Minnesota Department of Transportation Geotechnical Section

Boring Log Descriptive Terminology (English Units)

USER NOTES, ABBREVIATIONS AND DEFINITIONS - Additional information available in Geotechnical Manual.

This boring was made by ordinary and conventional methods and with care deemed adequate for the Department's design purposes. Since this boring was not taken to gather information relating to the construction of the project, the data noted in the field and recorded may not necessarily be the same as that which a contractor would desire. While the Department believes that the information as to the conditions and materials reported is accurate, it does not warrant that the information is necessarily complete. This information has been edited or abridged and may not reveal all the information which might be useful or of interest to the contractor. Consequently, the Department will make available at its offices, the field logs relating to this boring.

Since subsurface conditions outside each borehole are unknown, and soil, rock and water conditions cannot be relied upon to be consistent or uniform, no warrant is made that conditions adjacent to this boring will necessarily be the same as or similar to those shown on this log. Furthermore, the Department will not be responsible for any interpretations, assumptions, projections or interpolations made by contractors, or other users of this log.

Water levels recorded on this log should be used with discretion since the use of drilling fluids in borings may seriously distort the true field conditions. Also, water levels in cohesive soils often take extended periods of time to reach equilibrium and thus reflect their true field level. Water levels can be expected to vary both seasonally and yearly. The absence of notations on this log regarding water does not necessarily mean that this boring was dry or that the contractor will not encounter subsurface water during the course of construction.

WATER MEASUREMENT
AB.....After Bailing
AC.....After Completion
AF.....After Flushing
w/C.....with Casing
w/M.....with Mud
WSD.....While Sampling/Drilling
w/AUG.....with Hollow Stem Auger

MISCELLANEOUS
NA.....Not Applicable
w/.....with
w/o.....with out
sat.....saturated

DRILLING OPERATIONS
AUG.....Augered
CD.....Core Drilled
DBD.....Disturbed by Drilling
DBJ.....Disturbed by Jetting
PD.....Plug Drilled
ST.....Split Tube (SPT test)
TW.....Thinwall (Shelby Tube)
WS.....Wash Sample
NSR.....No Sample Retrieved
WH.....Weight of Hammer
WR.....Weight of Rod
Mud.....Drilling Fluids in Sample
CS.....Continuous Sample

SOIL/CORE TESTS
SPT N_{60}.....ASTM D1586 Modified
Blows per foot with 140 lb. hammer and a standard energy of 210 ft-lbs. This energy represents 60% of the potential energy of the system and is the average energy provided by a Rope & Cathead system.
MC.....Moisture Content
COH.....Cohesion
?.....Sample Density
LL.....Liquid Limit
PI.....Plasticity Index
F.....Phi Angle
REC.....Percent Core Recovered
RQD.....Rock Quality Description
(Percent of total core interval consisting of unbroken pieces 4 inches or longer)
ACL.....Average Core Length
(Average length of core that is greater than 4 inches long)
Core Breaks.....Number of natural core breaks per 2-foot interval.

DISCONTINUITY SPACING

Fractures	Distance	Bedding
Very Close	<2 inches	Very Thin
Close	2-12 inches	Thin
Mod. Close	12-36 inches	Medium
Wide	>36 inches	Thick

RELATIVE DENSITY

Compactness - Granular Soils	BPF
very loose	0-4
loose	5-10
medium dense	11-24
dense	25-50
very dense	>50

Consistency - Cohesive Soils	BPF
very soft	0-1
soft	2-4
firm	5-8
stiff	9-15
very stiff	16-30
hard	31-60
very hard	> 60

COLOR

blk	Black	**wht**	White
grn	Green	**brn**	Brown
orng	Orange	**yel**	Yellow
dk	Dark	**lt**	Light
IOS	Iron Oxide Stained		

GRAIN SIZE /PLASTICITY

VF	Very Fine	**pl**	Plastic
F	Fine	**slpl**	Slightly Plastic
Cr	Coarse		

SOIL/ROCK TERMS

C	Clay	**Lmst**	Limestone
L	Loam	**Sst**	Sandstone
S	Sand	**Dolo**	Dolostone
Si	Silt	**wx**	weathered

G.....Gravel (No. 10 Sieve to 3 inches)
Bldr.....Boulder (over 3 inches)
T.....till (unsorted, nonstratified glacial deposits)

DRILLING SYMBOLS

- Vane Shear Test
- WS — Washed Sample (Collected during plug drilling)
- Augered
- Plug Drilled
- Split Tube Sample (SPT N_{60} 2 in. spilt tube with liners)
- Thin Wall Sample (3 in. Shelby Tube)
- Core Drilled (NV Core Barrel unless otherwise noted)
- CS — Continuous Soil Sample
- A/J — Augered & Jetted
- Jet — Jetted
- A/P — Augered & Plug Drilled

Mn/DOT Triangular Textural Soil Classification System