Client: ms consultants | *Project:* FRA-70-8.93 | *Job No.* 0221-1004.01

LOG OF: Boring B-041-0-08 | *Location:* | *Date Drilled:* 6/23/2008 to 6/25/2008

WATER OBSERVATIONS:
Water seepage at: 13.0'-15.5', 52.0'-92.0'
Water level at completion: 37.1' (includes drilling water)

FIELD NOTES:
Advanced boring using 4.0" diameter flush joint casing.

Depth (ft)	Elev. (ft) 634.7	Blows per 6"	Recovery	Sample No. Drive	Sample No. Press / Core	Hand Penetrometer (tsf)	DESCRIPTION	Graphic Log	GRADATION % Aggregate	% C. Sand	% M. Sand	% F. Sand	% Silt	% Clay	STANDARD PENETRATION (N60) Natural Moisture Content, % - ● PL ⊢ LL Blows per foot - ○ / Non-Plastic - NP (10 20 30 40)
127.5	632.2						Shale, blue-gray, weak, highly weathered, thinly laminated, slightly calcareous, jointed, moderately to highly fractured, tight, with typical narrow fractures, slightly rough; RQD 42%, Loss 0%. Contains dark gray, well cemented shale zones [thin, dark bands]. Dark shale zones are typically 1-2 inches thick, spaced at intervals of 12 to 18 inches.								
130		Core 120"	Rec 120"	RQD 58%	R3		Interbedded Shale [93%] and Limestone [7%], RQD 78%, Loss 0%; Shale, dark gray, weak, highly weathered, thinly laminated, calcareous, jointed, highly fractured with typical, tight, slightly rough shear fractures; Limestone, light gray, strong, slightly weathered, pyritic, unfractured. @ 133.5' - 134.0', qu = 1695 psi								
135.0 135	624.7						Bottom of Boring - 135.0'								
140															
145															
150															