

# Explanation of the Well Replacement Program

The Well Replacement Program for the investigation and replacement of private water supplies contaminated with chloride is administered by the Well Section within the Bureau of Highway Maintenance. The Well Section is comprised of an Engineering Technician who performs the duties statewide under the general supervision of the Bureau of Highway Maintenance Administrator. The program is pursuant to RSA 228:34, which was enacted in 1965. Replacing of private water supplies originally commenced in connection with right-of-way impacts and is continuing today.

Upon receiving a complaint from a property owner who suspects chloride contamination of a well, the engineering technician is assigned to visit the site and initiate an investigation. During the first visit, the technician explains the program in detail and gathers pertinent information relative to the water supply. The technician also draws a free-hand sketch of the property, indicating the physical location of the existing well and approximate dimensions of all of the facilities on the property, including observed drainage patterns on the property and takes photographs of the immediate area. Most importantly, they take a water sample and deliver it to the State's Public Health Laboratory at DHHS for a standard drinking water analysis.

The laboratory returns the results to the Department of Transportation in about four weeks and the program staff reviews all of the initial data. Particular attention is given to the date of establishment of the well, adequacy of its construction, the proximity of any underground disposal facility and observed drainage patterns. If the well was established after July 1, 1965, and is within 50 feet of the right of way or any highway drainage facility, the property owner is advised that the investigation is discontinued because of the ineligibility of the water supply as explained in RSA 228:34.

If the initial full analysis results indicate bacteria contamination, the property owner is advised and provided directions for disinfecting the water supply. Once disinfection is completed and the Department is notified, the technician resamples for bacteria. Once evidence of bacteria is cleared, the investigation may continue. If the bacteria contamination persists, the investigation is discontinued.

If the initial full analysis results indicate the presence of nitrates, coliform bacteria or other indications of possible contamination by sewage, the water supply technician will most likely perform a dye test on the next visit. In this procedure, dye is flushed into the septic system and additional water samples are secured 1,2,3 and 7 days later. Should the dye test appear when the samples are examined under the laboratory's fluoremeter, the investigation would be discontinued and the property owner cautioned relative to the septic contamination and advised of the ineligibility of the well replacement program, since the salts in septic effluent can contribute chloride ions in the well. The Department will not assume responsibility for unpotable water supplies.

Another cause for discontinuance of the investigation at this point would be low chlorides, say 30 ppm or less, as this is consistent with normal groundwater. New Hampshire Department of Transportation will reopen the investigation at any time that we feel the chlorides have significantly increased.

If the water supply is not disqualified by reason of the foregoing, the technician continues to visit and take samples on approximately a monthly basis. These samples are checked for chlorides only by this Department's lab at the Bureau of Materials & Research. The chloride content usually fluctuates with seasonal changes in precipitation and groundwater tables. For this reason, we prefer to sample for a period of at least one year, unless there is some obvious cause such as the location of a highway maintenance headquarters or large piles of salt in the immediate neighborhood.

The Department may assume responsibility, on behalf of the State of New Hampshire, for a private water supply when the level of chloride content becomes sustained above 250 ppm, which is the level established by the U.S. Public Health Service's Drinking Water Standards of 1962. (The Department utilizes chloride content as the indicator of effects from the highway since chlorides in natural groundwater normally do not exceed 30-50 ppm. Sodium is not considered as an indicator of road salt contamination due to the natural occurrence of sodium in groundwater at irregular levels.) The obligation is discharged by one of the means listed in the statute. In the event the obligation is fulfilled by a payment of a damage award, which must have the approval of the Governor and Council, the property owner must sign a release absolving the state of future responsibility for the water supply. In some instances, only partial responsibility is assumed on behalf of the state, when it is determined that excessive chloride contamination from highway operations has further lessened the quality of a water supply that is already unsuitable due to other natural causes, such as insufficient quantity, excessive levels of other minerals such as iron and manganese, etc.

In most instances, chloride contamination has occurred to old, shallow wells and the corrective action has been the construction of deep drilled well replacements. Such construction is accomplished following the Department's standard contracting procedures, and the work done by private contractors is supervised by the engineering technician.

# TITLE XX

## TRANSPORTATION

### CHAPTER 228

#### ADMINISTRATION OF TRANSPORTATION LAWS

#### Commissioner, Deputy and Assistant Commissioners

#### Section 228:34

##### **228:34 Private Water Supplies. –**

When there is a complaint that privately owned water supplies have been destroyed or rendered unfit for use as water supplies because of construction or maintenance operations on the state highway systems, the commissioner shall investigate and determine the extent, if any, of state responsibility.

I. Upon determination that there is state responsibility the commissioner may authorize the use of highway funds to:

- (a) Replace or repair the damage to the water supplies, or
- (b) Pay damages in lieu of replacement or repair, or
- (c) Purchase real property in lieu of replacement or repair, or
- (d) Enter into agreements with water departments or governmental units to assist in extending water lines or establishing new water systems.

II. The commissioner may not authorize the use of state highway funds when it is determined that water supplies that are dug, drilled or developed after July 1, 1965 are located closer than 50 feet to highway rights-of-way and drainage ditches or both, or where the location does not allow or provide for adequate surface drainage.

III. The commissioner may issue rules and regulations in accordance with recognized standards regarding water supplies, that include, but are not limited to, quality and quantity of replaced water supplies, deficiencies other than chlorides rendering an existing supply unpotable, hardship cases, and responsibility for replacement of piping, tanks, pumps, heating systems or other fixtures.

**Source.** RSA 229:11-a. 1959, 225:1. 1965, 338:1. 1981, 87:1, eff. April 20, 1981.