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BUILDING AND DEVELOPMENT SERVICES ACID SULFATE SOILS TESTING POLICY Effective date March 1, 2007

PURPOSE: Insure that soils contain acceptable levels of active acidity (pH) and potential acidity (long term lime requirements to offset sulfide oxidation), such that they will: (A) Support adequate and permanent vegetation, (B) Minimize degradation to concrete, metal, and other building materials, and (C) Minimize damage to surface and ground water resources .

POLICY: The permit holder, developer, or contractor of any newly developed lot for residential or commercial construction shall have the soil tested for pH and for potential acidity to the maximum depth of excavations, and prior to placing any ground cover, to determine if soil remediation is needed to maintain acceptable short and long term soil pH levels in the soils. The authority for this administrative policy is contained within the Virginia E&S Handbook §3.33.

TESTING AREA: All areas within the City limits.

ACCEPTABLE LEVELS: The soil: water pH test shall register between pH 5.5 and 7.5 and the measured potential acidity (via Acid-Based Accounting or Hydrogen Peroxide Oxidation Method) shall be greater than or equal to -5 tons of calcium carbonate lime demand per thousand tons of material tested.

REMEDATION: When acid sulfate soil remediation is needed to obtain acceptable minimum short and long term pH levels, the permit holder shall develop a remediation plan which shall be approved by the Tri-County/City Soil & Water Conservation District and the Fredericksburg Building & Development Services Department prior to implementation.

RECOMMENDED TIME AND METHOD OF TESTING: It is strongly recommended that the permit holder evaluate soils for the presence of active (low pH) or potentially acid sulfate soils prior to developing the lot for construction.

TIMING OF INSPECTION: FINAL INSPECTIONS WILL NOT BE SCHEDULED UNTIL ACCEPTABLE SOILS ARE ESTABLISHED, CERTIFIED, AND APPROVED BY BUILDING AND DEVELOPMENT SERVICES.

PROCEDURES:

TESTING PARAMETERS: On site soil and underlying parent material evaluations shall be performed by a Virginia Certified Soil Scientist, Virginia Certified Engineer, or a Virginia Certified Geologist. Laboratory testing for soil pH and potential acidity must be performed by a qualified laboratory experienced in the analytical protocols cited below.

Sobek, A.A., W.A. Schuller, J.R. Freeman, and R.M. Smith. 1978. Field and Laboratory Methods Applicable to Overburden and Minesoils. EPA Pub. 600/2-78-054. U.S. Govt. Printing Office, Washington DC.

Baseline testing on undisturbed materials shall consist of at least one boring to the maximum depth of excavations with contrasting soil horizon and/or geologic units described, logged, and composite sampled. Soil pH testing is required for all delineated layers. Potential acidity testing is required for all layers with a soil: water pH < 5.0 and/or for all layers deeper than 48 inches that are dominantly gray or black in color (Munsell color chroma < 3). For final grade and revegetation prescriptions, soil samples shall be 12 inches (1 foot) deep minimum, per every 2,000 square feet of developed yard after final grading has been completed and prior to placing any ground cover.

These are minimum testing requirements. The person conducting the test may require more borings to satisfy his/her own findings. The documents that are submitted shall be signed and sealed by the engineer and shall state that the active pH and potential acidity levels are within acceptable limits for the entire lot.