER TO DETERMINE PHREATIC SUBSURFACE PORE PRESSURES AND AVERAGE PERMEABILITIES

Elevation Top of Hole 328.65' M.S.L.

Casing Left in Place 42 Feet

Total Overburden Drilled 99.1' Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole 229.55' M.S.L.

Total Rock Drilled NONE Feet

Total Depth of Hole 99.1' Feet

Core Recovered NONE %

Core Recovered — Ft.; — Diam. — In.

Soil Samples 1-3/8 In. Diam. 20 No.

Soil Samples — In. Diam. — No.

Water Table Depth _____

Depth From	Depth To	Method of Drilling and Type of Bit Used
0'	43.5'	DRILLED THROUGH ROCKFILL WITH 6"
		AIR HAMMER
43.5'	60'	DRILLED WITH 3-7/8" ROLLER BIT WITH
		REVERT DRILLING FLUID
60'	96.6'	DRILLED WITH 4" FISH TAIL WITH
		REVERT DRILLING FLUID OR WATER

INDEX

Ground Water _____ Back of Page 15

Boring Location Sketch _____ Back of Page 15

Overburden Record _____ Page 1-13

Rock Drilling — Page —

PIEZOMETER INSTALLATION Page 14

STANDARD PENETRATION TEST Page 16-25

_____ Page _____

Prepared by Donald L Ellison
Field Data

Lab. Data

Submitted by Charles H. Gross

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Boring No. FD-85-4 Desig. _____ Diam. (Casing) 4"
SEE SKETCH ON PAGE 15 OF 25
Co-ordinates: N _____ E _____

Elevation Top of Boring 329.65' M.S.L.
Total Overburden Drilled 99.1' Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring 229.55' M.S.L.
Total Depth of Boring 99.1' Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft : — Diam. — In.
Soil Samples 1-3/8" In. Diam. 20 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 lb Boring Started 6/10/85
Hammer Drop 30 in. Boring Completed 6/14/85
Casing Left 40'
Subsurface Water Data 15 Page 25
Obs. Well Pg. 14
Drilled By MOBILE DISTRICT ARMY CORP
Mfg. Des. Drill FAILLING HOLE MASTER
Inspected By: DON ELLISON
Classification By: DON ELLISON
Classification By: _____

DEPTH 1"= 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
1'						
2'						
3'					6" AIR HAMMER	ROCK FILL
4'						
5'						

GENERAL REMARKS: FOR CONTINUOUS STANDARD PENETRATION TEST SEE PAGES 16 THRU 25

Site: FRANKLIN FALLS DAM	Boring No. FD-85-4	Page 3 of 26

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
6'						
7'						
8'						
					6" AIR HAMMER	ROCK FILL
9'						
10'						
11'						
12'						
					6" AIR HAMMER	ROCK FILL
13'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-4	Page 4 of 26

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
14'						
15'						
16'						
17'						
					6" AIR HAMMER	ROCK FILL
18'						
19'						
20'						
21'						
					6" AIR HAMMER	ROCK FILL
22'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 5 of 26

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					6" AIR HAMMER	ROCK FILL
23'						
24'						
25'						
26'					6" AIR HAMMER	ROCK FILL
27'						
28'						
29'						
30'					6" AIR HAMMER	ROCK FILL

Site: FRANKLIN FALL DAM N.H.	Boring No. FD-85-4	Page 6 of 26

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
31'					6" AIR HAMMER	ROCK FILL
32'						
33'						
34'					6" AIR HAMMER	ROCK FILL
35'						
36'						
37'						
38'						
39'					6" AIR HAMMER	ROCK FILL

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 7 of 26

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		6"			6" AIR HAMMER	ROCK FILL
40'						
41'						
42'					6" AIR HAMMER	ROCK FILL
		6"			DROVE 41 ft 4" PROTECTIVE STEEL PIPE	
43'						
			43.5'		BOTTOM OF ROCK FILL	BOTTOM OF ROCK FILL
44'					WASHED WITH 3-7/8" ROLLER BIT	
45'						
		3-7/8"				
46'						
47'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 8 of 26

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	48' 49' 50'			50'		WASHED WITH 3-7/8" ROLLER BIT	
0.0' SLOUGH		1	1-3/8"	50.4'	100 NO RECOVERY	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 50 ft (A) RODS PLUS SPIDER	NO RECOVERY PUSHED A STONE
	51' 52'		3-7/8"	52.5'		WASHED WITH 3-7/8" ROLLER BIT	
0.0' SLOUGH	53' 54'	2	1-3/8"	54.0'	16-28-36 48%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON WITH 52 ft (A) RODS PLUS SPIDER	SILTY SAND: FINE TO VERY FINE, MOSTLY FINE, 30-35% NON PLASTIC TO SLIGHTLY PLASTIC FINES, DARK GRAY, (SM-SC)
	55'		3-7/8"	55'		WASHED WITH 3-7/8" ROLLER BIT HIT A COBBLE AT 54.8	
0.0 SLOUGH	56'	3	1-3/8"		13-27-34 70%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON WITH 55 ft (A) RODS PLUS SPIDER	SILTY SAND: FINE TO VERY FINE, MOSTLY FINE, 35-40% NON PLASTIC TO SLIGHTLY PLASTIC FINES, DARK GRAY, (SM-SC)

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 9 of 26

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				56.5'			
	57'		3-7/8"	57.5'		WASHED WITH 3-7/8" ROLLER BIT, LOST MOST OF THE DRILLING FLUID IN SOME GRAVEL	
0.0 SLOUGH	58' 59'	4	1-3/8"	59'	13-38-45 / 0%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 58 ft (A) RODS WITH A SPIDER	NO RECOVERY
	60'		3-7/8"	60'		WASHED WITH 3-7/8" ROLLER BIT, LOST MOST OF THE DRILLING FLUID IN SOME GRAVEL	
0.0' SLOUGH	61'	5	1-3/8"	61.5'	21-32-32 / 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 60 ft (A) RODS PLUS A SPIDER	CLAYEY SAND: FINE TO VERY FINE, MOSTLY FINE, 45-50% SLIGHTLY PLASTIC FINES, GRAY (SC-SM)
	62'		4"	62.4'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	63'	6	1-3/8"	63.9'	25-33-42 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 63 ft (A) RODS PLUS A SPIDER	CLAYEY SAND, FINE TO VERY FINE GRAINED, MOSTLY FINE, 45-50% NON-PLASTIC TO SLIGTLY PLASTIC FINES, DARK GRAY, (SM-SC)
	64'					WASHED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 10 of 26

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
				64.8			
.2' SLOUGH	65' 66'	7	1-3/8"	66.3	16-37 -23 48%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 65 ft (A) RODS PLUS A 2 ft SPIDER	SILTY SAND: COARSE TO FINE, MOSTLY FINE; 3-5% ANGULAR GRAVEL, 30-40% NON PLASTIC TO SLIGHTLY PLASTIC FINES, GRAY (SM-SC)
	67'		4"	67.3'		WASHED WITH 4" FISH TAIL	
.25' SLOUGH	68'	8	1-3/8"	68.8'	18-24 -29 54%	SAMPLED WITH 2-1-3/8" I.D. SPLIT SPOON WITH 67 ft (A) RODS WITH A 2 ft SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 30-35% NONPLASTIC TO SLIGHTLY PLASTIC FINES, GRAYISH BROWN, (SM-SC)
.6' OVER WASH	69' 70'		4"	70.6'		WASHED WITH 4" FISH TAIL	
	71' 72'	9	1-3/8"	72.1'	14-25 -42 80%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 70 ft, (A) RODS PLUS A 2 ft SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 35-40% NON PLASTIC FINES, GRAYISH BROWN, (SM)
			4"			WASHED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 11 of 26

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.1 SLOUGH		10	1-3/8"	73' – 73.8	47-65/.8' 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 73 ft (A) RODS PLUS A 2ft SPIDER. REFUSAL ON A COBBLE	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 30-35% NON PLASTIC FINES, BROWNISH GRAY, (SM)
	74'		3-7/8"	75'		WASHED WITH 3-7/8" ROLLER BIT HIT A COBLE AT 73.9' DROVE 10ft MORE OF 4" PROTECTIVE PIPE TO SEAL THE LEAK OFF	
0.0 SLOUGH	75' 76'	11	1-3/8"	76.5'	39-35-40 15%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 75 ft (A) RODS PLUS A 2ft SPIDER	SILTY SAND: MEDIUM TO VERY FINE, MOSTLY FINE, 45-50% NON PLASTIC FINES, DARK GREY, (SM)
	77'		4"	77.5'		WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID	
0.0 SLOUGH	78' 79'	12	1-3/8"	79.1'	24-18-35 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 75 ft. (A) RODS PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE GRAIN, MOSTLY FINE SAND, 35-40 NON-PLASTIC TO SLIGHTLY PLASTIC FINES, GRAY, (SM)
0.1' OVER WASH	80'		4"	80.2'		WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID.	
	81'	13	1-3/8"		15-19-33 75%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 80 ft. (A) RODS PLUS 2ft. SPIDER	SILTY SAND: FINE TO VERY FINE, MOSTLY FINE, 40-50% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, (SM) BROWN

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 12 of 26

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
				81.7'			
0.2' OVER-WASH	82'		4"	82.9'		WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID	
	83' 84'	14	1-3/8"	84.4'	20-39-51 80%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 83 ft. (A) ROOS PLUS 2 ft. SPIDER	SILTY SAND: FINE TO VERY FINE, MOSTLY FINE SAND, 35-40% NON PLASTIC FINES TO SLIGHTLY PLASTIC FINES, DARK BROWN (SM)
	85'		4"	85.4'		WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID	
0.2' SLOUGH	86'	15	1-3/8"	86.9'	9-9-12 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 85 ft. (A) ROOS PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 30-35% NON PLASTIC FINES, LIGHT BROWN, (SM)
	87'		4"	87.8'		WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID.	
0.1' SLOUGH	88' 89'	16	1-3/8"	89.3'	7-10-15 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 87 ft. (A) ROOS PLUS A 2 ft. SPIDER.	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, 30-35% NON-PLASTIC FINES, LIGHT BROWN, (SM)
	90'		4"			WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-4	Page 13 of 26

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.2' SLOUGH	1" = 1' 91'	17	1-3/8"	90.1' – 91.6'	8-14 -19 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 90 ft (A) RODS PLUS A 2 ft SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY FINE, 5-10% SUB ANGULAR GRAVEL, 20-30% NON-PLASTIC FINES, LIGHT BROWN, (SP-SM)
	92'		4"	92.4'		WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID.	
0.2' SLOUGH	93'	18	1-3/8"	93.9'	10-10 -14 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 93 ft. (A) RODS PLUS A 2ft. SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY FINE GRAIN, 10-15% SUB SANGULAR GRAVEL, 20-25% NON-PLASTIC FINES, LIGHT BROWN (SP)
0.2' OVER-WASH	94' 95'		4"	95.1'		WASHED WITH 4" FISH TAIL, LOST DRILLING FLUID.	
	96'	19	1-3/8"	96.6'	10-18 -21 95%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 95 ft (A) RODS PLUS A 2 ft SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY FINE, 25-30% SUB-ROUNDED GRAVEL, 20-25% NON-PLASTIC FINES, LIGHT BROWN (SP)
	97		4"	97.6		WASHED WITH 4" FISH TAIL	
	98'	20	1-3/8"	99.1'	22-37 -35 0%	SAMPLED WITH 97 ft (A) RODS WITH 2'x1-3/8" I.D. SPLIT SPOON	NO RECOVERY

PIEZOMETER INSTALLATION REPORT

PROJECT: FRANKLIN FALLS DAM, N.H. DATE: 6/14/85

LOCATION (STA): 17+90 OFFSET FROM CENTER LINE: 280 ft. D.S. PIEZ NO.: 3

PIEZ TYPE: CASAGRANDE DEPTH OF PIEZ: 95 ft RISER PIPE DIAM: 3/4" SCH80 PVC

PIEZ TIP SET IN (SOIL TYPE): SAND (SP) SOIL SAMPLE NO.: 18 BORING DIAM: 4"

METHOD OF INSTALLATION:

TYPE OF PROTECTION FOR PIEZ: 52 ft. 4" STEEL PROTECTIVE PIPE VENT: 1/2" HOLE IN THE CAP

GROUND ELEV.: 328.65 ELEV. TOP OF RISER: 330 MSL ELEV PIEZ TIP: 233.65 MSL

FILTER: CONCRETE SAND FROM ELEV: 232.05 MSL TO ELEV: 260.65 MSL

SEAL: BENTONITE FROM ELEV: 260.65 MSL TO ELEV: 272.65 MSL

INSTALLED BY: ARMY CORP OF ENGINEERS MOBILE DISTRICT CONTRACT NO.: 60022 FOREMAN: CARL MOON

DATE OF INSTALLATION: 6/14/85 DATE OF OBSERVATIONS: 6/14/85

METHOD OF TESTING PIEZ.:

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
3:05	0	0	335	30	26			
3:07	2	8						
3:10	5	12						
3:15	10	19						
3:20	15	26						

REMARKS: GROUNDWATER LEVEL PRIOR TO FALLING HEAD TEST WAS 26 FT

Donald L Ellison
INSPECTOR

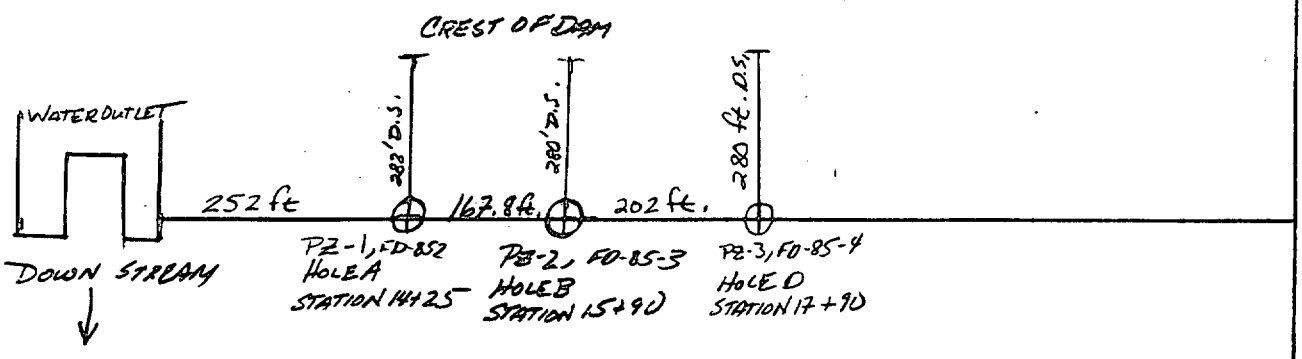
Site: FRANKLIN FALLS DAM N.H.
Boring No: FD-85-4

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
6/14	2:30	52 ft.	99.1 ft.	26 ft.	302.65	

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Boring No. FD-85-4

STANDARD PENETRATION TEST

Project FRANKLIN FALLS, N.H. Page 16 of 25

Hole No. FD-85-4 Date 6/11/85

DRIVE 1
Depth of Test 50' to 50.4'

Blow	Gage Reading	Penetration per Blow		Blows per 1/10 ft ~~Inch~~
			0	
1				5
2				4
3				6
4			REFUSAL	80
5				
6			6"	
7				
8				
9				
10				
11				
12			1'-0"	
13				
14				
15				
16				
17				
18			1'-6"	
19				
20				

Remarks

DRIVE 2
Depth of Test 53.5' to 54'

Blow	Gage Reading	Penetration per Blow		Blows per 1/10 ft ~~Inch~~
			0	
1				2
2				3
3				3
4				3
5				5
6			6"	
7				4
8				6
9				6
10				6
11				6
12			1'-0"	
13				7
14				7
15				7
16				8
17				7
18			1'-6"	
19				
20				

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 17 of 25

Hole No. FO-85-4 Date 6/11/85

DRIVE 3
Depth of Test 55' to 56.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~1/3 ft~~ Inch
0	2
	3
	3
	3
	3
6"	
	4
	5
	6
	6
	6
1'-0"	
	7
	6
	8
	7
	6
1'-6"	

Remarks

6/12/85

DRIVE 4
Depth of Test 57.5' to 59'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~1/3 ft~~ Inch
0	2
	2
	2
	4
	3
6"	
	6
	6
	7
	9
	10
1'-0"	
	6
	9
	10
	10
	10
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 18 of 25

Hole No. FD-85-4 Date 6/12/85

DRIVE 5

Depth of Test 60' to 61.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	3
	4
	4
	5
	5
6"	
	5
	7
	7
	6
	7
1'-0"	
	4
	4
	7
	8
	9
1'-6"	

Remarks

DRIVE 6

Depth of Test 62.4' to 63.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	4
	3
	4
	5
	9
6"	
	7
	5
	8
	6
	7
1'-0"	
	6
	8
	9
	8
	9
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 19 of 25

Hole No. FO-85-4 Date 6/12/85

DRIVE 7

Depth of Test 64.8' to 66.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	2
	3
	4
	4
6"	
	6
	10
	8
	7
	6
1'-0"	
	4
	5
	5
	4
	5
1'-6"	

Remarks

DRIVE 8

Depth of Test 67.3' to 68.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	3
	4
	4
	4
6"	
	4
	4
	5
	6
	5
1'-0"	
	5
	6
	6
	6
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 20 of 26

Hole No. FD-85-4 Date 6/12/85

DRIVE 9

Depth of Test 70.6' to 72.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	4
	2
	2
	3
	3
6"	
	4
	5
	5
	5
	6
1'-0"	
	8
	7
	9
	9
	9
1'-6"	

Remarks

6/13/85

DRIVE 10

Depth of Test 73' to 73.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	6
	10
	12
	9
	10
6"	
	6
	10
REFUSAL	50
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 21 of 25

Hole No. FO-85-4 Date 6/13/85

DRIVE 11

Depth of Test 75' to 76.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/6 ft.
0	9
	5
	7
	8
	10
6"	
	8
	8
	7
	6
	6
1'-0"	
	6
	9
	9
	7
	9
1'-6"	

Remarks

DRIVE 12

Depth of Test 77.5' to 79.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/6 ft
0	4
	4
	3
	3
	2
6"	
	3
	3
	3
	4
	5
1'-0"	
	12
	7
	6
	5
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H Page 22 of 25

Hole No. FO-85-4 Date 6/13/85

DRIVE 13

Depth of Test 80.2' to 81.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	3
	3
	3
	3
	3
6"	
	3
	3
	4
	5
	4
1'-0"	
	5
	3
	8
	7
	8
1'-6"	

Remarks

DRIVE 14

Depth of Test 82.9' to 84.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	3
	4
	4
	4
	5
6"	
	7
	8
	9
	9
	8
1'-0"	
	9
	12
	12
	10
	8
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 23 of 25

Hole No. FD-85-4 Date 6/13/85

DRIVE 15

Depth of Test 85.4' to 86.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	2
	2
	1
	2
6"	
	1
	2
	2
	2
	2
1'-0"	
	2
	2
	2
	2
	3
1'-6"	

Remarks

DRIVE 16

Depth of Test 87.8' to 89.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	2
	1
	2
	1
	1
6"	
	1
	2
	2
	2
	3
1'-0"	
	2
	4
	3
	3
	3
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 24 of 25

Hole No. FD-85-4 Date 6/13/85

DRIVE 17
Depth of Test 90.1' to 91.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	2
	1
	1
	2
	2
6"	
	2
	2
	3
	4
	3
1'-0"	
	4
	4
	3
	4
	4
1'-6"	

Remarks

DRIVE 18
Depth of Test 92.4' to 93.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	1
	2
	3
	2
	2
6"	
	1
	2
	2
	2
	3
1'-0"	
	3
	2
	2
	3
	4
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 25 of 25

Hole No. FD-85-4 Date 6/13/85

DRIVE 19

Depth of Test 95.1' to 96.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft. ~~Inch~~
0	2
	2
	2
	2
	2
6"	
	3
	3
	4
	4
	4
1'-0"	
	3
	3
	4
	5
	6
1'-6"	

Remarks

6/14/85

DRIVE 20

Depth of Test 97.6' to 99.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	6
	5
	4
	4
6"	
	9
	7
	7
	8
	8
1'-0"	
	7
	7
	7
	7
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. NO. 26

Site FRANKLIN FALLS DAM, N.H. Page 1 of 28 Pages

Hole No. FD-85-5 Diam. (Casing) 4" Boring Started 6/17/85

FOR LOCATION SEE SKETCH ON PAGE 15 OF 28

Co-ordinates: N _____ E _____ Boring Completed 6/21/85

Drilled by MOBILE DISTRICT, ARMY CORP. Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS, AND FIELD CLASSIFICATION, INSTALL AND TEST PIEZOMETERS TO DETERMINE PHREATIC SUBSURFACE PORE PRESSURES AND AVERAGE PERMEABILITIES

Elevation Top of Hole 328.14' M.S.L. Casing Left in Place 36 Feet

Total Overburden Drilled 107 Feet

Elevation Top of Rock NONE M.S.L.

Elevation Bottom of Hole 221.14' M.S.L.

Total Rock Drilled NONE Feet

Total Depth of Hole 107 Feet

Core Recovered NONE %

Core Recovered — Ft.; — Diam. — In.

Soil Samples 1-3/8" In. Diam. 24 No.

Soil Samples — In. Diam. — No. Water Table Depth _____

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	35	DRILLED WITH 6" AIR HAMMER
35	45	WASHED CASING WITH 3-7/8 ROLLER
		BIT PLUS REVERT
45	104	WASHED WITH 4" FISH TAIL PLUS
		REVERT
104	107	WASHED WITH 3-7/8" ROLLER BIT
		PLUS REVERT

INDEX

Ground Water	Back of Page	15
Boring Location Sketch	Back of Page	15
Overburden Record	Page	1-14
Rock Drilling —	Page	—
PIEZOMETER INSTALLATION	Page	16
STANDARD PENETRATION TESTS	Page	17-28
	Page	

Prepared by DONALD L ELLISON
Field Data Lab. Data

Submitted by Charles B. Gross

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site FRANKLIN FALLS DAM

Boring No. FD-85-5 Desig. _____ Diam. (Casing) 4"

FOR LOCATION SEE SKETCH ON PAGE 15 OF 28

Co-ordinates: N _____ E _____

Elevation Top of Boring 328.14' M.S.L.
Total Overburden Drilled 107 Feet
Elevation Top of Rock NONE M.S.L.
Total Rock Drilled NONE Feet
Elevation Bottom of Boring 221.14 M.S.L.
Total Depth of Boring 107 Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft : — Diam. — In.
Soil Samples 1-3/8" In. Diam. 24 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 lb. Boring Started 6/17/85
Hammer Drop 30 IN. Boring Completed 6/21/85
Casing Left 36 ft.
Subsurface Water Data _____ Page 15
Obs. Well Pg. 16
Drilled By MOBILE DISTRICT ARMY CORP
Mfg. Des. Drill FAILING HOLE MASTER
Inspected By: DONALD L ELLISON
Classification By: DONALD L ELLISON
Classification By: _____

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
1'						
2'						
3'					DRILLED WITH 6" AIR HAMMER	ROCK FILL
		6"				
4'						
5'						

GENERAL REMARKS: FOR CONTINUOUS STANDARD PENETRATION TEST SEE PAGES 17-28

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 3 of 28

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
6'						
7'						
8'						
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
9'						
10'						
11'						
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
12'						
13'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 4 of 28

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
14'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
15'						
16'						
17'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
18'						
19'						
20'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
21'						
22'						

Site: FRANKLIN FALLS DAM, N.H	Boring No. FD-85-5	Page 5 of 28

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
23'						
24'						
25'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
26'						
27'						
28'						
29'					DRILLED WITH 6" AIR HAMMER	ROCK FILL
30'		6"				

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 6 of 28

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
31'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
32'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
33'						
34'					DROVE 35 ft. OF 4" CASING WITH 140 lb. HAMMER	
35'	6"		35'		BOTTOM OF ROCK FILL	
36'		3-7/8"			WASH WITH 3-7/8" ROLLER BIT	
37'						
38		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT	
39'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 7 of 28

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT	
40'						
41'						
		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT	
42'						
43'						
44'		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT	
45'			45'			
0.0' SLOUGH	1	1-3/8"		20-23-25 / 50%	SAMPLED WITH 2x1-3/8" I.D. SPLIT SPOON WITH 40 ft. OF (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE GRAINED, MOSTLY MEDIUM GRAIN, 15-20% SUB ROUNDED GRAVEL, 3-5% NON PLASTIC FINES, BROWN, (SP)
46'			46.5'			
47'		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 8 of 28

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0' SLOUGH	48'	2	1-3/8"	47.5' – 48.5'	44-60 / 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 45 ft. of (A) RODS PLUS A 2 ft SPIDER. REFUSAL AT 48.5'	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE GRAINED, 25-30% SUB ROUNDED GRAVEL, 3-7% NON PLASTIC FINES, GRAY, (SP)
	50'		4"	50'		WASHED WITH 4" FISHTAIL HIT SOME GRAVEL	
0.0' SLOUGH	51'	3	1-3/8"	51.5'	18-40 – 35 / 35%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 50 ft of (A) RODS PLUS A 2 ft SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY FINE GRAINED, 5-10% SUB ANGULAR GRAVEL, 15-25% NON PLASTIC FINES, BROWNISH GREY, (SP)
	52'		4"	52.4'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	53'	4	1-3/8"	53.9'	13-18 – 24 / 40%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 50 ft OF (A) RODS PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE GRAINED, 35-40% NON PLASTIC FINES, DARK GREY, (SM)
	54' 55'		4"	55.1'		WASHED WITH 4" FISH TAIL, HIT GRAVEL AND A COBLE AT 54.4'	
0.1' SLOUGH	56'	5	1-3/8"		12-17 – 26 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 55 ft. OF (A) RODS PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE GRAINED, MOSTLY FINE GRAINED, 35-40% NONPLASTIC FINES, BROWNISH GREY, (SM)

Site: FRANKLIN FALLS DAM N.H.	Boring No. FO-85-5	Page 9 of 28

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				56.6'			
	57'		4"	57.6'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	58' 59'	6	1-3/8"	59.1'	20-35 39 70%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 59 ft OF (A) RODS PLUS A 2ft. SPIDER	SILTY SAND: MEDIUM TO FINE GRAINED, MOSTLY FINE GRAINED, 35-40% NON PLASTIC FINES, DARK GRAY, (SM)
0.1' OVER WASH	60'		4"	60.2'		WASHED WITH 4" FISH TAIL	
	61'	7	1-3/8"	61.7'	15-25 -39 80%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 60 ft. of (A) RODS PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE GRAIN, 35-40% NON-PLASTIC FINES, GRAY, (SM)
	62'		4"	62.5'		WASHED WITH 4" FISH TAIL	
0.2' SLOUGH	63' 64'	8	1-3/8"	64'	18-33 -39 80%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 63 ft (A) RODS PLUS A 2 ft SPIDER	SILTY SAND: MEDIUM TO FINE GRAINED, MOSTLY FINE GRAIN, 40-45% NON-PLASTIC FINES, GRAY, (SM)
			4"			WASHED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM, N.H	Boring No. FD-85-5	Page 10 of 28

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	65'			65.5'			
0.0' SLOUGH	66'	9	1-3/8"	66.5'	18-28-35 65%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 65 ft. OF (A) RODS PLUS A 2 ft. SPIDER.	SAND: COARSE TO FINE GRAIN, MOSTLY MEDIUM GRAIN, 15-20% NON PLASTIC FINES, REDDISH BROWN, (SP)
	67'		4"	67.4'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	68'	10	1-3/8"	68.4'	32-60/.4' 40%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 67 ft. (A) RODS PLUS A 2 ft. REFUSAL AT 68.4'	GRAVELY SAND: COARSE TO FINE GRAIN, MOSTLY FINE GRAIN, 10-15% SUBANGULAR GRAVEL, 10-15% NON PLASTIC FINES, REDDISH BROWN (SP)
	69' 70'		4"	70'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	71'	11	1-3/8"	71.5'	27-26-25 55%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 70 ft OF (A) RODS PLUS A 2 ft. SPIDER	SAND: COARSE TO FINE GRAIN, MOSTLY MEDIUM GRAIN, 5-10% SUB-ROUNDED GRAVEL, 5-10% NON-PLASTIC FINES, GREY, (SP)
	72'		4"	72.5'		WASHED WITH 4" FISH TAIL	
	73'	12	1-3/8"		17-27-35	SAMPLED WITH A 2'-1-3/8" I.D. SPLIT SPOON	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 11 of 28

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0' SLOUGH	1" = 1' 74'	12 CONT.	1-3/8"	74'	17-22-35 / 55%	WITH 73 ft. OF (A) RODS PLUS A 2 ft. SPIDER	SILTY SAND: COARSE TO FINE GRAIN, MOSTLY MEDIUM GRAIN, 5-10% SUBANGULAR GRAVEL, 20-30% NON PLASTIC FINES, LIGHT BROWN, (SM-SP)
	75'		4"	75'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	76'	13	1-3/8"	76.5'	24-36-33 / 55%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 75 ft. OF (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE GRAIN, MOSTLY COARSE, 25-30% SUBANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, BROWN, (SP)
	77'		4"	77.5'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	78'	14	1-3/8"	79'	20-27-31 / 65%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 77 ft (A) RODS PLUS A 2ft SPIDER	GRAVELY SAND: COARSE TO FINE GRAIN, MOSTLY MEDIUM GRAIN, 20-25% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, REDDISH BROWN, (SP)
	79'		4"	80'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	80' 81'	15	1-3/8"	81.5'	19-17-31 / 50%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 80 ft. (A) RODS PLUS A 2ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY MEDIUM GRAIN SAND, 20-25% SUB-ANGULAR GRAVEL, <5% NON-PLASTIC FINES, LIGHT BROWN, (SP)

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 12 of 28

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
	82'		4"	82.4'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	83'	16	1-3/8"	83.9'	29-40 -27 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 83 ft (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY MEDIUM GRAIN SAND, 15-20% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, REDDISH BROWN (SP)
	84'		4"	85'		WASHED WITH A 4" FISH TAIL	
0.0' SLOUGH	85' 86'	17	1-3/8"	86.5'	38-21 -31 50%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 85 ft. (A) RODS PLUS A 2 ft SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY MEDIUM GRAIN SAND, 10-15% SUB-ROUNDED GRAVEL, 5-10% NON-PLASTIC FINES, REDDISH BROWN, (SP)
	87'		4"	87.4'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	88'	18	1-3/8"	88.9'	25-27 -36 50%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 87.5 ft. (A) RODS PLUS A 2' SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE GRAIN SAND, 10-15% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, BROWN, (SP)
	89' 90		4"			WASHED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-5	Page 13 of 28

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0' SLOUGH	1" = 1' 91'	19	1-3/8"	91.5'	40-39-31 / 60%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 90 ft. (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE GRAIN, MOSTLY MEDIUM GRAIN SAND, 15-20% SUB-ANGULAR SAND, 5-10% NON-PLASTIC FINES, REDDISH BROWN, (SP)
	92'			92.4'		WASHED WITH 4" FISH TAIL	
0.1' SLOUGH	93'	20	1-3/8"	93.9'	48-33-34 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 93 ft (A) RODS PLUS A 2 ft. SPIDER.	GRAVELY SAND: COARSE TO FINE GRAINED, MOSTLY COARSE GRAINED SAND, 30-35% ANGULAR TO SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, (SP) REDDISH BROWN
	94' 95'		4"	95'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	96'	21	1-3/8"	96.5'	37-42-32 / 60%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 95 ft. (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE GRAINED, MOSTLY COARSE GRAINED, 35-40% SUB-ROUNDED GRAVEL, 5-10% NON-PLASTIC FINES, DARK GRAY, (SP)
	97'		4"	97.5'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	98'	22	1-3/8"		28-34-29 / 55%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 97 ft. (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE SAND, 30-35% SUB-ROUNDED GRAVEL, <5% NON-PLASTIC FINES, GRAYISH BROWN, (SP)

Site: FRANKLIN FALLS DAM, N.H	Boring No. FD-85-5	Page 14 of 28

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	99'			99'			
	100'		4"	100'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	101'	23	1-3/8"	101.5'	27-33 -32 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 100 ft (A) RODS PLUS A 2 ft. SPIDER	GRAVELLY SAND: COARSE TO FINE GRAINED, MOSTLY COARSE GRAINED, 30-40% SUB-ROUNDED GRAVEL, <5% NON-PLASTIC FINES, BROWN, (SP)
	102'		4"	102.5'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	103' 104'	24	1-3/8"	104'	33-40 -32	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 103 ft. (A) RODS PLUS 4 2ft SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE GRAINED, 45-50% SUBROUNDED GRAVEL, <5% NON-PLASTIC FINES, BROWN, (SP)
	105' 106' 107'					WASHED WITH 4" FISH TAIL HIT SOME COBBLES AND BOULDERS, CHANGED TO 3-7/8" ROLLER BIT. STILL IN COBBLES AND BOULDERS. BOTTOM OF HOLE	

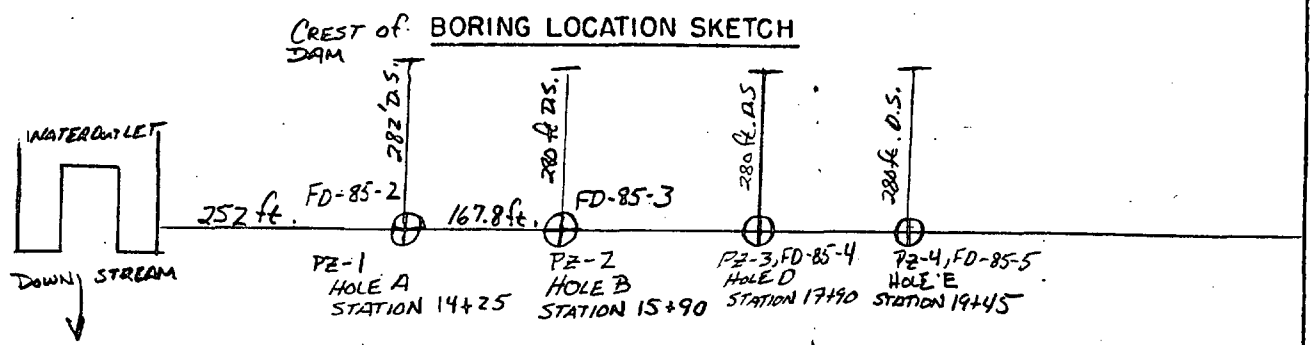
Site: FRANKLIN FALLS DAM N.H.
Boring No: FD-85-5

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
6/21	2:00	35 ft,	107 ft.	26 ft	302.14	

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Boring No. FD-85-5

PIEZOMETER INSTALLATION REPORT

PROJECT: FRANKLIN FALLS DAM N.H. DATE: 6/21/85

LOCATION (STA): 19+45 OFFSET FROM CENTER LINE: 280 Ft. D.S. PIEZ NO.: 4

PIEZ TYPE: CASAGRANDE DEPTH OF PIEZ: 105 ft. RISER PIPE DIAM: 3/4" SCH80 PVC

PIEZ TIP SET IN (SOIL TYPE): GRAVELY SAND SOIL SAMPLE NO.: 22 BORING DIAM: 4"

METHOD OF INSTALLATION:

TYPE OF PROTECTION FOR PIEZ: 37 ft 4" FLUSH JOINT CASING VENT: 1/8" HOLE IN CAP

GROUND ELEV.: 328.14' MSL ELEV. TOP OF RISER: 330.14' MSL ELEV PIEZ TIP: 223.4' MSL

FILTER: CONCRETE BUILDING SAND FROM ELEV: HOLE COLLAPSED TO ELEV: HOLE COLLAPSED

SEAL: BETONITE CLAY FROM ELEV: 292.14' MSL TO ELEV: 296.16' MSL

INSTALLED BY: MOBILE DISTRICT CARL MOON CONTRACT NO.: 60022 FOREMAN: CARL MOON

DATE OF INSTALLATION: 6/21/85 DATE OF OBSERVATIONS: 6/21/85

METHOD OF TESTING PIEZ.:

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
2:30	0	0	3:00	30	26			
2:31	2	6						
2:35	5	12						
2:40	10	20						
2:45	15	24						

REMARKS: HOLE COLLAPSED AS SOON AS WE WASHED OUT THE REVERT, BUT WE ALREADY HAD THE PIEZOMETER IN THE HOLE

DONALD ELLISON
INSPECTOR

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 12 of 28

Hole No. FD-85-5 Date 6/19/85

DRIVE 1

Depth of Test 45' to 46.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	3
	4
	4
	5
	4
6"	
	4
	4
	6
	5
	4
1'-0"	
	4
	4
	6
	5
	6
1'-6"	

Remarks

DRIVE 2

Depth of Test 47.5' to 48.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	2
	8
	10
	12
	12
6"	
	15
	15
	15
REFUSAL	15
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 18 of 28

Hole No. FD-85-5 Date 6/19/85

DRIVE 3
Depth of Test 50' to 51.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/2 ft
0	
	3
	3
	4
	4
	4
6"	
	4
	5
	9
	9
	13
1'-0"	
	10
	7
	6
	6
	6
1'-6"	

Remarks

DRIVE 4
Depth of Test 52.5' to 54'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/2 ft
0	
	3
	3
	2
	2
	3
6"	
	3
	4
	4
	4
	3
1'-0"	
	4
	3
	4
	6
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS Page 19 of 28

Hole No. FD-85-5 Date 6/19/85

DRIVE 5
Depth of Test 55.1' to 56.6'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	1
	2
	3
	3
	3
6"	
	2
	3
	4
	4
	4
1'-0"	
	4
	5
	5
	6
	6
1'-6"	

Remarks

DRIVE 6
Depth of Test 56.6' to 59.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft Inch
0	3
	3
	4
	4
	6
6"	
	7
	8
	7
	7
	6
1'-0"	
	11
	9
	7
	6
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 20 of 28

Hole No. FD-85-5 Date 6/19/85

DRIVE 7
Depth of Test 60.2' to 61.7

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	
	4
	4
	4
	4
6"	
	5
	5
	5
	5
	5
1'-0"	
	7
	6
	6
	6
	7
1'-6"	

Remarks

DRIVE 8
Depth of Test 62.5' to 64'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	
	3
	4
	3
	4
	4
6"	
	5
	7
	7
	7
	7
1'-0"	
	7
	7
	9
	8
	8
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 21 of 28

Hole No. FD-85-5 Date 6/19/85

DRIVE 9
Depth of Test 65' to 66.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft Inch
0	3
	3
	3
	4
	5
6"	
	5
	6
	4
	6
	7
1'-0"	
	2
	2
	2
	2
	2
1'-6"	

Remarks

DRIVE 10
Depth of Test 67.4' to 68.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft Inch
0	5
	5
	6
	6
	10
6"	
	10
	15
	20
REFUSAL	15
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 22 of 28

Hole No. FO-85-5 Date 6/19/85

DRIVE 11

Depth of Test 70' to 71.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft, Inch
0	6
	6
	5
	5
	5
6"	
	5
	6
	5
	5
	5
1'-0"	
	5
	5
	5
	5
	5
1'-6"	

Remarks

DRIVE 12

Depth of Test 72.5' to 74'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft Inch
0	4
	2
	3
	5
	4
6"	
	5
	6
	6
	5
	5
1'-0"	
	6
	6
	6
	6
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 23 of 28

Hole No. FD-85-5 Date 6/14/85

DRIVE 13
Depth of Test 75' to 76.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	4
	5
	5
	5
	5
6"	
	7
	6
	7
	8
	8
1'-0"	
	5
	4
	9
	8
	7
1'-6"	

Remarks

DRIVE 14
Depth of Test 77.5' to 79.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	4
	4
	4
	4
	4
6"	
	5
	5
	4
	7
	6
1'-0"	
	7
	6
	6
	6
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 24 of 28

Hole No. FO-85-5 Date 6/20/85

DRIVE 15
Depth of Test 80' to 81.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	3
	3
	3
	3
	5
6"	
	4
	3
	3
	3
	4
1'-0"	
	9
	8
	5
	5
	4
1'-6"	

Remarks

DRIVE 16
Depth of Test 82.4' to 83.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	7
	6
	5
	5
	6
6"	
	10
	11
	8
	6
	5
1'-0"	
	5
	5
	6
	6
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 25 of 28

Hole No. FO-85-5 Date 6/20/85

DRIVE 17
Depth of Test 85' to 86.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	5
	12
	10
	6
	5
6"	
	4
	4
	4
	5
	4
1'-0"	
	6
	6
	4
	6
	7
1'-6"	

Remarks

DRIVE 18
Depth of Test 87.4' to 88.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	6
	6
	4
	4
	5
6"	
	6
	5
	5
	5
	6
1'-0"	
	6
	6
	6
	11
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 26 of 28

Hole No. FD-85-5 Date 6/20/85

DRIVE 19

Depth of Test 90' to 91.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	10
	6
	8
	8
	8
6"	
	6
	7
	8
	10
	8
1'-0"	
	7
	5
	5
	7
	7
1'-6"	

Remarks

6/21/85

DRIVE 20

Depth of Test 92.4' to 93.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	7
	18
	11
	8
	5
6"	
	8
	7
	8
	5
	5
1'-0"	
	5
	6
	8
	8
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 27 of 28

Hole No. FD-85-5 Date 6/21/85

DRIVE 21
Depth of Test 95' to 96.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	12
	10
	7
	4
	4
6"	
	6
	12
	10
	7
	7
1'-0"	
	5
	5
	7
	9
	8
1'-6"	

Remarks

DRIVE 22
Depth of Test 97.5' to 99.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ft ~~Inch~~
0	
	5
	6
	5
	6
	6
6"	
	5
	7
	9
	8
	7
1'-0"	
	8
	6
	5
	5
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 28 of 28

Hole No. FO-85-5 Date 6/21/85

DRIVE 23
Depth of Test 100' to 101.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft.
0	8
	5
	5
	4
	5
6"	
	6
	6
	7
	7
	7
1'-0"	
	7
	7
	7
	5
1'-6"	6

Remarks

DRIVE 24
Depth of Test 102.5' to 104'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	6
	8
	6
	6
	7
6"	
	7
	11
	8
	9
	5
1'-0"	
	4
	7
	7
	7
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. WO 26

Site: FRANKLIN FALLS DAM N.H.

Page 1 of 24 Pages

Hole No. FD-85-6 Diam. (Casing) 4"

Boring Started 6/24/85

FOR LOCATION SEE SKETCH ON Page 13 of 24

Co-ordinates: N _____ E _____

Boring Completed 6/26/85

Drilled by MOBILE DISTRICT

Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS, AND FIELD CLASSIFICATION OF SAMPLES, INSTALL AND TEST PIEZOMETERS TO DETERMINE PHREATIC SURFACE PORE PRESSURES AND AVERAGE PERMEABILITIES

Elevation Top of Hole 328.7' M.S.L.

Total Overburden Drilled 99 Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole 229.7' M.S.L.

Total Rock Drilled — Feet

Total Depth of Hole 229.7' Feet

Core Recovered — %

Core Recovered — Ft.; — Diam. — In.

Soil Samples 1-3/8" In. Diam. 20 No.

Soil Samples — In. Diam. — No.

Casing Left in Place 41 Feet

Water Table Depth 26'

Depth From	Depth To	Method of Drilling and Type of Bit Used
0'	39'	DRILLED WITH 6" AIR HAMMER
39'	52.5'	DRILLED WITH 3-7/8" ROLLER BIT PLUS REVERT
52.5'	99	DRILLED WITH 4" FISH TAIL AND REVERT

INDEX

Ground Water	Back of Page 13 of 24
Boring Location Sketch	Back of Page 13 of 24
Overburden Record	Page 1-12 of 24
Rock Drilling	Page ____
PIEZOMETER INSTALLATION	Page 14 of 24
STANDARD PENETRATION TEST	Page 15-24
	Page ____

Prepared by DONALD L ELLISON
Field Date

Lab. Date

Submitted by Charles [illegible]

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site FRANKLIN FALLS DAM, N.H. Page 2 of 24 Pages

Boring No. FD-85-6 Desig. _____ Diam. (Casing) 4"

FOR LOCATION SEE SKETCH ON PAGE 13 OF 24

Co-ordinates: N _____ E _____

Elevation Top of Boring 328.7' M.S.L.
Total Overburden Drilled 99 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring 229.7' M.S.L.
Total Depth of Boring 229.7 Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft. — Diam. — In.
Soil Samples 1-3/8" In. Diam. 20 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140 Boring Started 6/24/85
Hammer Drop 30 in. Boring Completed 6/26/85
Casing Left 41
Subsurface Water Data _____ Page 13 of 24
Obs. Well _____
Drilled By MOBILE DISTRICT
Mfg. Des. Drill FAILING (HOLE MASTER)
Inspected By: DON ELLISON
Classification By: DON ELLISON
Classification By: _____

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
1'						
2'						
3'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
4'						
5'						

GENERAL REMARKS:
FOR CONTINUOUS STANDARD PENETRATION TEST SEE PAGE 15-24

ED FORM 4.58 (Test)

Boring No. FD-85-6

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-6	Page 3 of 24

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
6'						
7'						
8'						
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
9'						
10'						
11'						
12'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
13'						

Site: FRANKLIN FALLS DAM N.H.	Boring No. FD-85-6	Page 4 of 24

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
14'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
15'						
16'						
17'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
18'						
19'						
20'						
21'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
22'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-6	Page 4 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
23'						
24'						
25'						
26'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
27'						
28'						
29'						
30'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL

Site: FRANKLIN FALLS DAM, N.H	Boring No. FD-85-6	Page 5 of 24

DEPTH (1"=)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
31'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
32'						
33'						
34'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
35'						
36'						
37'		6"			DRILLED WITH 6" AIR HAMMER	ROCK FILL
38'						
39'			39'		BOTTOM OF ROCK FILL	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-6	Page 6 of 24

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
40'					DROVE 41 ft OF 4" PROTECTIVE PIPE WITH 300 lb. HAMMER WASH OUT THE CASING WITH 3-7/8" ROLLER BIT	
41'					BOTTOM OF CASING	
42'		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT HIT A BOULDER AT 43 ft.	
43'						
44'						
45'		3-7/8"			WASH WITH 3-7/8" ROLLER BIT HIT A BOULDER AT 45'	
46'						
47'						

Site: FRANKLIN FALLS DAM, NH.

Boring No. FO-85-C

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	48'		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT.	
	49'						
	50'			50'			
0.0 SLOUGH	51'	1	1-3/8"	51.5'	33-34-36 / 55%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 50 ft. (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE, 10-15% SUBANGULAR GRAVEL, <5% NON PLASTIC FINES, BROWN, (SP)
	52'		3-7/8"	52.5'		WASHED WITH 3-7/8" ROLLER BIT	
0.0 SLOUGH	53'	2	1-3/8"	54'	17-29-34 / 50%	SAMPLED WITH A 2ft. x 1-3/8" I.D. SPLIT SPOON WITH 53 ft (A) RODS PLUS A 2ft. SPIDER.	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-30% NON PLASTIC FINES, DARK BROWN, (SM)
	54'		4"	55'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	55' 56'	3	1-3/8"		19-29-38 / 55%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 55 ft. OF (A) RODS AND 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 15-25% NON PLASTIC FINES, DARK BROWN (SM)

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-6	Page 8 of 24

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
				56.5'			
	57'		4"	57.5'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	58' 59'	4	1-3/8"	59'	26-27 -23 60%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 57 ft. (A) RODS AND A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-35% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, DARK BROWN, (SM)
	60'		4"	60'		WASHED WITH 4" FISH TAIL	
	61'	5	1-3/8"	61.5'	22-27 -23 60%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 60 ft. (A) RODS PLUS A 2 ft SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-30% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, DARK GRAY, (SM)
	62'		4"	62.5'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	63' 64'	6	1-3/8"	64'	14-18 -26 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 63 ft (A) RODS PLUS 2 ft SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 30-35% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, DARK GRAY, (SM)
			4"			WASHED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FO-85-6	Page 9 of 24

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
	65'		4"	65'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	66'	7	1-3/8"	66.5'	14-37 - 37 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 65 ft. (A) RODS PLUS 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 35-40% NON-PLASTIC FINES, LIGHT BROWN, (SM)
	67'		4"	67.5		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	68' 69'	8	1-3/8"	69	10-20 - 30 80%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 67.5 ft (A) RODS PLUS 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 35-40% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, (SM) REDDISH BROWN
	70'		4"	70'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	71'	9	1-3/8"	71.5'	16-29 - 28 75%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 70' of (A) RODS, PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE, 35-40% SLIGHTLY PLASTIC FINES, REDDISH BROWN (SM)
	72'		4"			WASHED WITH 4" FISH TAIL	
	73'	10					

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FO-85-6	Page 10 of 24

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0 SLOUGH	1" = 1' 74'	10	1-3/8"	74'	23-29 -13 90%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON, PLUS 73 ft. (A) RODS, PLUS A 2 ft. SPIDER.	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-30% SLIGHTLY PLASTIC FINES, DARK BROWN, (SM)
	75'		4"	75'		WASHED WITH 4" FISH TAIL	
0.0. SLOUGH	76'	11	1-3/8"	76.5'	13-19 -27 95%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON, WITH 75' (A) RODS, PLUS A 2' SPIDER	SANDY CLAY: FINE TO VERY FINE, MOSTLY SLIGHTLY PLASTIC FINES, 40-45% SLIGHTLY PLASTIC FINES, (SC) LIGHT GRAY.
	77'		4"	77.5'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	78' 79'	12	1-3/8"	79'	20-35 -39 85%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 77 ft (A) RODS PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-30% NON-PLASTIC FINES, DARK BROWN (SM)
	80'		4"	80'		WASHED WITH 4" FISH TAIL	
0.0	81'	13	1-3/8"	81'	20-29 -30 50%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON, WITH 80 ft (A) RODS, PLUS A 2 ft SPIDER	SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 15-20% NON PLASTIC FINES, LT. BROWN, (SP)

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-6	Page 11 of 24

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
	82'		4"	82.5'		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	83' 84'	14	1-3/8"	84'	16-30-45 / 60%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 83 ft of (A) RODS, PLUS A 2 ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 20-25% NON-PLASTIC FINES, Lt. BROWN, (SP-SM)
	85'		4"	85'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	86'	15	1-3/8"	86.5'	12-21-34 / 70%	SAMPLED WITH 2ft x 1-3/8" I.D. SPLIT SPOON, WITH 85 ft of (A) RODS, PLUS A 2 ft. SPIDER	CLAYEY SAND: FINE TO VERY FINE, MOSTLY FINE SAND, 30-35% SLIGHTLY PLASTIC FINES, GRAY, (SM)
	87'		4"	87.5'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	88' 89'	16	1-3/8"	89'	25-30-30 / 55%	SAMPLED WITH A 2ft x 1-3/8" I.D. SPLIT SPOON, PLUS 87 ft. of (A) RODS, WITH A 2ft. SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-30% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, BROWNISH GRAY, (SM)
	90'		4"	90'		WASHED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-6	Page 12 of 24

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0' SLOUGH	91'	17	1-3/8"	91.5'	16-31-45 / 70%	SAMPLED WITH 2ft x 1-3/8" I.D. SPLIT SPOON, WITH 90 ft of (A) RODS, PLUS A 2ft. SPIDER	SILTY SAND: MEDIUM TO FINE MOSTLY FINE, 20-25% NON-PLASTIC FINES, GRAY, (SM-SP)
	92'		4"	92.5		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	93' 94'	18	1-3/8"	94'	22-32-34 / 55%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON, WITH 93 ft (A) RODS, PLUS A 2ft. SPIDER	SILTY SAND: MEDIUM TO FINE GRAIN, MOSTLY FINE SAND, 20-25% NON PLASTIC FINES, Lt. BROWN, (SM)
	95'		4'	95'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	96'	19	1-3/8"	96	19-38-42 / 60%	SAMPLED WITH 2'-1-3/8" I.D. SPLIT SPOON WITH A 2ft SPIDER AND 95'(A) RODS	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-30% NON-PLASTIC FINES, GRAY, (SM)
	97'		4"	97.5		WASHED WITH 4" FISH TAIL	
0.0 SLOUGH	98'	20	1-3/8"	99'	22-28-36 / 40%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON WITH 97 ft A RODS PLUS A 2ft. SPIDER	SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 10-15% NON-PLASTIC FINES, BROWNISH GRAY, (SP)

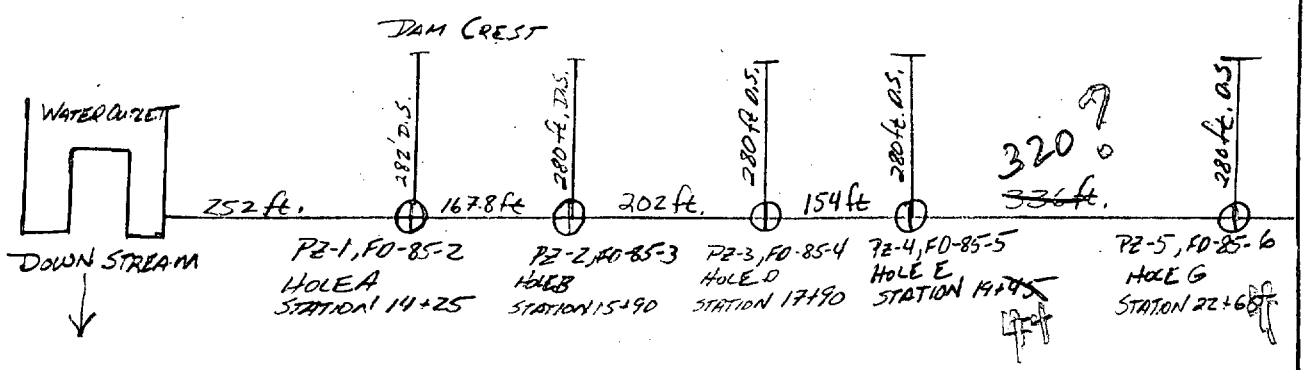
Site: FRANKLIN FALLS DAM N.H
Boring No: FO-85-6

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
6/27/85	1:00 PM	41	99	26	302.7 MSL	

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Boring No. FO-85-6

PIEZOMETER INSTALLATION REPORT

PROJECT: FRANKLIN FALLS DAM N.H. DATE: 6/27/85

OCATION (STA): 22+65 OFFSET FROM CENTER LINE: 280 ft D.S. PIEZ NO.: 5

PIEZ TYPE: CASAGRANDE DEPTH OF PIEZ: -98 ft RISER PIPE DIAM: 3/4" SCH 80 PVC

PIEZ TIP SET IN (SOIL TYPE): SAND SOIL SAMPLE NO.: 19 BORING DIAM: 4"

METHOD OF INSTALLATION:

TYPE OF PROTECTION FOR PIEZ: 41 ft of 4" STEEL PIPE VENT: 1/8" HOLE IN THE CAP

GROUND ELEV.: 328.7' MSL ELEV. TOP OF RISER: 330.7' MSL ELEV PIEZ TIP: 230.7' MSL

FILTER: SAND FROM ELEV: 228.7' MSL TO ELEV: 287.7' MSL

SEAL: BENTONITE BALLS FROM ELEV: 287.7' MSL TO ELEV: 300' MSL

INSTALLED BY: CARL MOON, MOBILE DISTRICT CONTRACT NO.: 60022 FOREMAN: D. ELLISON

DATE OF INSTALLATION: 6/27/85 DATE OF OBSERVATIONS: 6/27/85

METHOD OF TESTING PIEZ.:

TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
1:05	0	0 ft.	1:30	30	24 ft.			
1:06	1	1 ft.						
1:10	5	4 ft.						
1:20	10	11 ft.						
1:25	15	18 ft.						

REMARKS:

DON ELLISON
INSPECTOR

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM, N.H. Page 15 of 24

Hole No. FO-85-C Date 6/25

DRIVE 1

Depth of Test 50.0' to 51.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	6
	5
	6
	8
	8
6"	
	6
	9
	8
	8
	5
1'-0"	
	7
	8
	7
	6
	8
1'-6"	

Remarks

DRIVE 2

Depth of Test 52.5' to 54'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	2
	3
	3
	4
	5
6"	
	4
	6
	7
	6
	6
1'-0"	
	6
	6
	8
	7
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS Page 16 of 24

Hole No. FD-85-6 Date 6/25/85

DRIVE 3
Depth of Test 55' to 56.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	2
	3
	3
	4
	5
6"	
	4
	6
	7
	4
	7
1'-0"	
	8
	8
	7
	7
	8
1'-6"	

Remarks

DRIVE 4
Depth of Test 57.5' to 59'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	4
	4
	4
	6
	8
6"	
	10
	11
	8
	7
	7
1'-0"	
	7
	9
	9
	7
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 17 of 24

Hole No. ED-85-6 Date 6/25/85

DRIVE 5

Depth of Test 60.0' to 61.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
0	6
	4
	4
	4
	4
6"	
	6
	6
	6
	5
	4
1'-0"	
	5
	4
	4
	4
	6
1'-6"	

Remarks

DRIVE 6

Depth of Test 62.5' to 64'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ~~ft.~~
0	2
	3
	3
	3
	3
6"	
	4
	4
	3
	3
	4
1'-0"	
	5
	6
	5
	5
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 18 of 24

Hole No. FD-85-6 Date 6/25/85

DRIVE 7

Depth of Test 65' to 66.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ~~ft~~
0	2
	2
	3
	3
	4
6"	
	6
	8
	8
	8
	7
1'-0"	
	8
	7
	8
	7
	7
1'-6"	

Remarks

DRIVE 8

Depth of Test 67.5' to 69'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ~~ft~~.
0	2
	2
	2
	2
	2
6"	
	2
	6
	5
	4
	3
1'-0"	
	6
	7
	7
	5
	5
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 19 of 24

Hole No. FD-85-6 Date 6/25/85

DRIVE 9
Depth of Test 70.0' to 71.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft
0	2
	4
	3
	3
	4
6"	
	5
	6
	8
	6
	9
1'-0"	
	4
	5
	6
	7
	6
1'-6"	

Remarks

DRIVE 10
Depth of Test 72.5' to 74'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft
0	2
	4
	6
	5
	6
6"	
	5
	7
	6
	6
	5
1'-0"	
	6
	5
	5
	6
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 20 of 24

Hole No. FD-85-6 Date 6/25/85

DRIVE 11
Depth of Test 75.0' to 76.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	2
	3
	2
	3
	3
6"	WH
	3
	3
	6
	3
	4
1'-0"	WH
	3
	7
	6
	5
	6
1'-6"	WH

Remarks

DRIVE 12
Depth of Test 77.5' to 79'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	2
	3
	4
	6
	5
6"	WH
	6
	7
	8
	7
	7
1'-0"	WH
	6
	7
	8
	9
	7
1'-6"	WH

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 21 of 24

Hole No. FD-85-6 Date 6/25/85

DRIVE 13 Depth of Test 80.0' to 81.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	3
	3
	3
	5
	6
6"	
	6
	5
	6
	6
	6
1'-0"	
	6
	6
	6
	7
	5
1'-6"	

Remarks

DRIVE 14 Depth of Test 82.5' to 84'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft
0	2
	3
	4
	4
	3
6"	
	4
	5
	5
	8
	8
1'-0"	
	9
	9
	10
	9
	9
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 22 of 24

Hole No. FD-85-6 Date 6/26/85

DRIVE 15

Depth of Test 85.0' to 86.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	2
	2
	2
	2
	4
6"	
	3
	4
	4
	4
	6
1'-0"	
	5
	4
	10
	10
1'-6"	

Remarks

DRIVE 16

Depth of Test 87.5' to 89'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	2
	4
	7
	6
	5
6"	
	6
	5
	6
	6
	7
1'-0"	
	7
	5
	5
	6
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 23 of 24

Hole No. FD-85-6 Date 6/26/85

DRIVE 17

Depth of Test 90' to 91.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ FL
0	1
	2
	3
	3
	5
6"	
	5
	6
	6
	7
	7
1'-0"	
	7
	8
	8
	10
	11
1'-6"	

Remarks

DRIVE 18

Depth of Test 92.5' to 94'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ FL
0	2
	3
	3
	5
	7
6"	
	6
	5
	5
	7
	9
1'-0"	
	5
	6
	8
	7
	8
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS Page 24 of 24

Hole No. FD-85-6 Date 6/26/85

DRIVE 19

Depth of Test 95.0' to 96.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	2
	3
	4
	5
	5
6"	
	5
	10
	8
	8
	7
1'-0"	
	7
	8
	9
	9
	9
1'-6"	

Remarks

DRIVE 20

Depth of Test 97.5 to 99

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	4
	4
	5
	4
6"	
	5
	6
	6
	6
	5
1'-0"	
	5
	7
	7
	8
	9
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. W.O. 26

Site FRANKLIN FALLS DAM N.H. Page 1 of 33 Pages

Hole No. FD-85-7 Diam. (Casing) 4" Boring Started 7/9/85

FOR LOCATION SEE SKETCH ON PAGE 22 OF 30

Co-ordinates: N _____ E _____ Boring Completed 7/30/85

Drilled by MOBILE DISTRICT ARMY CORP. Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS, AND FIELD CLASSIFICATION OF SAMPLES,

Elevation Top of Hole 346.17' M.S.L. Casing Left in Place NONE Feet

Total Overburden Drilled 148 Feet

Elevation Top of Rock 198.17' M.S.L.

Elevation Bottom of Hole 181.17' M.S.L.

Total Rock Drilled 17 Feet

Total Depth of Hole 165 Feet

Core Recovered 50 %

Core Recovered 8 Ft.: ____ Diam. 1-7/8" In. NQ WIRELINE

Soil Samples 1-3/8" In. Diam. 28 No.

Soil Samples _____ In. Diam. ____ No. Water Table Depth SEE PAGE 22 OF 33

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	22'	DRILLED WITH 5-7/8" ROLLER BIT
		DROVE 16 Ft OF 4" CASING
22	71.5'	DRILLED WITH 3-7/8" ROLLER BIT
		DROVE CASING TO 40 ft
71.5	80'	DRILLED WITH 4" FISHTAIL
80	148	DRILLED WITH 3-7/8" ROLLER BIT
148	165	CORED WITH NQ BARREL

INDEX

Ground Water _____ Back of Page 22 of 33

Boring Location Sketch _____ Back of Page 22 of 33

Overburden Record _____ Page 1-21

Rock Drilling _____ Page 23 of 33

STANDARD PENETRATION TEST DATA Page 24-33

_____ Page ____

_____ Page ____

Prepared by Donald L Alison
Field Data Lab. Data

Submitted by Charles H. [illegible]

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site FRANKLIN FALLS DAM Page 22 of 33 Pages

Boring No. FO-85-7 Desig. _____ Diam. (Casing) 4"

FOR LOCATION SEE SKETCH ON PAGE 22 OF 33

Co-ordinates: N _____ E _____

Elevation Top of Boring 346.17' M.S.L.
Total Overburden Drilled 148 Feet
Elevation Top of Rock 198.17' M.S.L.
Total Rock Drilled 17 Feet
Elevation Bottom of Boring 181.17' M.S.L.
Total Depth of Boring 165 Feet
Core Recovered 50 % No. Boxes 1
Core Recovered 8 Ft. Diam. 1-7/8" In. NQ
Soil Samples 1-3/8" In. Diam. 28 No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140 lbs. Boring Started 7/9/85
Hammer Drop 30 in. Boring Completed 7/30/85
Casing Left NONE
Subsurface Water Data 22 of Page 33
Obs. Well No
Drilled By MOBILE DISTRICT ARMY CORP
Mfg. Des. Drill FAILING, HALE MASTER
Inspected By: DON ELLISON
Classification By: DON ELLISON
Classification By: _____

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		5-7/8"			DRILLED WITH 5-7/8" ROLLER BIT	ROCK FILL, BOULDERS AND COBBLES
1'						
2'		5-7/8"				
3'					DRILLED WITH 5-7/8" ROLLER BIT, LOST DRILLING FLUID	ROCK FILL, BOULDERS AND COBBLES
4'		5-7/8"				
5'						

GENERAL REMARKS: FOR STANDARD PENETRATION TEST SEE PAGES 24 OF 33

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 3 of 33

DEPTH (1" = 1')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATER ALS
6'		5-7/8"			DRILLED WITH 5-7/8" ROLLER BIT, LOST DRILLING FLUID	ROCK FILL, BOULDERS AND COBBLES
7'						
8'						
9'						
10'						
11'		5-7/8"			DRILLED WITH 5-7/8" ROLLER BIT, LOST DRILLING FLUID.	ROCK FILL, BOULDERS AND COBBLES.
12'						
13'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FO-85-7	Page 4 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
14'						
		5-7/8"			DRILLED WITH 5-7/8" ROLLER BIT, LOST DRILLING FLUID	ROCK FILL, BOULDERS AND COBBLES
15'						
16'						
17'						
18'						
19'						
		5-7/8"			DRILLED WITH 5-7/8" ROLLER BIT, LOST DRILLING FLUID, DROVE 16 ft OF 4" CASING	ROCK FILL, BOULDERS AND COBBLES
20'						
21'						
22'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 5 of 33

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
23'		5-7/8"			DRILLED WITH 3-7/8" ROLLER BIT, LOST DRILLING FLUID	ROCK FILL, MOSTLY COBBLES AND GRAVEL
24'						
25'						
26'						
27'						
28'		5-7/8"			DRILLED WITH 3-7/8" ROLLER BIT,	ROCKFILL, MOSTLY GRAVEL WITH A FEW COBBLES
29'						
30'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 6 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
31'						
		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT	
32'						
33'						
34'						
35'			35'			
		1-3/8"	35.5'	65 / 30%	SAMPLED WITH 2x1-3/8" I.D. SPLIT SPOON WITH 35 ft. (A) RODS WITH A 2 ft. SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 5-10% SUBANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, GRAY (SP)
36'					REFUSAL	
37'						
38'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 7 of 33

DEPTH (1" = 1')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
39'						
40'			40'			
	2	1-3/8"		44-60 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 40' of (A) RODS AND A 2 ft SPIDER	CLAYEY SAND! COARSE TO FINE, MOSTLY FINE SAND AND CLAY, 5-10% SUBANGULAR GRAVEL, 20-30% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, DARK GRAY, (SM)
41'			41'		REFUSAL	
42'						
43'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT, SOME BOLDERS AND COBBLES	
44'						
45'			45'			
	3	1-3/8"	45.5'	60 / 25%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 42 ft (A) RODS AND A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE SAND AND GRAVEL, 10-20% SUB-ROUNDED GRAVEL, 5-15% NON-PLASTIC FINES, GRAY (SP)
					REFUSAL	
46'						
49'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 8 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
48' 49' 50'		3-7/8"	50'		DRILLED WITH 3-7/8" ROLLER BIT, HIT SOME BOULDERS AND COBBLES	
50' 51'	4	1-3/8"	51.5'	14-24 19 / 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 50 ft. of (A) RODS AND A 2 ft. SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 5-10% NON-PLASTIC FINES, BROWN, (SP)
52' 53' 54' 55'		3-7/8"	55'		DRILLED WITH 3-7/8" ROLLER BIT, HIT BOULDERS AND COBBLES	
56'	5	1-3/8"	56'	32-60 / 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 53 ft of (A) RODS PLUS A 2 ft. SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE SAND, 5-10% SUB-ROUNDED GRAVEL, 5-7% NON-PLASTIC FINES, REDDISH BROWN (SP)

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 9 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
57'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT HIT SOME BIG COBBLES	
58'						
59'						
60'			60'			
	6	1-3/8"		32-60 50%	SAMPLED WITH 2"x1-3/8" S.O. SPLIT SPOON WITH 60 ft. OF (A) RODS PLUS A 2 ft. SPIDER REFUSAL	SILTY SAND: MEDIUM TO VERY FINE, MOSTLY FINE SAND AND 15-25% NON-PLASTIC FINES, GRAY, (SM)
61'			61'			
62'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT HIT SOME COBBLE AND BOULDERS	
63'						
64'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 10 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
65'			65'			
66'	7	1-3/8"	66.5'	30-40 35 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 65 ft. of (A) RODS PLUS A 2ft SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE SAND, 5-10% SUB-ROUNDED GRAVEL, < 5% NON-PLASTIC FINES, GRAY, (SP)
67' 68' 69' 70'			70'		DRILLED WITH 3-7/8" ROLLER BIT HIT A LARGE COBBLE OR BOULDER AT 68 ft. AND 69 ft.	
0.0' SLOUGH 71'	8	1-3/8"	71.5'	23-34 -23 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 70' of (A) RODS PLUS A 2 ft. SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 5-10% NON-PLASTIC FINES, LIGHT GRAY, (SP)
72'		4"	72.5		WASHED WITH 4" FISH TAIL HIT SOME COBBLES AND GRAVEL	
73'	9			23-41 -60	SAMPLE WITH 2'x1-3/8" I.D. SPLIT SPOON WITH	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 11 of 33

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0' SLOUGH	74'	9 CONT.	1-3/8"	74'	70%	70 ft of (A) ROD PLUS A 2 ft. SPIDER	SAND: MEDIUM TO FINE, MOSTLY MEDIUM GRAIN SAND, 5-10% NON-PLASTIC FINES, GRAY, (SP)
0.1' OVER WASH	75'		4"	75.1		WASHED WITH 4" FISH TAIL	
	76'	10	1-3/8"	76.1'	23-60 75%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 75 ft of (A) RODS PLUS A 2 ft. SPIDER REFUSAL	SAND: MEDIUM TO FINE GRAIN, MOSTLY FINE GRAIN, 5-10% NON-PLASTIC FINES, BROWN GRAY, (SP)
	77'		4"	77.5'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	78'	11	1-3/8"	78.0'	30-37-58 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 75 ft. of (A) RODS WITH A 2 ft. SPIDER	GRAVELLY SAND: COARSE TO FINE GRAIN, MOSTLY FINE AND MEDIUM GRAIN SAND, 10-15% SUB-ROUNDED GRAVEL, 10-15% NON-PLASTIC FINES, BROWNISH GRAY, (SP)
	79'		4"	80'		WASHED WITH 4" FISH TAIL	
0.0' SLOUGH	80' 81'	12	1-3/8"	81.5	26-26-31 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 80 ft of (A) RODS PLUS A 2 ft SPIDER	SAND: FINE TO COARSE, MOSTLY MEDIUM GRAIN SAND, 10-15% NON-PLASTIC FINES, BROWNISH GRAY, (SP)

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 12 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
82'		4"	82.3'		WASHED WITH 4" FISH TAIL	
0.2' SLOUGH 83'	13	1-3/8"	83.7'	25-31 -33 70%	SAMPLED WITH A 2' x 1-3/8" I.D. SPLIT SPOON WITH 80 ft of (A) RODS PLUS A 2ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE SAND, 15-25% SUB-ROUNDED GRAVEL, < 5% NON-PLASTIC FINES, GRAY, (SP)
84' 85' 86' 87'		3-7/8"	87.3'		DRILLED WITH A 4" FISH TAIL UNTILL WE HIT A BOULDER AT 85 ft. AND THEN CHANGED TO A 3-7/8" ROLLER BIT TO GET THROUGH THE BOULDER	
0.2' SLOUGH 88'	14	1-3/8"	88.8'	38-44 -48 65%	SAMPLED WITH A 2 ft x 1-3/8" I.D. SPLIT SPOON WITH 87 ft. OF (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY COARSE SAND, 25-30% SUB-ROUNDED GRAVEL, < 5% NON-PLASTIC FINES, LIGHT BROWN, (SP)
89'		3-7/8"	89.8'		DRILLED WITH 3-7/8" ROLLER BIT HIT GRAVEL AND COBBLES	
90'						

Site: FRANKLIN FALLS DAM, N.H	Boring No. FO-85-7	Page 13 of 33

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.2' SLOUGH	91'	15	1-3/8"	91.3'	31-32-38 / 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 90 ft. OF (A) RODS PLUS A 2 ft. SPIDER	SANDY GRAVEL: COARSE TO FINE GRAINED, MOSTLY COARSE SAND, 25-30% SUB-ANGULAR GRAVEL, <5% NON-PLASTIC FINES, REDDISH BROWN, (SP)
	92'		3-7/8"	92.3'		WASHED WITH 3-7/8" FISH TAIL	
0.2' SLOUGH	93'	16	1-3/8"	93.8'	28-32-48 / 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 90 ft. OF (A) RODS PLUS A 2 ft. SPIDER	SANDY GRAVEL: COARSE TO FINE, MOSTLY COARSE SAND AND GRAVEL, 30-35% SUB-ANGULAR GRAVEL, <5% NON-PLASTIC FINES, GRAYISH BROWN, (SP)
	94'		3-7/8"	95'		WASHED WITH 3-7/8" ROLLER BIT	
0.0 SLOUGH	95' 96'	17	1-3/8"	96.5'	27-24-30 / 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 95 ft. OF (A) RODS PLUS A 2 ft. SPIDER	SANDY GRAVEL: COARSE TO FINE, MOSTLY COARSE SAND AND GRAVEL, 35-40% SUB-ANGULAR GRAVEL, <5% NON-PLASTIC FINES, BROWNISH GRAY (SP)
	97'		3-7/8"	97.3'		WASHED WITH 3-7/8" ROLLER BIT	
0.2' SLOUGH	98'	18	1-3/8"		24-52-60/4" / 80%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 97 ft. OF (A) RODS PLUS A 2 ft. SPIDER. WE HAD REFUSAL AT 1.9 ft. REFUSAL	SAND: MEDIUM TO FINE, MOSTLY MEDIUM SAND, 5-10% NON-PLASTIC FINES, BROWNISH GRAY (SP)

Site: FRANKLIN FALLS DAM N.H.	Boring No. FO-85-7	Page 14 of 33

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				98.8'			
	99'		3-7/8"			WASHED WITH 3-7/8" ROLLER BIT	
	100'			100'			
0.0' SLOUGH	101'	19	1-3/8"	101.5'	30-32-40. 70%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 100 ft OF (A) RODS AND A 2 ft. SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM GRAIN SAND, 5-10% SUB-ROUNDED GRAVEL, 5-7% NON-PLASTIC FINES, LIGHT GRAY, (SP)
	102'		3-7/8"	102.4'		DRILLED WITH 3-7/8" ROLLER BIT, HIT GRAVEL AND COBBLES.	
0.1' SLOUGH	103'	20	1-3/8"	103.9'	18-22-32 75%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 102 ft (A) RODS PLUS A 2 ft SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM AND COARSE SAND, 5-7% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, LIGHT GRAY, (SP)
	104'		1-3/8"	104.8'		DRILLED WITH 3-7/8" ROLLER BIT	
0.2' SLOUGH	105' 106'	21	1-3/8"	106.3'	22-26-35	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 105 ft OF (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY MEDIUM GRAIN SAND, 5-7% SUB-ROUNDED GRAVEL, 5-10% NON PLASTIC FINES, LIGHT GRAY, (SP)
	107'						

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 15 of 33

DEPTH 1"=1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			107.3'			
0.2' SLOUGH 108'	22	1-3/8"	108.8'	23-31-33	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 107 ft. OF (A) RODS PLUS A 2 ft. SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY MEDIUM TO COARSE SAND, 5-7% SUB-ANGULAR GRAVEL, 5-7% NON-PLASTIC FINES, GRAYISH BROWN, (SP)
109'		3-7/8"	109.8'		DRILLED WITH 3-7/8" ROLLER BIT	
110' 0.2' SLOUGH 111'	23	1-3/8"	111.1'	50-47-60/1.3 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 110 ft. of (A) RODS PLUS A 2 ft. SPIDER REFUSAL	SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 25% SUB-ROUNDED GRAVEL, 5-10% NON-PLASTIC FINES, LIGHT BROWN (SP)
112'		3-7/8"	112.3'		DRILLED WITH 3-7/8" ROLLER BIT	
0.2' SLOUGH 113'	24	1-3/8"	113.7'	35-53-60 20%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 112 ft. OF (A) RODS REFUSAL	GRAVEL & COBBLES: COARSE TO FINE SAND, MOSTLY BROKEN COBBLES AND GRAVEL, GRAY, (SP)
114' 115'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT HIT SOME BOULDERS & COBBLES	

Site: FRANKLIN FALLS DAM N.H.	Boring No. FO-85-7	Page 16 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
116' 117'		3-7/8"	117.5'		DRILLED WITH 3-7/8" ROLLER BIT HIT BOULDERS AND COBBLES	
0.0' SLOUGH 118' 119'	25	1-3/8"	119'	58-59-60 / 60%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON PLUS A 2 ft. SPIDER. REFUSAL	SANDY GRAVEL: COARSE TO FINE, MOSTLY COARSE SAND & GRAVEL, 35-40% SUB-ANGULAR GRAVEL, SOME COBBLE FRAGMENTS, 5% NON-PLASTIC FINES, GRAY, (SP)
120' 121' 122' 123' 124'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT HIT A LOT OF BOULDERS AND COBBLES, VERY SLOW DRILLING.	

Site: FRANKLIN FALLS DAM, N.H.	Boring No. FD-85-7	Page 17 of 33

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			124.8'			
125'	26		124.9'	100	SAMPLED WITH A 2 ft x 1-3/8" I.D. SPLIT SPOON WITH 125 ft of A RODS.	GRAVEL & COBBLES
126'					DRILLED WITH 3-7/8" ROLLER BIT.	
127'		3-7/8"			WE HIT BOULDERS AND COBBLES AND DRILLING IS VERY SLOW.	
128'						
129'						
130'			130'			
0.0' SLOUGH	27	1-3/8"		65-100 / .3'	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON WITH A 2 ft. SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE SAND & GRAVEL, 35-40% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, BROWN (SP)
131'			130.8'		DRILLED WITH 3-7/8" ROLLER BIT	
		3-7/8"			WE HIT BOULDERS AND COBBLES	
132'						

Site: FRANKLIN FALLS DAM N.H.

Boring No. FD-85-7

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	133'						
	134'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT AND HIT A LOT OF BOULDERS	
	135'						
	136'						
	137'			137.9'			
0.1' slough	138'	28	1-3/8"	138.3'	10/ 3%	SAMPLED WITH A 2'x1-3/8" SPLIT SPOON	WEATHERED ROCK
	139'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT HIT A LOT OF BOULDERS DRILLING WAS SLOW AND ROUGH	
	140'						

Site: FRANKLIN FALLS DAM N.H

Boring No. FD-85-7

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
141'						
142'						
143'					DRILLED WITH 3-7/8" ROLLER BIT HIT A LOT OF BOULDERS AND DRILLING WAS SLOW AND ROUGH	
144'		3-7/8"				
145'						
146'						
147'					HIT A ROCK AT 147.8 ft. AND THE ROLLER BIT STOP CUTTING AT 148 ft.	
148'			148'		BED ROCK	BED ROCK: GRANITIC GNEISS WITH A PEGMATITE VEIN (DIKE)
149'		3"			CORED WITH NQ CORE BARREL TO 156'	

Site: FRANKLIN FALLS DAM, N.H.

Boring No. FD-85-7

DEPTH 1" =	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
150'					1ST RUN CONT.	
151'		3"				
152'						
153'						
154'						
155'						
156'			156'			
157'		3"			2ND RUN. LOST CORE BARREL AFTER DRILLING TO 165 ft.	

Site: FRANKLIN FALLS DAM N.H.

Boring No. FD-85-7

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
158'						
159'						
160'					LOST WATER AT 160 ft.	
161'						
162'						
163'						
164'						
165'					BOTTOM OF HOLE @ 165'	
166'						

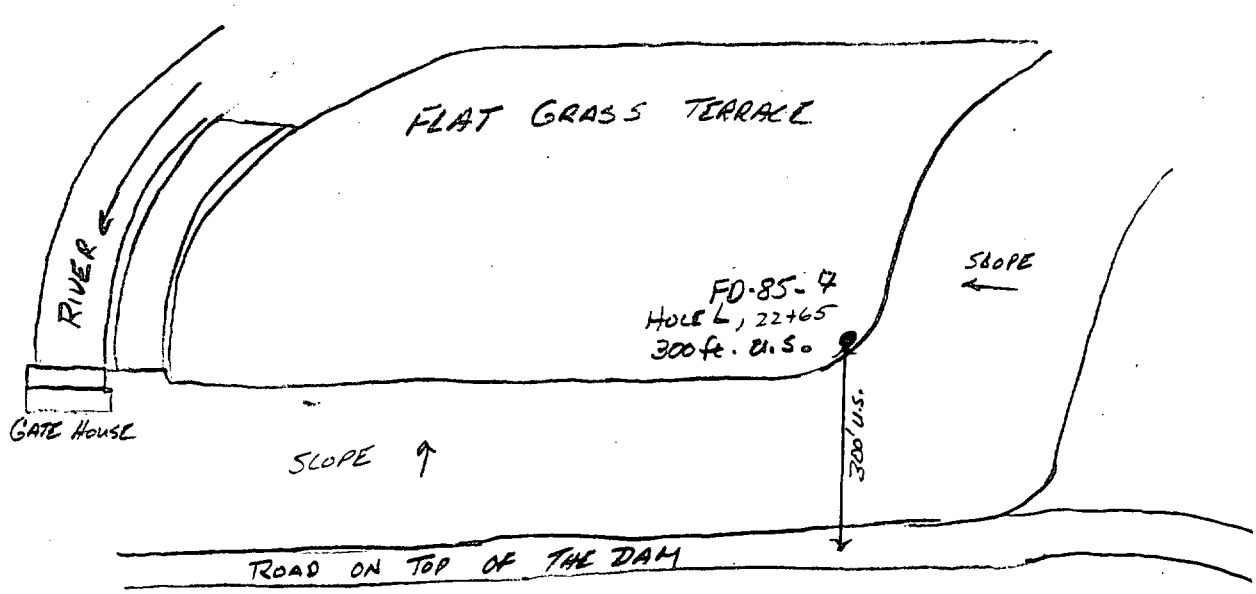
Site: FRANKLIN FALLS DAM N.H
Boring No: FD-85-7

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
7/9/85		NONE	6 ft.			LOST ALL DRILLING FLUID
7/10/85		16 ft	20 ft.			LOST ALL DRILLING FLUID
7/26/85		39 ft	160			LOST ALL DRILLING FLUID

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



Boring No. FD-8-7

FIELD LOG OF TEST BORING IN ROCK

SITE FRANKLIN FALLS DAM N.H. HOLE NO. FO-85-7 PAGE 23 of 33

DATE	DEPTH FT. FROM	DEPTH FT. TO	RUN FT.	RUN REC'V'Y FT.	REC'V'Y %	DRILLING BEHAVIOR FEED	DRILLING BEHAVIOR WATER	DRILLING BEHAVIOR REASON FOR PULL	ACTUAL DRILLING TIME	BIT NO. SIZE AND TYPE	ADDITIONAL REMARKS
7/25/85	148'	156'	8'	7.5'	93.7%	350 lbs.	GOOD CIRCULATION	QUITING TIME	4 HRS.	NQ WIRE LINE, 13 ft x 3" O.D. 1-7/8" I.D.	
7/26	156'	165'	9'	NONE	NONE	350 lbs.	LOST WATER AT 160'	DONE CORING	4.5 HRS.	SAME	THE CORE BARREL BROKE OFF 75' DOWN ON THE NW RODS.

TOTAL BED ROCK DRILLED 17 FEET

TOTAL BED ROCK RECOVERED 8 FEET

BED ROCK RECOVERY 50% PERCENT

DRILLER CARL MOON

INSPECTOR DON ELLISON

NED FORM DEC 63 130

REPLACES EDITION OF APR 49 WHICH MAY BE USED UNTIL EXHAUSTED

STANDARD PENETRATION TEST

Project FRANKLIN FALLS Page 24 of 33

Hole No. FD-85-7 Date 7/15/85

DRIVE 9

Depth of Test 72.5 to 74.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft
0	3
	5
	5
	5
	5
6"	
	7
	7
	8
	9
	10
1'-0"	
	10
	13
	11
	12
	10
1'-6"	

Remarks

DRIVE 10

Depth of Test 75' to 76.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
0	5
	5
	7
	7
	9
6"	
	14
	14
	14
REFUSAL	18
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS Page 25 of 33

Hole No. FD-85-7 Date 7/15/85

DRIVE 11
Depth of Test 77.5' to 79'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ~~ft~~
0	7
	6
	5
	5
	2
6"	
	7
	7
	7
	8
	8
1'-0"	
	9
	11
	15
	11
	12
1'-6"	

Remarks

DRIVE 12
Depth of Test 80' to 81.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ~~ft~~
0	5
	7
	5
	5
	4
6"	
	5
	5
	5
	5
	6
1'-0"	
	5
	7
	7
	6
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM, N.H. Page 26 of 33

Hole No. FD-85-7 Date 7/16/85

DRIVE 13

Depth of Test 87.3' to 83.7'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10. ~~Inch~~ ft.
0	4
	4
	5
	6
	6
6"	
	6
	6
	6
	7
	6
1'-0"	
	6
	6
	6
	6
	9
1'-6"	

Remarks

DRIVE 14

Depth of Test 87.3' to 88.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
0	5
	7
	8
	10
	8
6"	
	9
	9
	9
	9
	8
1'-0"	
	10
	10
	10
	8
	10
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 27 of 33

Hole No. FD-85-7 Date 7/16/85

DRIVE 15

Depth of Test 89.8' to 91.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/6 ft
0	6
	6
	6
	7
	6
6"	
	6
	5
	7
	7
	7
1'-0"	
	6
	7
	8
	7
	10
1'-6"	

Remarks

DRIVE 16

Depth of Test 92.3' to 93.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/6 ft
0	5
	6
	6
	6
	5
6"	
	5
	6
	6
	7
	8
1'-0"	
	9
	10
	9
	9
	11
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM, N.H. Page 28 of 33

Hole No. FD-85-7 Date 7/16/85

DRIVE 17
Depth of Test 95' to 96.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows ~~per Inch~~ 1/10 ft
0	4
	5
	6
	6
	6
6"	
	4
	5
	5
	5
	5
1'-0"	
	5
	6
	6
	6
	7
1'-6"	

Remarks

DRIVE 18
Depth of Test 97.3' to 99.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft	
0	4	
	5	
	5	
	5	
	5	
6"		
	7	
	8	
	12	
	11	
	14	
1'-0"		
	10	
	18	
	20	
	12	REFUSAL
1'-6"		

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 29 of 33

Hole No. FD-85-7 Date 7/16/85

DRIVE 19

Depth of Test 100' to 101.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	5
	4
	4
	6
	11
6"	
	6
	6
	6
	7
	6
1'-0"	
	8
	8
	8
	8
	8
1'-6"	

Remarks

DRIVE 20

Depth of Test 102.4' to 103.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	4
	3
	4
	4
	3
6"	
	4
	4
	4
	5
	5
1'-0"	
	5
	7
	6
	7
	7
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLINFALLS DAM, N.H. Page 30 of 33

Hole No. FD-85-7 Date 7/16/85

DRIVE 21
Depth of Test 104.8' to 106.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft
0	5
	3
	4
	4
	6
6"	
	5
	5
	5
	6
	5
1'-0"	
	6
	7
	7
	7
	8
1'-6"	

Remarks

DRIVE 22
Depth of Test 107.3' to 108.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
0	6
	4
	4
	4
	5
6"	
	5
	6
	7
	6
	7
1'-0"	
	5
	6
	7
	7
	8
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 31 of 33

Hole No. FD-85-7 Date 7/16/85

DRIVE 23

Depth of Test 109.8' to 111.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft.
0	10
	13
	10
	10
	7
6"	
	7
	8
	10
	11
	11
1'-0"	
	13
	30
REFUSAL	17
1'-6"	

Remarks

DRIVE 24

Depth of Test 112.5' to 113.9

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 ft
0	5
	5
	5
	10
	10
6"	
	7
	7
	8
	16
	15
1'-0"	
	12
	12
	14
	22
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM, N.H. Page 32 of 33

Hole No. FD-85-7 Date 7/18/85

DRIVE 25
Depth of Test 117.5' to 119.0'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
0	7
	10
	14
	15
	10
6"	
	10
	12
	10
	10
	7
1'-0"	
	9
	14
	14
	14
	14
1'-6"	

Remarks

DRIVE 26
Depth of Test 125' to 125.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
REFUSAL 0	100
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM N.H. Page 33 of 33

Hole No. FD-85-7 Date 7/19/85

DRIVE 27

Depth of Test 130' to 130.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
0	15
	12
	14
	14
	10
6"	
	22
	22
	20
1'-0"	
1'-6"	

Remarks

DRIVE 28 7/22

Depth of Test 137.9 to 138.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft
0	21
	25
	30
	25
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. W.O. 26

Site FRANKLIN FALLS DAM N.H.

Page 1 of 37 Pages

Hole No. FD-85-8 Diam. (Casing) 6" & 4"

Boring Started 7/30/85

FOR LOCATION SEE SKETCH ON PAGE 16

Co-ordinates: N _____ E _____

Boring Completed 8/9/85

Drilled by CARL MOON MOBILE DRILL

Report Submitted _____

Purpose of Exploration OBTAIN SOIL SAMPLES, FIELD BLOW COUNTS, AND FIELD CLASSIFICATION OF SAMPLES

Elevation Top of Hole 344.86' M.S.L.

Casing Left in Place NONE Feet

Total Overburden Drilled 104.6 Feet

Elevation Top of Rock 240.26' M.S.L.

Elevation Bottom of Hole 229.26' M.S.L.

Total Rock Drilled 9 ft. Feet

Total Depth of Hole 115.6 Feet

Core Recovered 100 % %

Core Recovered 9 Ft.; ____ Diam. 2-3/4 In.

Soil Samples 1-3/8" In. Diam. 27 No.

Soil Samples _____ In. Diam. ____ No.

Water Table Depth NOT DETERMINED DUE T REVERT MUD DRILLING FL

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	20	DRILLED WITH 5-7/8" ROLLER BIT
20	26	3-7/8" ROLLERBIT DROVE 4" CASING
		LOST DRILLING FLUID UNTILL NOW
26	35.5	DRILLED WITH 3-7/8" ROLLER BIT (REVERT)
35.5	82.4	DRILLED WITH 4" FISHTAIL (REVERT)
82.4	94.6	DRILLED WITH 3-7/8" ROLLERBIT (REVERT)
0	106	MOVED HOLE 2ft.. STARTED WITH 6"
		CASING TO 25 ft THEN DRILLED TO 106' AND SET 4" CASING

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Prepared by DAN ELLISON
Field Data

Lab. Data

Submitted by Charles H. Thom

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site FRANKLIN FALLS DAM-1 Page 1 of 27 Pages

Boring No. FD-85S Desig. _____ Diam. (Casing) 4" & 6"

SEE SKETCH ON PAGE 16 OF 29

Co-ordinates: N _____ E _____

Elevation Top of Boring 344.86' M.S.L.
Total Overburden Drilled 104.6 Feet
Elevation Top of Rock 240.26' M.S.L.
Total Rock Drilled 9 Feet
Elevation Bottom of Boring 229.26' M.S.L.
Total Depth of Boring 115.6 Feet
Core Recovered 100 % No. Boxes 1
Core Recovered 9 Ft. _____ Diam. 2-3/4" In.
Soil Samples 1-3/8" In. Diam. 27 No.
Soil Samples _____ In. Diam. _____ No.

Hammer Wt. 140 Boring Started 7/30/85
Hammer Drop 30 IN Boring Completed 8/9/85
Casing Left NONE
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By MOBILE DISTRICT
Mfg. Des. Drill FAILING HOLE MASTER
Inspected By: DON ELLISON
Classification By: DON ELLISON
Classification By: _____

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1'						
2'		5-7/8"			DRILLED WITH 5-7/8" ROLLER BIT, HIT A LOT OF BOULDERS	
3'						
4'						
5'						

GENERAL REMARKS: FOR SPT DATA SEE PAGES 18-29

NED FORM 58 (Test)

Boring No. FD-85-S

Site: FRANKLIN FALLS DAM, N.H.

Boring No. FD-85-8

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0 SLOUGH	6'	1	1-3/8"	6.5'	8-8-15 / 25%	SAMPLED WITH 2' x 1-3/8" I.D. SPLIT SPOON WITH 10 ft. OF A RODS	GRAVELY CLAY: COARSE TO VERY FINE, MOSTLY FINE SAND AND CLAY, 5-10% SUB ROUNDED GRAVEL, 15-25% SLIGHTLY PLASTIC FINES, DARK GRAY, (CL)
	7'	5-7/8"				WASHED WITH 5-7/8" ROLLER BIT	
	8'					HIT BOULDERS, COBBLES AND GRAVEL	
	9'					AND LOST ALL THE REVERT.	
	10'						
	11'						
	12'						
	13'						

Site: FRANKLIN FALLS DAM, N.H.

Boring No. FD-85-8

DEPTH 1" =	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
14'						
		5-7/8"			COBBLES AND GRAVEL, SOME BOULDERS, DRILLING IS SLOW AND WE ARE STILL LOOSING WATER	
15'						
16'						
17'						
18'						
19'		5-7/8"			MOSTLY COBBLES AND GRAVEL, STILL LOOSING WATER	
20'					AFTER DRILLING TO 20 ft. WE TRIED TO DRIVE 20 ft. OF 4" CASING BUT ONLY GOT 15 ft IN USING THE 300 lb. HAMMER. WE WASHED OUT THE CASING WITH A 3-7/8"	
21'		3-7/8"				

Site: FRANKLIN FALLS DAM, N.H. | Boring No. FD-85-8 | Page 5 of 29

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
22 23' 24'		3-7/8"	24.8'		ROLLER BIT AND WE LOST THE REVERT AS SOON AS WE GOT THROUGH THE CASING. DRILLING IS A LITTLE EASIER AND WE ARE IN MOSTLY GRAVEL WITH SOME COBBLES. WE DROVE 5 ft. MORE OF 4" CASING; THE BOTTOM OF THE CASING IS 20 ft. WE LOST THE FLUID PAST THE CASING.	
25' 0.2' SLOUGH 26'	2	1-3/8"	26.3'	10-20-25 65%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 25 ft. OF (A) RODS AND A 2ft. SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 15-20% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, REDDISH BROWN, (SP)
27' 28' 29'		3-7/8"	30'		WE DRILLED TO 28 ft. AND THE DROVE 6 ft. MORE OF 4" CASING PUTTING THE CASING DOWN TO 26 ft. WE GOT BACK DRILLING FLUID BACK NOW.	
30' 0.0' SLOUGH	3	1-3/8"		24-30-27	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 30 ft. of (A) RODS AND A 2ft. SPIDER	SAND AND GRAVELLY CLAY: (CLAY WAS ON TOP OF THE SAND.)

Site: FRANKLIN FALLS DAM, N.H.

Boring No. FD-85-8

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
31'	3		31.5'	60%		GRAVELLY CLAY: (COARE TO FINE) MOSTLY FINE SAND AND CLAY, 5% SUBROUNDED GRAVEL, 45-55% SLIGHTLY PLASTIC FINES, DARK GRAY, (SC)
32' 33' 34' 35'		3-7/8"	35'		DRILLED WITH 3-7/8" ROLLER BIT. DRILLING IS EASIER AND A LITTLE FASTER	SILTY SAND: COARSE TO FINE MOSTLY FINE SAND, 15-20% NON-PLASTIC FINES, REDDISH BROWN, (SP-SM)
0.0' SLOUGH	4	1-3/8"	35.5'	100 40%	SAMPLED WITH 2'x1-3/8" I.D SPLIT SPOON WITH 35 ft of (A) RODS AND A SPIDER	SAND: MEDIUM TO FINE, MOSTLY MEDIUM SAND, 20-25% NON-PLASTIC FINES, REDDISH BROWN, (SP)
36' 37'		4"	37.5'		DRILLED WITH 4" FISH TAIL AND DRILLING WAS SLOW	
0.0' SLOUGH 38'	5	1-3/8"	38.3'	41-60/.3 45%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 37 ft. OF (A) RODS AND A 2 ft SPIDER. REFUSAL	SILTY SAND: MEDIUM TO FINE SAND, MOSTLY FINE SAND, 45-50% NON-PLASTIC FINES, GRAY, (SM)
39'		4"			DRILLED WITH 4" FISH TAIL, DRILLING WAS SLOW.	

Site: FRANKLIN FALLS DAM N.H.

Boring No. FD-85-8

DEPTH	1" =	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
			4"	40'			
0.0 SLOUGH	40' 41'	6	1-3/8"	41'	31-60 55%	SAMPLED WITH 2'x1-3/8" I.D SPLIT SPOON WITH 40 ft. OF (A) RODS PLUS A 2ft. SPIDER REFUSAL	SAND: COARSE TO FINE, MOSTLY FINE SAND, 35-40% NON-PLASTIC FINES, LT. GRAY, (SP-SM)
	42'		4"	42.5'		DRILLED WITH 4" FISH TAIL DRILLING WAS SLOW AND HARD	
0.0' SLOUGH	43'	7	1-3/8"	43.3'	39-60/.3' 50%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 42 ft. OF (A) RODS PLUS A 2 ft. SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 15-20% NON-PLASTIC FINES, REDDISH GRAY, (SP)
	44		4"	45'		DRILLED WITH 4" FISH TAIL	
0.0' SLOUGH	45' 46'	8	1-3/8"	46'	42-60 60%	SAMPLED WITH A 2ft x 1-3/8" I.D SPLIT SPOON WITH 45' (A) RODS PLUS A 2 ft. SPIDER REFUSAL	SILTY SAND: MEDIUM TO FINE SAND, MOSTLY FINE SAND, 25-30% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, GRAYISH BROWN, (SM)
	47'		4"			DRILLED WITH 4" FISH TAIL	

Site: FRANKLIN FALLS DAM, N.H.

Boring No. FD-85-8

DEPTH (1" = 1')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0' SLOUGH; 48'	9	1-3/8"	47.5' – 48.3'	49-60 / .3' 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 47 ft of (A) RODS PLUS A 2ft. SPIDER REFUSAL	SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 5% SUB-ANGULAR SAND, 10-15% NON-PLASTIC FINES, REDDISH BROWN, (SP)
49'		4"			DRILLED WITH 4" FISH TAIL	
50'			50'			
0.0' SLOUGH; 51'	10	1-3/8"	51'	31-60 60%	SAMPLED WITH A 2ft x 1-3/8" I.D. SPLIT SPOON WITH 50 ft OF (A) RODS PLUS A 2ft SPIDER REFUSAL	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM GRAIN SAND, 5-10% SUB-ROUNDED GRAVEL, 5-10% NON-PLASTIC FINES, GRAY, (SP)
52'		4"	52.3'		DRILLED WITH 4" FISH TAIL	
0.2' SLOUGH; 53'	11	1-3/8"	53.2'	32-65 / .4' 60%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 52 ft of (A) ROD AND A 2ft SPIDER REFUSAL	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, <5% SUB-ROUNDED GRAVEL, 25-30% NON PLASTIC FINES, GRAY, (SM)
54'		4"	55'		DRILLED WITH 4" FISH TAIL	
0.0' SLOUGH; 55'	12	1-3/8"	55.8'	45-65 / .3' 55%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 55 ft. OF (A) RODS AND A 2ft SPIDER REFUSAL	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, <5% SUB-ROUNDED GRAVEL, 35-45% NON-PLASTIC FINES, GRAY, (SM)
56'						

Site: FRANKLIN FALLS DAM, N.H. | Boring No. FD-85-8 | Page 4 of 29

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
57'		4"	57.3'		DRILLED WITH 4" FISH TAIL	
0.2' SLOUGH 58'	13	1-3/8"	58'	42-69 / .3' 50%	SAMPLED WITH A 2ft x 1-3/8" I.D. SPLIT SPOON WITH 57 ft OF ARODS WITH A 2ft. SPIDER REFUSAL	SILTY SAND: COARSE TO VERY FINE, MOSTLY FINE GRAIN SAND AND SILT, 3-5% SUB-ANGULAR GRAVEL, 35-40% SLIGHTLY PLASTIC FINES, GRAY (SM)
59' 60'		4"	60'		DRILLED WITH 4" FISH TAIL	
0.0' SLOUGH	14	1-3/8"	60.9'	62-66 / .4' 60%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 60' of (A) RODS PLUS A 2ft. SPIDER REFUSAL	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, 25-30% NON-PLASTIC FINES, 3-5% SUB-ANGULAR GRAVEL, GRAY, (SM-SP)
61' 62'		4"	62.3'		DRILLED WITH A 4" FISH TAIL	
0.2' SLOUGH 63'	15	1-3/8"	63.1'	46-60 / .3' 55%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 62 ft. OF (A) RODS PLUS A 2 ft. SPIDER REFUSAL	GRAVELY SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 10-15% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, GRAY, (SP)
64'		4"			DRILLED WITH A 4" FISH TAIL	

Site: FRANKLIN FALLS DAM, N.H. | Boring No. FD-85-8 | Page 10 of 29

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				64.9'			
0.1' SLOUGH	65' 66'	16	4"	66.4'	29-30 -30 65%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 65 ft. of (A) RODS PLUS A 2 ft. SPIDER	SANDY GRAVEL: COARSE TO FINE, MOSTLY COARSE SAND AND GRAVEL, 55-60% SUB-ANGULAR GRAVEL, 5-7% NON-PLASTIC FINES, REDDISH GRAY, (SP)
	67'			67.3'		DRILLED WITH 4" FISH TAIL	
0.2' SLOUGH	68'	17	1-3/8"	68.8'	26-33 -46 70%	SAMPLED WITH A 2ft. x1-3/8" I.D. SPLIT SPOON WITH 67 ft. OF RODS AND A 2 ft SPIDER	GRAVELY SAND: COARSE TO FINE, MOSTLY FINE SAND, 5-10% SUB-ANGULAR GRAVEL, 20-25% NON-PLASTIC FINES, LT. GRAY (SP)
	69' 70'		4"	70'		DRILLED WITH 4" FISH TAIL	
0.0' SLOUGH	71'	18	1-3/8"	71.5'	19-32 -27 50%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 70 ft. OF A RODS PLUS A 2ft. SPIDER	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, 15-20% SUB-ANGULAR GRAVEL, 35-40% NON-PLASTIC TO SLIGHTLY PLASTIC FINE, BROWNISH GRAY, (SP-SM)
	72'		4"	72.3'		DRILLED WITH 4" FISH TAIL	
0.2' SLOUGH	73'	19	1-3/8"		19-23 -28 65%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 72 ft OF A RODS	SANDY GRAVEL: COARSE TO FINE, MOSTLY MEDIUM SAND, 30-35% SUB-ANGULAR GRAVEL, 10-15% NON-PLASTIC FINES,

Site: FRANKLIN FALLS DAM, N.H. | Boring No. FD-85-8 | Page 11 of 29

DEPTH	1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		19 CONT.		73.3'			REDDISH GRAY, (SP)
	74'		4"	74.9'		DRILLED WITH 4" FISH TAIL	
0.1' SLOUGH	75' 76'	20	1-3/8"	76.4'	21-30-29 60%	SAMPLED WITH A 2ft x 1-3/8" I.D. SPLIT SPOON WITH 75 ft. OF A RODS AND A 2 ft SPIDER	SAND: COARSE TO FINE, MOSTLY MEDIUM SAND, 15-20% SUB-ANGULAR GRAVEL, 15-20% NON-PLASTIC FINES, Lt. BROWN, (SP)
	77'		4"	77.5'		DRILLED WITH 4" FISH TAIL	
0.0' SLOUGH	78' 79'	21	1-3/8"	79'	25-26-26 30%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON WITH 77 ft. OF A RODS AND A 2ft. SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY MEDIUM AND COARSE SAND, 35-40% SUB-ANGULAR GRAVEL, 20-25% NON-PLASTIC FINES, REDDISH GRAY, (SP)
			4"	79.5'		DRILLED WITH 4" FISH TAIL	
0.1' SLOUGH	80 81'	22	1-3/8"	81.4'	21-18-19 40%	SAMPLED WITH A 2ft x 1-3/8" I.D. SPLIT SPOON WITH 80 ft of (A) RODS AND A 2Ft SPIDER	SILTY SAND: COARSE TO FINE, MOSTLY FINE SAND, 10-20% SUB-ROUNDED GRAVEL, 25-30% NON-PLASTIC TO SLIGHTLY PLASTIC FINES, (SM), GRAY

Site: FRANKLIN FALLS DAM, N.H. | Boring No. FD-85-8 | Page 12 of 29

DEPTH		CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	1" = 1'						
	82'			82.4'		DRILLED WITH 4" FISH TAIL	
0.1' SLOUGH	83'	23	1-3/8"	83.5'	15-15-21 45%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 82 ft. OF (A) RODS WITH A 2 ft. SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE SAND, 25-30% SUB-ANGULAR GRAVEL, 5-10% NON-PLASTIC FINES, LT. GRAY, (SP)
	84'		3-7/8"	85'		DRILLED WITH 3-7/8" ROLLER BIT, HIT BOULDERS	
0.0' SLOUGH	85' 86'	24	1-3/8"	86.5'	19-16-22 35%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 85 ft. OF (A) RODS PLUS A 2 ft. SPIDER	GRAVELLY SAND: COARSE TO FINE, MOSTLY COARSE SAND AND GRAVEL, 25-30% SUB-ANGULAR GRAVEL, 15-20% NON-PLASTIC FINES, REDDISH BROWN, (SP)
	87'		3-7/8"	87.5'		DRILLED WITH 3-7/8" ROLLER BIT HIT SOME BOULDERS AND COBBLES	
0.0' SLOUGH	88' 89'	25	1-3/8"	89'	17-22-24 25%	SAMPLED WITH 2'x1-3/8" I.D. SPLIT SPOON WITH 87 ft. OF (A) RODS PLUS A 2 ft. SPIDER	SAND: COARSE TO FINE, MOSTLY FINE SAND, 15-20% NON-PLASTIC FINES, LT. GRAY, (SP)
	90'		3-7/8"			DRILLED WITH 3-7/8" ROLLER BIT HIT A BOULDER AT 89.4'	

Site: FRANKLIN FALLS DAM, N.H. | Boring No. FD-85-8 | Page 13 of 29

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0' SLANT; 91'	26	1-3/8"	90' – 91.5'	15-21-20; 60%	SAMPLED WITH A 2ft. X 1-3/8" I.D. SPLIT SPOON WITH 90 ft. of (A) RODS PLUS A SPIDER	SILTY SAND: MEDIUM TO FINE, MOSTLY FINE SAND, 25-30% NON-PLASTIC FINES TO SLIGHTLY PLASTIC FINES, GRAY, (SM)
92', 93', 94'		3-7/8"	94.6		DRILLED WITH 3-7/8" ROLLER BIT, HIT A LOT OF BOULDERS. DRILLING IS SLOW AND ROUGH. ROLLER BIT STOPPED CUTTING AT 94.6.	
95', 96', 97', 98'			98.4'		TOP OF A BIG BOULDER. TRIED TO CORE THROUGH IT BUT LOST A 6" ROLLER BIT IN THE HOLE AND HAD TO MOVE 2ft AND START AGAIN. STARTED THE NEW HOLE WITH A 6" ROLLER BIT THEN PUT IN 25 ft of 6" CASING. WE DRILLED TO THE ROCK WITH A 5-5/8" ROLLER BIT AND SET 106 ft of 4" CASING.	

Site: FRANKLIN FALLS DAM, N.H. | Boring No. FD-85-8 | Page 14 of 29

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
99'	27	1-3/8"	99.1'	68-60 / 50%	SAMPLED WITH A 2'x1-3/8" I.D SPLIT SPOON	GRAVELLY SAND COARSE TO FINE, MOSTLY COARSE, 15-20% SUB-ANG GRAVEL, <5% N.P. FINES, BROWN (SP)
100' 101' 102'		3-5/8"	102.3'		DRILLED WITH 4-5/8" ROLLER BIT	
0.2' SLOUGH 103'	28	1-3/8"	103.5'	94-60 / 5%	SAMPLED WITH A 2'x1-3/8" I.D. SPLIT SPOON	WEATHERED ROCK:
104'		3-5/8"	104.6'		DRILLED WITH 4-5/8" ROLLER BIT HIT A LOT OF BOULDERS TOP OF BED ROCK	
105' 106'		3-5/8			CONT. DRILLING WITH 3-5/8" ROLLER BIT AND CUT 2ft IN 2 HRS.	
107					CORED WITH 2-3/4" X 3-3/8" BARREL	GRANITIC GNEISS

Site: FRANKLIN FALLS DAM, N.H.

Boring No. FD-85-8

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
108'						
109'					CORED WITH 2-3/4" x 3-7/8" x 10 ft CORE BARREL	
110'						
111'						
112'						
113'						
114'						
115'						
			115.6'		BOTTOM OF HOLE	

Site: FRANKLIN FALLS DAM N.H
Boring No: FD-85-8

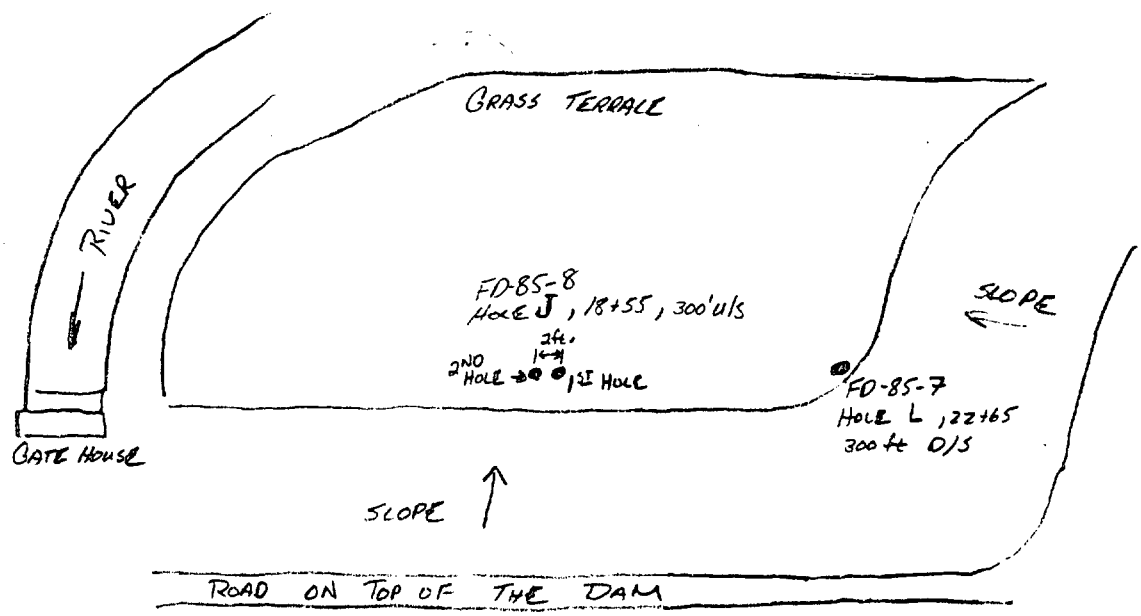
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
						*WATER DEPTH NOT DETERMINED DUE TO REVERT MUD DRILLING FLUID.

Note: Depths are in feet below original ground

4

BORING LOCATION SKETCH



FIELD LOG OF TEST BORING IN ROCK

SITE FRANKLIN FALLS DAM N.H. HOLE NO. FD-85-8 PAGE 17

DATE	DEPTH FT. FROM	DEPTH FT. TO	RUN FT.	RUN REC'V'Y FT.	REC'V'Y %	DRILLING BEHAVIOR FEED	DRILLING BEHAVIOR WATER	DRILLING BEHAVIOR REASON FOR PULL	ACTUAL DRILLING TIME	BIT NO. SIZE AND TYPE	ADDITIONAL REMARKS
8/9/85	106.6	115.6'			100%	350	Good Circulation	END OF RUN	2 1/2 HRS	3-7/8"	

TOTAL BED ROCK DRILLED 9 FEET

TOTAL BED ROCK RECOVERED 9 FEET

BED ROCK RECOVERY 100 PERCENT

DRILLER Carl Moen

INSPECTOR Don Ellison

NED FORM 130

REPLACES EDITION OF APR ... CH MAY BE USED UNTIL EXHAUSTED

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 18 of 29

Hole No. FD 85-8 Date 7/31

DRIVE 5

Depth of Test 37.5' to 38.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	6
	6
	12
	12
6"	
	20
	20
	20
1'-0"	
1'-6"	

Remarks

DRIVE 6

Depth of Test 40' to 41'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	5
	7
	7
	7
6"	
	10
	9
	12
	20
	9
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 19 of 29

Hole No. FD-85-8 Date 7/3/85

DRIVE 7

Depth of Test 42.5' to 43.3'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	6
	8
	10
	10
6"	
	20
	20
	20
1'-0"	
1'-6"	

Remarks

8/1/85

DRIVE 8

Depth of Test 45' to 46'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	7
	10
	10
	10
6"	
	11
	14
	12
	12
	12
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 26 of 29

Hole No. FD-85-8 Date 8/1/85

DRIVE 9
Depth of Test 47.5' to 48.3'

Blow	Gage Reading	Penetration per Blow		Blows per 1/10 ~~Inch~~ Ft.
			0	
1				9
2				8
3				9
4				9
5				14
6			6"	
7				19
8				21
9				20
10				
11				
12			1'-0"	
13				
14				
15				
16				
17				
18			1'-6"	
19				
20				

Remarks

DRIVE 10
Depth of Test 50 to 51

Blow	Gage Reading	Penetration per Blow		Blows per 1/10 ~~Inch~~ Ft.
			0	
1				7
2				6
3				6
4				6
5				6
6			6"	
7				7
8				11
9				15
10				22
11				
12			1'-0"	
13				
14				
15				
16				
17				
18			1'-6"	
19				
20				

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS Page 21 of 29

Hole No. FD-85-8 Date 8/1/85

DRIVE 11
Depth of Test 52.3' to 53.2'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	6
	6
	4
	8
6"	
	12
	13
	20
	20
1'-0"	
1'-6"	

Remarks

DRIVE 12
Depth of Test 55' to 55.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ ft.
0	8
	7
	7
	10
	13
6"	
	20
	25
	20
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 22 of 29

Hole No. FD-85-8 Date 8/1/85

DRIVE 13
Depth of Test 57.3' to 58'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	5
	6
	10
	10
	11
6"	
	25
	22
	22
1'-0"	
1'-6"	

Remarks

DRIVE 14
Depth of Test 60' to 60.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	10
	12
	12
	18
	10
6"	
	17
	16
	13
	20
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 23 of 29

Hole No. FD-85-8 Date 8/1/85

DRIVE 15

Depth of Test 62.3' to 63.1'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	7
	11
	10
	8
	10
6"	
	10
	20
	30
1'-0"	
1'-6"	

Remarks

DRIVE 16

Depth of Test 64.9' to 66.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	6
	6
	5
	6
	6
6"	
	9
	5
	4
	6
	6
1'-0"	
	6
	6
	6
	6
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 24 of 29

Hole No. FD-85-8 Date 8/1/85

DRIVE 17
Depth of Test 67.3' to 68.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	4
	4
	4
	6
	4
6"	
	6
	7
	7
	6
	7
1'-0"	
	8
	8
	9
	11
	10
1'-6"	

Remarks

DRIVE 18
Depth of Test 70' to 71.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	3
	3
	4
	4
6"	
	6
	5
	6
	8
	7
1'-0"	
	6
	7
	5
	5
	4
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 25 of 29

Hole No. FD-85-8 Date 8/1/85

DRIVE 19
Depth of Test 72.3' to 73.8'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	4
	3
	3
	4
	3
6"	
	3
	5
	5
	5
	5
1'-0"	
	5
	6
	6
	5
	6
1'-6"	

Remarks

DRIVE 20
Depth of Test 74.9' to 76.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	4
	4
	3
	5
	5
6"	
	6
	5
	7
	7
	5
1'-0"	
	6
	6
	5
	6
	6
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 26 of 29

Hole No. FD-85-8 Date 8/2/85

DRIVE 21
Depth of Test 77.5' to 79'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	5
	5
	4
	5
	6
6"	
	6
	5
	6
	5
	4
1'-0"	
	4
	4
	6
	6
	6
1'-6"	

Remarks

DRIVE 22
Depth of Test 79.9' to 81.4'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft.
0	7
	4
	3
	4
	3
6"	
	4
	4
	3
	4
	3
1'-0"	
	4
	4
	3
	4
	4
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 27 of 29

Hole No. FD-85-8 Date 8/2/85

DRIVE 23
Depth of Test 82.4 to 83.9'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	4
	2
	3
	3
	3
6"	
	2
	3
	3
	4
	3
1'-0"	
	4
	4
	4
	4
	5
1'-6"	

Remarks

DRIVE 24
Depth of Test 85' to 86.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	4
	4
	4
	4
	3
6"	
	2
	3
	3
	4
	4
1'-0"	
	4
	5
	5
	4
	4
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 28 of 29

Hole No. FD-85-8 Date 8/2/85

DRIVE 25
Depth of Test 87.5' to 89'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	4
	4
	3
	3
	3
6"	
	4
	4
	6
	4
	4
1'-0"	
	4
	6
	5
	4
	5
1'-6"	

Remarks

DRIVE 26
Depth of Test 90' to 91.5'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per 1/10 ~~Inch~~ Ft
0	3
	3
	3
	3
	3
6"	
	3
	5
	4
	4
	5
1'-0"	
	4
	4
	4
	4
	4
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

STANDARD PENETRATION TEST

Project FRANKLIN FALLS DAM Page 29 of 29

Hole No. FD-85-8 Date 8/2/85

DRIVE 27

Depth of Test 92.5' to 94'

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per ~~Inch~~ 1/10 Ft.
0	
	3
	2
	3
	4
	3
6"	
	3
	3
	2
	4
	5
1'-0"	
	3
	4
	4
	4
	4
1'-6"	

Remarks

Depth of Test _____ to _____

Blow	Gage Reading	Penetration per Blow
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	Blows per Inch
0	
6"	
1'-0"	
1'-6"	

Remarks

MRO Form 1713, 1 Dec 78 (Temp)

APPENDIX F

Survey Notes

FRANKLIN FALLS DAM
PROJECT No
CLIENT
SET BORING PTS

BOB SMITH
BOB PAGE
Ed PACKARD
Tem = 48
RAIN
5-6-85
Topcon GTS 2
PRIZ #1
TAPE #A

5-7-85
cloudy
Tem 55°
Topcon GTS 2
Level WILD
TAPE C

5-6-85
6:30 office
10:26 DAM
12:00 LUNCH 1/2 hr
5:00 DAM
5:30 HOTEL

[illegible]
[illegible] HOTEL
[illegible] DAM
12:30 LUNCH 1/2 hr
2:00 DAM
4:30 OFF[illegible]

BS
BP
EP

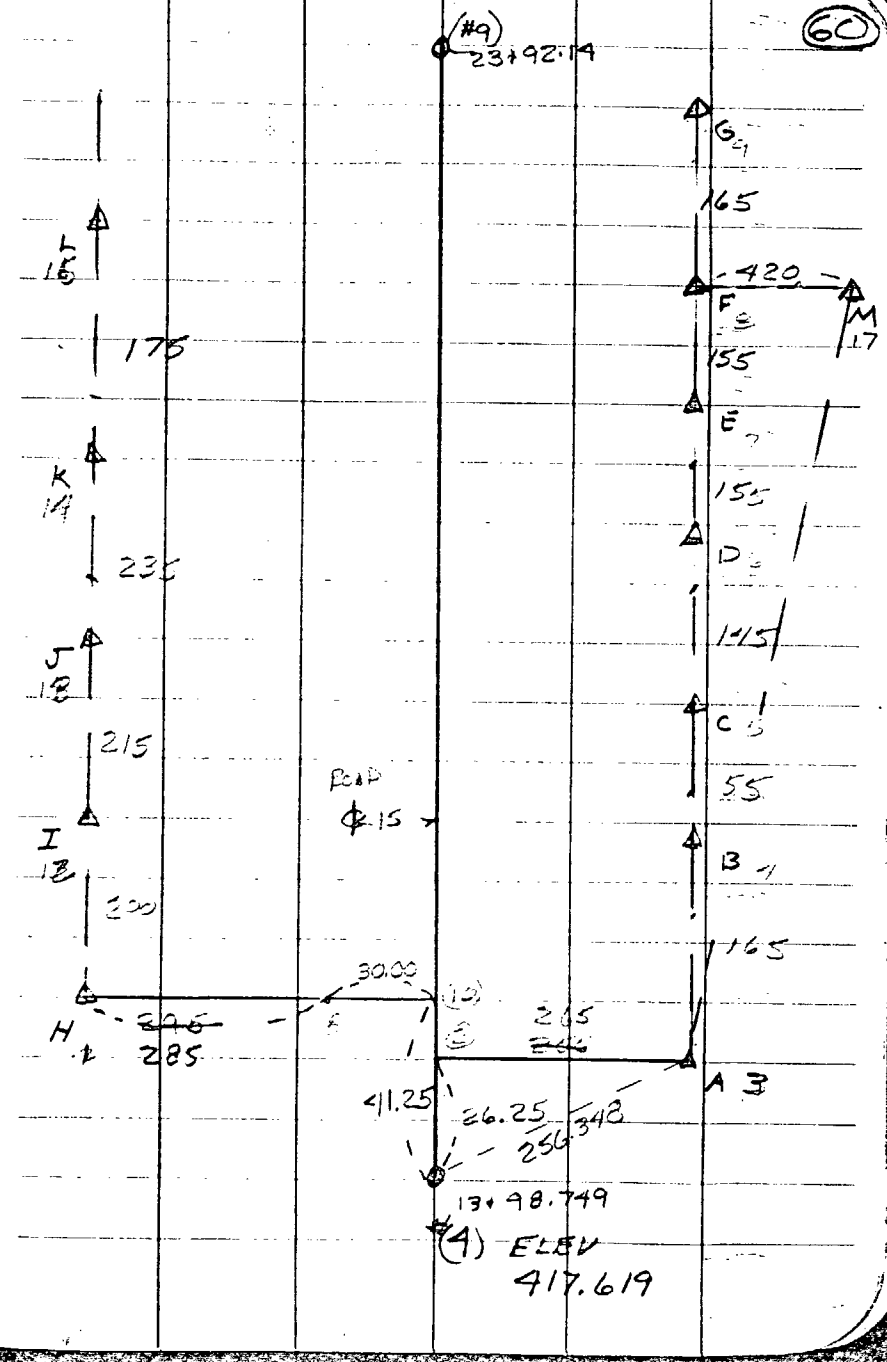
5-6-85

FRANKLIN FALLS DAM

TC #4 BS ON #9 & RT

9-1-3	84-32-51	350.345
	TC #3 BS ON #1 & RT	
1-3-4B	95-50-39	165.
C5		220
D6		365
E7		520
F8		[illegible]
G9		[illegible]

	TC #1 BS ON #9 & RT	
9-1-10	00-00	41.25
	TC #10 BS ON #1 & RT	
1-10-18	90-00-00	30'
	TC #18 BS ON #10 & RT	
10-18-11	180-00-00	295'
	TC #11 BS ON 18 & RT	
18-11-I 12	270-00-00	200
J		415
K		650
L		825



Franklin Fallon 5-6 [illegible]

π @ 3 BS 1 ∡ RT

1-3-17 127-46-06 795.00

Temp 48° PPM-2

4.85 [illegible] ELEV 417.62

π @ #1 BS ON 9 ∡ RT

9-1-3 84-07-21 256.348

HT = 5.0

(A)

9-2-3 90-00-00 265.00

279.96

108-46-04

264.98

[illegible] 3 [illegible]

108-45-45

265.01 90.02

4.85

365

4.85 422.47 #1 417.62

4.71

TOP STA #2

417.76

(63) BP/ CP/ BS ⊼ FRANKLIN FALLS DAM

MO. 4.69 ⊼ @ #3 BS #2 ∡ RT

280.00
.015
.015

71-25-45

2-3-1 354-21-10 281.22 71-31-39
.23
.21

T. L. F. BS #1 ∡ RT

270-00-00 420'

270-00-00
267-41-00
2-18-55 419.55

(64)

18.41.68

417.76
.360
328.16

+.10' 280.35 71-22-17
.345
.360 288-50-14

417.76
84.27
333.49 Top STK #3

+.10' 279.905 71-26-00
.910
.92 288-50-32

18.70444
29.795
5.00
84.795

(328.15) FLEV TOP STK #3

419.55
420
2-18-55

3A

(65) BOB S
BOB P.
ED P.

5-7-85

[illegible]

Tem 48° PPM = +2

TC @ 18 BS ON 10 X RT

(H)
10-18-11 180-00-00 285.00

247.295
.295 107-12-39

293.74
.735
.730 104-33-46

294.31
.32
.315 104-27-10

104-27-[illegible]
[illegible] 49-44

7.68 422.30 [illegible] 417.62

4.67 MD ~~417.62~~

417.63

(66)

422.30
[illegible]
348.86
[illegible]
343.86 TOP PTH #11

422.30
72.748
349.552
5
344.55 Top STK #11 (H)

(61) FRANKLIN FALLS DAM

MV 4.74 ⊼ @ #11 85 ON #18 & KT

294.435 75-42-56
.435 284-33-22

~~343.86~~
~~78.74~~
~~422.60~~
~~+5.00~~
~~417.60~~ TOP STK 18

344.55
4.04
34[illegible]29
[illegible]
422.61
[illegible]
417.61 TOP STK #18

			~~344.55~~	
3.11	331.26		328.15	TOP STK A
		3.55		
			327.71	GROUND @ STK A
		2.02		
			329.24	GROUND @ STK B
		2.32		
			328.94	GROUND @ STK C
		1.65		
2.52	332.14		329.61	TOP STK C
		3.49		
			328.65	GROUND @ STK D
		4.0		
			328.14	GROUND @ STK E
		3.84		
			[illegible]	[illegible]
		3.44		
			328.7	GROUND @ STK G
		4.85		
0.37	327.66		327.29	TP ~~Rock~~ Top PIPE

		327.66			
			4.80		
	2.01	325.87		319.36	TP Rock
			6.50		
				315.30	Ground Surf M
			6.07		
	3.87	321.87		315.80	Top Stn M
			2.52		
	6.40	319.35		319.15	[illegible]
			1.40		
	6.98	312.93		325.9[illegible]	TP Rock
			4.01		
				328.92	[illegible]
			3.31		
				329.62	[illegible]

73 BoBS BoBF FD P

FRANKLIN FALLS DAM

5 [illegible] 85

74

[illegible]	350.00		344.56		TOP STK H
		5.83			
				344.17	GROUND @ STK H
			5.79		
				344.21	GROUND @ STK I
			5.14		
				344.86	GROUND @ STK J
			[illegible]		
				344.32	GROUND @ STK K
			5.83		
				346.17	GROUND @ STK L