

Symbols to be used for designation of subsurface materials on all boring logs and subsurface sections

OVERBURDEN:

- Glacial till
- Gravel
- Sand
- Silt
- Clay
- Organic Material

SEDIMENTARY ROCKS

- Limestone
- Siltstone
- Sandstone
- Massive Mudstone or Claystone
- Shale
- Coal
- Dolomite
- Conglomerate
- Limestone containing nodules of chert or flint

- Breccia
- Crystalline Limestone
- Bedded Chert
- Marble
- Chalk
- Gypsum
- Salt
- Anhydrite

METAMORPHIC & IGNEOUS ROCKS:

- Schistose or Gneissoid Granite
- Granite
- Gneiss
- Quartzite
- Schist
- Basic Lava Flows
- Bedded Tuff

MISCELLANEOUS

- Slag
- Fill
- Concrete
- Void (Indicate Size of Void)
- Water
- Approximate Existing Ground Surface
- Approximate Top of Rock

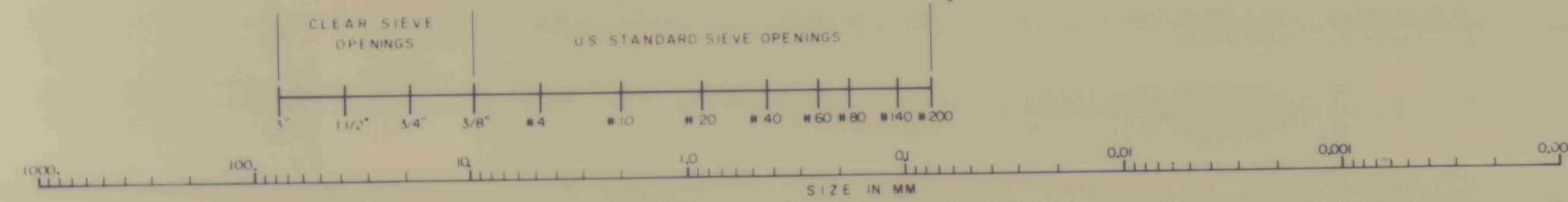
- P INDICATES PITCHER BARREL SAMPLER
- 2" O.D. SPLIT BARREL SAMPLE NUMBER
- 75/0.5' PENETRATION REFUSAL RESISTANCE AND FRACTIONAL INCREMENT DRIVEN IN FEET
- 12-10-75 GROUND WATER LEVEL AND DATE
- U.S.C.S. UNIFIED SOIL CLASSIFICATION SYSTEM (CAPITAL LETTERS INDICATE LAB TEST CLASSIFICATION, LOWER CASE LETTERS INDICATE VISUAL FIELD CLASSIFICATION)
- SAMPLE NUMBER
- 3" UNDISTURBED SAMPLE (SHELBY TUBE) RECOVERY INCHES
- PLASTIC LIMIT (PL) ATTERBERG LIMITS LIQUID LIMIT (LL)
- ROD (ROCK QUALITY DESIGNATION - PERCENT) (LENGTH OF NUMBER OF PIECES GREATER THAN 4 INCHES DIVIDED BY THE LENGTH OF THE CORE RUN)
- 90 INDICATES PERCENT OF CORE RECOVERED (LENGTH OF CORE RECOVERED DIVIDED BY LENGTH OF CORE RUN)
- DRILLING FLUID LOSS %
- DRILLING FLUID REGAINED %

TRACE - INDICATES PRESENCE OF LESS THAN 5% OF SUBJECT MATERIAL BY WEIGHT.
 SOME - INDICATES PRESENCE OF 5 TO 30% OF SUBJECT MATERIAL BY WEIGHT.
 AND - INDICATES PRESENCE OF 30 TO 50% OF SUBJECT MATERIAL BY WEIGHT.

| CONSISTENCY | UNCONFINED COMPRESSIVE STRENGTH TONS PER SQUARE FOOT |
|--------------|------------------------------------------------------|
| VERY SOFT | LESS THAN 0.25 |
| SOFT | 0.25 TO 0.50 |
| MEDIUM STIFF | 0.50 TO 1.0 |
| STIFF | 1.0 TO 2.0 |
| VERY STIFF | 2.0 TO 4.0 |
| HARD | MORE THAN 4.0 |

| DESIGNATION | BLOWS PER FOOT |
|--------------|----------------|
| VERY LOOSE | 0-4 |
| LOOSE | 5-10 |
| MEDIUM DENSE | 11-30 |
| DENSE | 31-50 |
| VERY DENSE | OVER 50 |

STANDARD PENETRATION RESISTANCE IS THE NUMBER OF BLOWS REQUIRED TO DRIVE A 2 INCH O.D. SPLIT BARREL SAMPLER 12 INCHES USING A 140 POUND HAMMER FALLING FREELY THROUGH 30 INCHES. THE SAMPLER WAS DRIVEN 18 INCHES AND THE NUMBER OF BLOWS RECORDED FOR EACH 6 INCH INTERVAL. THE RESISTANCE TO PENETRATION IS INDICATED ON THE DRAWING AS BLOWS PER FOOT.



| GRAVEL | | SAND | | SILT AND CLAY | |
|--------|------|--------|------|---------------|------|
| COARSE | FINE | COARSE | FINE | COARSE | FINE |

U.S.C.S. CLASSIFICATION FOR SOILS

| BOULDER | COBBLE | PEBBLE | GRAVEL | SAND | SILT | CLAY |
|----------------------|---------------------|---------------------|---------------------|-------------------|-----------|---------------------|
| BOULDER CONGLOMERATE | COBBLE CONGLOMERATE | PEBBLE CONGLOMERATE | GRAVEL CONGLOMERATE | SAND CONGLOMERATE | SILTSTONE | CLAYSTONE AND SHALE |

WENTWORTH SCALE FOR ROCK

| DESCRIPTIVE TERMS | DEFINING CHARACTERISTICS |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| VERY SOFT | CRUSHES UNDER PRESSURE OF FINGERS AND/OR THUMB |
| SOFT | CRUSHES UNDER PRESSURE OF PRESSED HAMMER |
| MEDIUM HARD | BREAKS EASILY UNDER SINGLE HAMMER BLOW BUT WITH CRUMBLY EDGES |
| HARD | BREAKS UNDER ONE OR TWO STRONG HAMMER BLOWS BUT WITH RESISTANT SHARP EDGES |
| VERY HARD | BREAKS UNDER SEVERAL STRONG HAMMER BLOWS BUT WITH VERY RESISTANT SHARP EDGES AND MAY SPALL LEAVING CONCHOIDAL FRACTURES |

THE SPACING OF THE DISCONTINUITIES IN THE ROCK MAY BE DESCRIBED BY ONE OF THE FOLLOWING TERMS

| DESCRIPTIVE TERMS | SPACING |
|-------------------|------------------|
| VERY BROKEN | LESS THAN 1 IN |
| BROKEN | 1 IN TO 3 IN |
| SLIGHTLY BROKEN | 3 IN TO 6 IN |
| MASSIVE | 6 IN AND GREATER |

TERMS USED TO DESCRIBE BEDDING THICKNESS

| VERY THICKLY BEDDED | THICKER THAN 1 m |
|---------------------|---------------------|
| THICKLY BEDDED | 30-100 cm |
| MEDIUM BEDDED | 10-30 cm |
| THINLY BEDDED | 3-10 cm |
| VERY THINLY BEDDED | 1-3 cm |
| THICKLY LAMINATED | 0.3-1 cm |
| THINLY LAMINATED | THINNER THAN 0.3 cm |

THE BORING LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE BORING LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE BORING LOCATIONS.

THE TEST PIT LOGS AND RELATED INFORMATION DEPICT SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS OCCURRING AT THESE TEST PIT LOCATIONS. ALSO THE PASSAGE OF TIME MAY RESULT IN A CHANGE IN THE CONDITIONS AT THESE TEST PIT LOCATIONS.

NOTES:

- FOR PLAN AND LOCATION OF BORINGS AND TEST PITS SEE DWG. 78-359-E2.

| | | |
|---------------------------|-----------|-----------------|
| DRAWING NO. 78-359-E 8 | SHEET NO. | FIGURE NO. 9 |
|---------------------------|-----------|-----------------|

TEST PITS TP-12 THROUGH TP-16 AND GENERAL NOTES AND LEGEND

BETHLEHEM MINE No. 101 CENTURY, WEST VIRGINIA

PREPARED FOR

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D'APOLONIA