



Humboldt County Department of Health and Human Services

DIVISION OF ENVIRONMENTAL HEALTH

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APPENDIX VIII

WET WEATHER TESTING OF SOILS

WET WEATHER TESTING

The **wet weather test period** in Humboldt County begins after the cumulative rainfall in Eureka exceeds 19 inches. The test period may be opened earlier if the Division of Environmental Health (DEH) determines that saturated conditions exist. The season will be closed **April 1st** unless extended in writing by the Director of Environmental Health.

Wet weather testing is performed for two distinct purposes:

1. To determine soil permeability under saturated conditions
2. To determine the highest anticipated levels of groundwater or saturated soil during the rainy months.

WET WEATHER PERCOLATION TESTING TO DETERMINE PERMEABILITY

Wet season percolation testing is required for sites where clay (zone 3 or 4) soils exist. The testing must be completed in the most restrictive layers within effluent absorption or treatment portions of the proposed leaching system. Soils within 3 feet of proposed trench bottoms are included in "treatment" portions of the system.

Percolation testing of more than one horizon may be necessary to determine which of the layers is most restrictive. Percolation testing may be completed at any time during the wet weather test period.

GROUND WATER LEVEL DETERMINATIONS

Soil Mottling

In most cases, ground water levels and seasonally saturated soils can be predicted (summer or winter) by the highest extent of soil mottling or gleying in the profile. The most conservative approach to drainfield design is based on the assumption that mottling levels reflect seasonal saturation.

On older landforms on the North Coast, however, mottling may be a remnant of prior geologic/climatic conditions, and may not reflect seasonal saturation. Likewise, some sites underlain by very coarse soils or gravel may not exhibit mottling even though saturation occurs every winter. For these sites, the highest extent of saturation must be determined by the **direct observation** method. Field personnel are encouraged to proceed with this method if there is any doubt about the levels of highest anticipated groundwater.

Additional information about areas where transient water tables occur may be obtained from DEH Land Use staff.

Direct Observation Method

Since groundwater levels may fluctuate throughout the wet season, it is necessary to monitor the levels over an extended period of time. The monitoring is accomplished by the installation of observation wells (at least two per parcel) in proposed leachfield and reserve areas. Measurements must be taken at least once each week for at least three (3) consecutive weeks during the wet weather testing period. For accurate determinations of the highest extent of groundwater, the duration of monitoring should include at least one substantial rainfall event.

Observation Well Construction

The construction of observation wells must conform as closely as possible to the attached drawing. The wells must be augured, drilled, or bored. The placement of pipes in backhoe pits may be acceptable if supervised by a consultant. The depth of wells must be sufficient to verify appropriate groundwater separation from proposed leach trenches. Wells of shallow depths may be used to identify saturation in upper horizons.

DEH shall be notified in writing within (5) days of observation well construction. A sketch of the location of wells in addition to the AP number must be included on the notification. A cross-section diagram of the monitoring well, including depth measurements and soils profile data, must also be submitted. Applicants are encouraged to install observation wells as early in the season as possible to ensure completion of monitoring requirements prior to the April 1st deadline.

Reporting of Data

Observation well measurements must be submitted in tabular form (see attachment) as a supplement to other soils test data required for sewage disposal site approval. All measurements shall be included.

OBSERVATION WELL LOG

Job Number _____

Project _____

AP # _____

Test Hole # _____

Elevation of Rim _____

Depth of Well _____

Date	Time	Depth to Water Surface	Total Rainfall (to date)	Rainfall Past 24 hours*	Comments

* Data from Weather Bureau – (707) 443-7062 (Eureka measurements)

** Please attach site plan showing locations of observation wells